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جامعة الفيصل
Alfaisal University

YEAR ANNIVERSARY

UNDERGRADUATE
CATALOG

Table of Contents

Deanship of Student Affairs, Admissions, and Registration

Alfaisal University Undergraduate Catalog contains current information regarding the University calendar, admissions, degree requirements, fees, regulations, and course offerings. It is not intended to be and should not be relied upon as a statement of the University's contractual undertakings.

Alfaisal University reserves the right in its sole judgment to make changes of any nature in its program, calendar, or academic schedule whenever it is deemed necessary or desirable, including changes in course content, the rescheduling of classes with or without extending the academic term, cancelling of scheduled classes and other academic activities, and requiring or affording alternatives for scheduled classes or other academic activities, in any such case giving such notice thereof as is reasonably practicable under the circumstances.

Alfaisal University is committed to providing information in a manner that is accessible to all. If you are in need of a printed copy of the material presented in the University Undergraduate Catalog, please contact the Deanship of Student Affairs, Admissions, and Registrations for a printout of the website.

Deanship of Student Affairs, Admissions, and Registrations can be reached by e-mail, phone, or mail:

- E-mail: Deanship of Student Affairs, Admissions, and Registrations
- Phone: Local Tel: 920 000 570 International Tel: +966 11 215 7777
- Address: Alfaisal University, Deanship of Student Affairs, Admissions, and Registrations, Al Takhassousi, Al Zahrawi Street Riyadh 11533

University Undergraduate Catalog information is subject to change. Please check back to this website for the most up-to-date information.

General Information

Profile

FOUNDED: Chartered in 2008

LOCATION: Riyadh-Saudi Arabia
P.O. Box 50927, Riyadh, 11533,
Kingdom of Saudi Arabia

CAMPUS: A truly architecturally stunning campus, situated on the austere grounds of the palace of his Majesty the Late King Faisal, located in the heart of Riyadh, the political and the financial center of Saudi Arabia and the region.

TYPE: Baccalaureate-Arts and Sciences, and Master of Science Focus; a private non-profit University

CALENDAR: Two fifteen-week regular semesters, eight-week summer session

DEGREES/MAJORS: Bachelor of Arts, Bachelor of Science, Master of Science; more than 30 regular majors, unique area majors, plus minor degree; more than 10 accredited Graduate degrees, and many Executive Education Courses.

ENROLLMENT: 3604 undergraduates, 587 graduates (Fall 2022)

STUDENT/FACULTY: 18:1 (undergraduate)

FACULTY PH.D.: 84% of full-time faculty hold terminal degrees in their field

FINANCIAL AID: More than 22 million Saudi Riyals distributed in 2020-2021; extensive program of university and college-funded scholarships.

ATHLETICS: Inter-collegiate sports teams.

ALUMNI: More than 4,000 from more than 42 countries.

Distinctions

The Times Higher Education World University Rankings 2019: College of Medicine and College of Science were ranked 1st in Saudi Arabia, the University was ranked 2nd in Saudi Arabia and the Arab Region, and 301-350 globally. Alfaisal University is also recognized as one of world's top 200 institutions under 50 Years old. 2016 US News: Alfaisal University ranked 12th out of 125 institutions in Arab Region & 5th in Kingdom as Best Arab Universities. QS University Rankings for Arab Region 2015: Alfaisal ranked 1st in Kingdom for second

year in row in number of citations per paper. Nature Index 2016 showed Alfaisal University ranking 3rd & 5th in national & regional collaborations, respectively.

The Vision and the Mission of the University

The vision of Alfaisal University is to be a world-class institution and a pioneer in innovation and knowledge applications. The University mission is to be a student-centered university that creates and disseminates knowledge through world-class academic programs, research, and service that benefits humanity.

In advancing its mission, the University adhere to the current values:

- *Culture:* Understand and value core elements of Saudi culture.
- *Knowledge:* Contribute new knowledge in the fields of science and technology.
- *Performance:* Commit to continuous improvement in performance and quality.
- *Leadership:* Demonstrate leadership with respect to academics, research, and service, and build leaders.
- *Faith:* Honor the role of faith in life.
- *Integrity:* Demonstrate professional and institutional integrity.
- *Responsibility:* Embrace social and environmental responsibility.
- *Honesty:* Demonstrate honesty in one's actions and treatment of others.
- *Service:* Provide value-added service at the local, regional, and international levels.
- *Learning:* Instill the habit of lifelong curiosity and learning.
- *Equal opportunity:* Strive for equal opportunity within the context of valuing talent and ability.

Fulfilling its distinctive mission, Alfaisal University's aim is to continue to be one of the finest private non-profit universities in the country and the region.

Presidents

- Dr. Mohammed Alhayaza 2015-Present
- Dr. Faisal AlMubarak (Provost) 2010-2015
- Dr. Alan Goodridge (Provost) 2008-2010

Historical Contexts

The King Faisal Foundation (KFF) which was established in 1976 by the heirs of the late King Faisal, launched Alfaisal University as the premier coeducational institution for business, engineering, science, and medical education and research in the Kingdom and the region. The deeply held principle of KFF was that a well-educated population was the foundation for a strong nation. The Foundation has always promoted a pragmatic approach to furthering the opportunities for Saudi youth. The creation of a university that strives to achieve excellence in several fields is yet another important advance towards fulfilling its desire to enrich the country's enterprising individuals with the ability to compete on a global level. Financial support provided by the King Faisal Foundation has also produced the King Faisal School, Prince Sultan College for Tourism and Business, and Effat College (for women).

Plans for establishing Alfaisal University began in 1999. The first "Concept Paper" regarding the University was prepared in late 2000 with the support of the Carlyle Group. It was submitted to the Economic Offset Committee in February 2001 to qualify the University under the Economic Offset Program. Approval was received in July 2001. Four non-Saudi multinational companies agreed to become co-founders along with six Saudi organizations. In April 2003, the Offset Committee granted a multiple of eight offset credits to the non-Saudi co-founders for cash contributions. The Board of Trustees negotiated with the Ministry of Higher Education to secure an acceptable Charter that assured the independence of the University. The Charter (#10905) was approved by the Ministry on 10 July 2004 and unanimously ratified by the Board of Trustees on 25 October 2004.

Students at Alfaisal University are provided with opportunities for intellectual, cultural, social, emotional, and physical growth. Within the framework of the University founding principles, the University academic experience is complemented by meaningful student life activities and a variety of cultural events.

The Scenic Campus

The campus is situated on the beautiful grounds of the late King Faisal's Palace at Al Maathur in the center of Riyadh, a historical location ideal for academic pursuits. The first two campus buildings (Science and

Business) were completed in 2008 and 2009, respectively. Students began University studies in Engineering, Business, and Medicine in October 2008 with majors in the College of Science and General Studies beginning in 2011. A College of Pharmacy was added in 2015, and a College of Law & International Relations in 2021.

Campus Offices

Campus Offices	
Accreditation	215-11-7619
Admissions toll free	920 000 570
Alumni	215-11-7987
Campus Safety	215-11-7853
College of Business	215-11-7712
College of Clinical Pharmacy	215-11-7646
College of Engineering	215-11-7714
College of Law	215-11-7958
College of Medicine	215-11-7650
College Science	215-11-7705
Communications and Marketing	215-11-8909
External Relations	215-11-7950
Facilities	215-11-7861
Finance	215-11-7880
Graduate School	215-11-7705
Health Services/Clinics	215-11-7995-7997

Board of Trustees

HRH. Prince Khalid Al Faisal Bin AbdulAziz Al-Saud Chairman Board of Trustees

HRH. Prince Turki Al-Faisal Bin Abdulaziz Al-Saud King Faisal Foundation (KFF)

HH. Prince Bandar Bin Saud Bin Khalid Al-Saud King Faisal Foundation (KFF)

HRH. Prince Saud Bin Turki Al-Faisal Bin Abdulaziz Al-Saud King Faisal Foundation (KFF)

H.E. Dr. Majid Bin Ibrahim Alfayyadh King Faisal Specialist Hospital & Research Center (KFSHRC)

H.E. Dr. Ghasan Bin Abdulrahman Alshibl

Al-Sheikh Hamad Bin Abdulaziz Al-Jomaih

Dr. Abdulaziz Alsebail

Dr. Maher Alodan

Eng. Mohammed Bin Abdulrahman Alaqeel Jarir Investment

Eng. Ahmed Jazzar President Boeing-Saudi Arabia

Mr. Abdulaziz Al Faraj BAE Systems Saudi Arabia

Dr. Gada bint Abdulaziz Bin saif

Dr. Bassam Bin Abdullah Albassam

Dr. Saleem Bin Saleh Alsaleem

Dr. Manaji Bin Hassan Alkenani

Dr. Abdulmalik Bin Mohammed Alktheri

Dr. Mohammed Bin Ibrahim Alodhaib

H.E. Dr. Mohammed Bin Ali Alhayaza President, Alfaisal University

Officers of the Administration

Mohammed Alhayaza PhD, President

Khaled M. AlKattan, MD, FRCS (Edn), Vice President for Administration and Finance

HRH. Princess Maha Al Saud, PhD, Vice President for External Relations

Yousef Alyousef, VP of Graduate Studies

University Administrative Officers

Matheus (Theo) F. A. Goosen, PhD, Associate Vice President for Research & Graduate Studies

Khaled M. AlKattan, MD, FRCS (Edn), Dean, College of Medicine

Muhammad Anan, PhD, Acting Dean, College of Engineering

Bajis Dodin, PhD, Interim Dean, College of Business

Matheus (Theo) F. A. Goosen, PhD, Acting Dean, College of Science, & General Studies

Mustafa Abdelwahid, PhD, Acting Dean of Admission & Registration, Student Affairs

Saddam Muthana, Director of Quality Assurance and Accreditation

Mustafa Abdelwahid, PhD, University Librarian

Chairman's Message

A word from HRH Prince Khalid Al Faisal bin Abdulaziz

Within the framework of its caring for human development, which is the most important basic factor in total development, King Faisal Foundation extends its projects in serving education through King Faisal Schools, Prince Sultan College of Tourism and Management, Effat College, in addition to Scholarship Programs. Today it presents Alfaisal University as a contemporary Arab academic university that has international scientific affiliations with similar institutions. Alfaisal uses its expertise to develop educational techniques and provide appropriate mechanisms to mobilize the wisdom of the Creator of the human mind's abilities in order to innovate and upgrade life.

It is obvious that the main handicap that retards Arab societies, in general, is the low quality of education and the inability of its prevailing systems and means – such as prompting and keeping by heart – to qualify humans to be able to advance a society pursuant to a scientific rule that adopts contemporary means and technology, and to fulfill the urgent need for training the educated on thinking so as to reach the right decision.
It is illogical to confine the mission of upgrading education to the State alone. It is unfair to the State and to the investment in the human element that serves society as a whole. All of society must stand shoulder to shoulder to carry out this mission.

Therefore, the aim of this University is to provide the student with the educational level he seeks abroad, to be an example for voluntary work which the private sector can contribute to the development of our homeland, and, at the same time, to employ its abilities and research centers to serve society, and to build bridges to the most advanced international sites in educational techniques and tools.

President’s Message

Greetings from Alfaisal University,

I am very proud to be president of Alfaisal University, an institution increasingly recognized as one of the best in Saudi Arabia.

Since its founding by the King Faisal Foundation in 2002 as one of the first private nonprofit, research and student-centered universities in the Kingdom, Alfaisal University has been advancing at a confident and sustainable pace to serve the community as a quality education provider in Saudi Arabia. The University has strong relationships with international and local universities, business communities and works closely with organizations to stay at the forefront of advanced pedagogical practices. Alfaisal University capitalizes on these relationships for the benefit of its students. Research, as well as recent trends, indicates that we must move from theory-based curricula to task-based curricula, allowing students to be exposed to the most up-to-date practices.

English is the language of instruction in our four colleges: Business, Engineering, Science, and Medicine. Each offers world-class undergraduate and graduate programs for the finest male and female students in the Kingdom and the Region. Located in the heart of Riyadh, the center for commerce, industry, and research, with our solid reputation and affiliations with leading hospitals and ample access to our faculty, more students are looking to launch their medical career at Alfaisal University. Alfaisal offers its students the opportunity to develop their full potential with outstanding facilities, inspiring academics and research-led teaching that will enable them to graduate as highly skilled, well-developed individuals able to transition seamlessly into the workplace.

Alfaisal University is a highly diverse and welcoming community with a beautiful campus. Big enough to have an international presence and impact, yet small enough that students are able to develop a strong sense of community with lifelong connections to friends and mentors.

Alfaisal University's rise to prominence has been the result of many factors: the contributions of talented and dedicated faculty; the energy, enthusiasm, and inventiveness of graduate and undergraduate students; the dedication and support of excellent staff; the passion of our founders to make a difference in the Kingdom and the world; and the support of our donors and partners.

I invite you to explore what Alfaisal has to offer you through our website and to discover what sets us apart from other fine universities.

I believe you'll be impressed by what our university has achieved so far, and as confident as I am in its potential to accomplish even more great things in the near future. Your prescription for success begins at Alfaisal.

Sincerely,
Mohammed Alhayaza
President, Alfaisal University

Catalog Information

Using the Catalog

The statements in this catalog are for informational purposes only and should not be construed as the basis of a contract between a student and Alfaisal University. The course offerings and requirements of the University are continually under review and revision. This catalog presents those in effect at the time of publication. Courses listed in this publication are subject to revision without advance notice and are not necessarily offered each term or each year. Information regarding changes will be available in the Offices of Admissions, the Provost, the colleges, and major departments. It is especially important that each student note that it is his or her responsibility to be aware of current graduation requirements for a particular degree program.

Academic Terminology

Academic Affairs One of the four major divisions of the University, headed by the Vice President and Provost, that focuses on educational needs of students.

Academic Good Standing A minimum cumulative grade point average of 2.00, which is required for continued enrolment in the University.

Academic Year The period commencing with the fall semester (16 weeks + final exams) and continuing through the spring semester (16 weeks + final exams) and summer term (8 weeks).

Alumni Individuals who have attended or graduated from a particular college or university.

Board of Trustees The governing body for Alfaisal University.

Co-requisite indicates a course that you must have satisfactorily enrolled in at the same time as the listed course.

Credit Hour A standard unit of measuring course work; credit hours are assigned to a particular course and count toward graduation, except in remedial courses. Typically, a course that meets for three hours a week is worth three credit hours.

Cross-listed Course offered by more than one department but treated as one course for credit purposes.

Curriculum A program of study covering the entire undergraduate or graduate career and designed to satisfy the requirement for a degree.

Dean The highest administrative officer of a college.

Department Chairperson An administrative officer holding faculty rank; responsible for the primary unit of academic organization.

General Education Requirement Student must take foundation courses in general subjects to obtain a baccalaureate degree.

Grade Point Average (GPA) The total number of grade points divided by the total graded semester hours attempted at Alfaisal University.

Independent Study Intensive study in a special area of the student's interest under the direction of a faculty member. Each individual investigation is to culminate in a comprehensive written report and/or examination and/or artistic project. A maximum of 3 semester hours may be applied toward graduation.

Prerequisite indicates a course that you must have satisfactorily completed before enrolling in the course.

Professional Practice Professional Practice consists of academic/career related work experiences completed for credit either on campus or at a place of business. They may or may not be salaried.

Provost The Vice President for Academic Affairs who is responsible for all academic matters.

Recommendation knowledge, skills, and the completion of courses and other requirements that may assist in a course, but are not required, are recommendations.

Registrar An academic unit that maintains academic records, awards transfer credit, and provides enrolment verification, transcripts, and course registration.

Requirement a mandatory criterion for enrolment in a course. For example, grade of C or higher in a beginning algebra course might be a requirement for a course.

Semester A semester at Alfaisal University is the 14-16-week offered each fall and spring.

Seminar A regular meeting of students, under the guidance of a faculty member, in which each conducts research and exchanges information, problems, and results through informal lectures, reports, and discussion.

Student Affairs One of the four major divisions of the University, headed by the Dean of Admission & Registration, Student Affairs that focuses on personal and non-academic needs of students.

Syllabus A document describing the objectives, outcomes, assessment activities, and structure of a

course.
Transcript The University's official record of credit or degrees awarded, including the courses taken by a student and the grades received in each course.

Units of Instruction

Major: A cohesive combination of courses, including introductory, intermediate, and advanced course work that designates a student's primary area of specialization. Majors are designated on university transcripts.

Minor: A combination of courses designed to provide a cohesive introduction to an area of study beyond the major. Minors are designated on university transcripts upon receipt of degree.

Concentration: A subdivision of a major without specific requirements that is provided for advisement only. Concentrations are not designated on university transcripts. All informal curricular recommendations made by departments and schools (such as emphases, tracks, areas of study, specializations, etc.) should be considered concentrations. Concentrations are advisory only; no approval process is required.

Course Information

The University operates on the semester plan. The credit value of all courses is stated in terms of semester hours. Ordinarily, a semester hour is assigned for a 50- minute class meeting per week for the semester; therefore, a course valued at three semester hours generally meets three periods weekly. In laboratory courses, at least two 50-minute periods per week are ordinarily required for each semester hour of credit.

Course Availability: Some courses listed in the Undergraduate Catalog may not be available each year. Students should consult the major department or school or the University website for class availability. Questions concerning scheduling of courses should be referred to the department chairperson or college Dean.

Course prerequisites in effect at the time of publication are printed in this catalog. However, prerequisites may change over time and do not depend on catalog year.

Course Numbering

Each course bears a distinguishing number for identification and indication of its academic level. The numbering system is as follows:

100-199 Lower-division undergraduate courses, primarily for freshmen and sophomores.
200-299 Upper-division undergraduate courses, primarily for juniors and seniors. A student normally should have completed at least 45 semesters hours before enrolling in a course at this level at the time of registration.
300-399 Advanced undergraduate courses. Open to juniors, seniors, and sometimes graduate students. A student normally should have completed at least 75 semesters hours before enrolling in a course at this level.
400-499 Advanced undergraduate courses. Open to juniors, seniors, and sometimes graduate students. A student normally should have completed at least 75 semesters hours before enrolling in a course at this level.

Course Descriptions

The following information is given for each course: course number (three or five digits preceding the title); course title; and credit value in semester hours. The University may cancel or add course offerings after publication of this *Undergraduate Catalog* depending upon the adequacy of enrolment and availability of faculty. Following the above information, any prerequisites, restrictions on enrolment, and any special considerations are noted. A course prerequisite is knowledge or experience a student is required or recommended to have prior to enrolling in a course.

Sample Course Listing

Course Code: ME 421	**Course Name:** Renewable Energy Systems
Credit Hours: 3	**Pre-requisites:** ME 307
Co-requisites: none	

The course gives an overview of renewable energy sources including biomass, hydroelectricity, geothermal, tidal, wave, wind, and solar power. And it also presents the fundamentals of different renewable energy systems with a main focus on technologies with high development potential. Furthermore, it integrates

math, engineering, climate studies and economics, and enabling students to gain a broad understanding of renewable energy technologies and their potential.

Prerequisites: ME 307 or **Thermal Fluids Engineering II.** The course number, "421," indicates that the course is primarily for senior. The "3 sem. hrs." following the title, indicates the credit value in semester hours. A brief description of the course is provided in the paragraph following the semester hours. The information after "Prerequisites" indicates the required background for enrolling in the course. In the example given, a student must have passed ME 307 or **Thermal Fluids Engineering II** prior to enrolment in ME 421. Course title revisions or a change in the course number are indicated by a "formerly" statement. Additional information about the course is available in the particular departmental or college office.

Colleges and Departmental Abbreviations

The following abbreviations for departmental and college offerings are used both in the program requirement descriptions and in the course descriptions throughout the *Undergraduate Catalog*.

COURSE CODE	COURSE TITLE
ACC	Accounting
AMB	Ambulatory Care
ANT	Anthropology
APP	Advanced Pharmacy Practice
ARB	Arabic
ARE	Architectural
BAN	Business Analytics
BCH	Biochemistry
BEP	Basics of Biostatistics & Epidemiology
BHS	Behavior Science
BIO	Biology
BPH	Pharmacotherapy
BSN	Nanomaterials & Nanotechnology
BST	Biostatistics
CAM	Complementary and Alternative Medicine
CHM	Chemistry
COM	Primary Health Care & Rural Health
CSC	Computer Science
CVP	Cardiopulmonary Block
DIT	Drug Information and Evidence
ECO	Economics
EE	Electrical Engineering
END	Endocrine Block
ENG	English
ENV	Environmental
FIN	Finance
FMT	Forensic Medicine & Toxicology
FON	Foundation Block
FRE	French
GEN	(Genetics
GER	German
GIT	Gastrointestinal Block
GYN	Gynecology
HEM	Hem/One Block
HEN	Health Economics and Health Care Management
HIS	History
HNS	Head & Neck & Special Senses Block
HRM	Human Resources
IE	Industrial Engineering
IMD	Sub-Specialty Medicine
IMM	Immunology
INS	Integrated Neuroscience
IPH	Integrated Pharmacotherapy
IPP	Introductory Pharmacy Practice
ISL	Islamic Studies
KIN	Pharmacokinetics
LAW	Law
LSR	Research Methodology
LST	Life Science
MAT	Mathematics
MCH	Medicinal Chemistry
ME	Mechanical Engineering
MED	Medicine
MGT	Management
MIF	Medical Informatics
MIM	Medical Imaging
MKT	Marketing
MOL	Molecular Medicine
MSF	Medication Safety
MSK	Musculoskeletal Block
MTM	Medication Therapy Management
NEU	Neuroscience Block
NTN	Nutrition
OPM	Operations & Project Management
PCL	Patient Care
PED	Pediatrics
PHC	Pharmaceutics
PHG	Pharmacogenomics

COURSE CODE	COURSE TITLE
PHI	Pharmaceutical Industry
PHL	Philosophy
PHU	Physics
PHY	Physiology
POD	Pathogenesis of Diseases
PRC	Pharmacy Practice
PRO	Communications Skills
PSY	Psychology
PTH	Parenteral Therapy
RAD	Radiology
REG	Pharmacy Regulations
REN	Renal Block
REP	Reproductive Block
RES	Respiratory Block
SCI	Forensic Science
SCR	Self-Care and Non-Prescription Drugs
SE	Software Engineering
SSP	Surgical Subspecialty
STA	Statistics
SUR	Surgery

University Overview

About Alfaisal University

Alfaisal University was founded by the highly reputed King Faisal Foundation in 2002 as one of the first Private Non-Profit, research and teaching universities in the Kingdom committed to achieving international standards of excellence. It has the support of national and international co-founders and distinguished Board Members that have continually supported the university in its mission to remain a student-centered institution committed to research.

Alfaisal University is made up of four faculties, spanning from Business, Engineering, Medicine, Science and General Studies offering world-class marketable undergraduate and graduate programs to the finest male and female students in the Kingdom and the Region. Located in the heart of Riyadh, the center for commerce, industry, and research, Alfaisal offers its students opportunities to develop their full potential with outstanding facilities, inspirational academics and research-led teaching that will enable our students to leave us as highly skilled, well-developed individuals able to make the transition into the workplace easily.

Alfaisal University Vision Statement

Alfaisal University is a private non-profit institution which aspires to be a world-class research university committed to the creation, dissemination, and application of knowledge in the fields of business, engineering, life sciences and medicine, and to the development of knowledge-based economies.

Alfaisal University Mission Statement

Alfaisal University is a student-centered university which creates and disseminates knowledge through world-class undergraduate and graduate education programs, research and service that benefit the Kingdom of Saudi Arabia, the region, and the world, and stimulate the development of knowledge-based economies.

Accreditation

Alfaisal University is fully accredited by Saudi Ministry of Education (MoE).

Governing

The University Council is the major internal governance body of the University. The Council acts in legislative and advisory roles regarding university policies involving faculty and students, academic programs and planning, and University concerns.

Undergraduate Majors in Alfaisal

College	Degree	Basic Major (Mandatory)	Second Major (optional)	Minor/Track (optional)
College of Business	Bachelor of Business Administration	Project Management	Project Management	Project Management
College of Business	Bachelor of Business Administration	Finance	Finance	Finance

					College of Business	Master of Business Administration	Human Capital Management (MBA)	double major **OR** a basic major with a minor	Human Capital Management (MBA)	#N/A
College of Business	Bachelor of Business Administration	General Business	General Business	General Business	College of Business	Master of Business Administration	Digital Marketing (MBA)	A business student can choose a basic major only **OR** double major **OR** a basic major with a minor	Digital Marketing (MBA)	#N/A
College of Business	Bachelor of Business Administration	Marketing	Marketing	Marketing	College of Business	Master of Business Administration	Accounting & Taxation (MBA)	A business student can choose a basic major only **OR** double major **OR** a basic major with a minor	Accounting & Taxation (MBA)	#N/A
					College of Business	Master of Business Administration	Healthcare Management (MBA)		Healthcare Management (MBA)	#N/A
College of Business	Bachelor of Business Administration	Entrepreneurship and Family Business	Entrepreneurship and Family Business	Entrepreneurship and Family Business	College of Business	Executive MBA in Health Care Leadership	#N/A	A business student can choose a basic major only **OR** double major **OR** a basic major with a minor	#N/A	#N/A
					College of Business	High Diploma in Business Administration	#N/A		#N/A	#N/A
College of Business	Bachelor of Business Administration	Accounting	Accounting	Accounting	#N/A	#N/A		A business student can choose a basic major only **OR** double major **OR** a basic major with a minor		Digital Design and Manufacturing
					College of Engineering	Bachelor of Industrial Engineering	Industrial Engineering		#N/A	
College of Business	Bachelor of Business Administration	Human Resource Management	Human Resource Management	Human Resource Management	#N/A	#N/A		A business student can choose a basic major only **OR** double major **OR** a basic major with a minor		
					College of Engineering	Bachelor of Aerospace Engineering	Aerospace Engineering		#N/A	#N/A
College of Business	Master of Business Administration	General (MBA)	General (MBA)	#N/A	College of Engineering	Bachelor of Electrical Engineering	Electrical Engineering	An MBA student can choose a basic major only **OR** double major	#N/A	Renewable Energy
College of Business	Master of Business Administration	Finance (MBA)	Finance (MBA)	#N/A	#N/A	#N/A		An MBA student can choose a basic major only **OR** double major		
					College of Engineering	Bachelor of Mechanical Engineering	Mechanical Engineering		#N/A	Digital Design and Manufacturing

					College of Medicine	Master of Science in Biomedical Sciences	Analytical Biochemistry (MBS)	basic major only **OR** a basic major with a minor/ track **OR** a basic major with two minor/track	#N/A	#N/A	
					College of Medicine	Master of Science in Biomedical Sciences	Transfusion Medicine and Stem Cell (TMS)		#N/A	#N/A	
College of Engineering	Bachelor of Architectural Engineering	Architectural Engineering	#N/A	Construction Management	College of Medicine	Master of Science in Biomedical Sciences	Biotechnology (MBS)	An engineering student can choose a basic major only **OR** a basic major with a minor/ track **OR** a basic major with two minor/track	#N/A	#N/A	
					College of Medicine	Master of Science in Biomedical Sciences	Hemostasis and Thrombosis (MBS)		#N/A	#N/A	
					College of Medicine	Master of Science in Biomedical Sciences	Laboratory Quality Management (MBS-LQM)		#N/A	#N/A	
College of Engineering	Bachelor of Software Engineering	Software Engineering	#N/A	AI and Big Data, Cybersecurity	College of Medicine	Master of Science in Biomedical Sciences	Clinical Anatomy (MBS)	An engineering student can choose a basic major only **OR** a basic major with a minor/ track **OR** a basic major with two minor/track	#N/A	#N/A	
					College of Medicine	Master of Genetic Counselling	Genetic Counselling (MGC)		#N/A	#N/A	
					College of Medicine	Master of Public Health	Biostatistics and Epidemiology (MPH)		#N/A	#N/A	
					College of Medicine	Master of Public Health	Public Health (MPH)		#N/A	#N/A	
College of Engineering	Master of Engineering and Systems Management	Engineering and Systems Management (MEM)	#N/A	#N/A	College of Medicine	Master of Public Health	Health Policy & Management (MPH)	#N/A	#N/A	#N/A	#N/A
College of Engineering	High Diploma in Engineering and Systems Management	#N/A	#N/A	#N/A	College of Medicine	Master of Public Health	Mass Gathering Health (Hajj & Umrah) (MPH)	#N/A	#N/A	#N/A	#N/A
					College of Medicine	Master of Clinical Speech Language Pathology	Clinical Speech Language Pathology (MSP)		#N/A	#N/A	
College of Medicine	Bachelor of Medicine, Bachelor of Surgery	Medicine and Surgery (MBBS)	#N/A	#N/A	#N/A	#N/A	#N/A				
College of Medicine	Master of Science in Biomedical Sciences	Molecular and Cell Biology (MBS)	#N/A	#N/A	College of Medicine	Masters of Science in Applied Health Research	Applied Health Research (MHR)		#N/A	#N/A	
					#N/A	#N/A	#N/A				
College of Medicine	Master of Science in Biomedical Sciences	Infection Control (MBS)	#N/A	#N/A	College of Medicine	Master of Science in Health Research Management	Health Research Management (MRM)		#N/A	#N/A	
					#N/A	#N/A	#N/A				
College of Medicine	Master of Science in Biomedical Sciences	Clinical Embryology and Reproductive Biology (MBS)	#N/A	#N/A	College of Medicine	Master of Radiological and Imaging Sciences	Radiological and Imaging Sciences (MRIS)		#N/A	#N/A	
					#N/A	#N/A	#N/A				
College of Medicine	Master of Science in Biomedical Sciences	Biomedical Sciences	#N/A	#N/A	College of Medicine	Master of Radiological and Imaging Sciences	Ultrasound (MRIS)		#N/A	#N/A	
					#N/A	#N/A	#N/A				

College of Medicine	Master of Radiological and Imaging Sciences	General (MRIS)	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Medicine	Master of Clinical Psychology	Clinical Psychology (MCP)	#N/A	#N/A	College of Science and General Studies	(UPP BSc L) University Preparatory Program	#N/A	#N/A	#N/A	#N/A	#N/A
College of Medicine	Master of Cardiac Nursing	Cardiac Nursing (MCN)	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Medicine	Master of Science in Pathologist assistant	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Medicine	High Diploma in Biomedical Science	#N/A	#N/A	#N/A	College of Science and General Studies	(UPP En Bs) University Preparatory Program	#N/A	#N/A	#N/A	#N/A	#N/A
College of Medicine	High Diploma in Clinical Psychology	Child Life	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Medicine	High Diploma in Public Health	#N/A	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Science and General Studies	Bachelor of Science in Life Sciences	Life Sciences	#N/A	Biological Sciences and Nanotechnology	College of Science and General Studies	(UPP BA Bs) University Preparatory Program	Environmental Sciences and Sustainability	#N/A	A science student can choose a basic major and a minor/ track	#N/A	#N/A
College of Science and General Studies	Master of Nanoscience Nanotechnology	Nanoscience and Nanotechnology (MNT)	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Science and General Studies	High Diploma in Nanoscience Nanotechnology	#N/A	#N/A	#N/A	College of Science and General Studies	#N/A (UPP Pharm.D) University Preparatory Program	#N/A	#N/A	#N/A	#N/A	#N/A
College of Pharmacy	Doctor of Pharmacy-Pharm.D	Pharm.D	#N/A	#N/A		#N/A	#N/A	#N/A			
College of Law and International Relations	Bachelor of Law and International Relations	Law and International Relations	#N/A	Diplomacy and International Relations	College of Science and General Studies	International Law (UPP BA LLB) University Preparatory Program	Government and Public Policy #N/A		A law student can choose a basic major and a minor/ track	#N/A	#N/A
College of Science and General Studies	(UPP MBBS) University Preparatory Program	#N/A	#N/A	#N/A		#N/A	#N/A		A UPP student must complete the program successfully and meet college requirements. Not part of college degree		

Visit and Contact Information

The Office of Admissions encourages students and families to visit campus. Campus Information Sessions, Open Houses and appointments with an Admission Counsellor are available.

For more information or to make a visit reservation, visit the Office of Admissions website or contact the Admissions Office. Prospective students may contact the Office of Admissions through a variety of sources.

Office of Admissions
Alfaisal University
P.O. Box 50927
Riyadh 11533
Kingdom of Saudi Arabia
Toll Free: 920000570

Student Rights and Responsibilities

1.2.1 Student Rights

Students at the University have the same rights and protections that are included in the constitution of the Kingdom of Saudi Arabia as citizens or non-citizens. In addition, students must adhere to the rules and regulations issued by the Ministry of Education (MoE):

1. Students have the right to be treated fairly and with dignity regardless of age, color, creed, disability, marital status, national origin or ancestry, race, religion, or sex.
2. The teacher-student relationship within the classroom is confidential, and disclosure of a student's personal or political beliefs expressed in connection with coursework will not be made public without explicit permission of the student. It is understood that the teacher may undertake the usual evaluation of knowledge and academic performance.
3. Students' records may be released to or examined by persons outside the University only upon request of the student or through compliance with applicable laws.
4. Students are free, individually or in association with other individuals, to engage in all campus activities as long as they do not in any way purport to represent the University.
5. Students are free to use campus facilities for meetings of student-chartered campus organizations, subject to regulations as to time and manner governing the facility.
6. Students may invite and hear speakers of their choice on subjects of their choice and approval will not be withheld by university officers for the purpose of censorship.
7. Students will have their views and welfare considered in the formation of the University policy and will be consulted by or may be represented on university committees that affect students as members of the University community on a case-by-case basis.
8. Individual's religious and spiritual beliefs are respected.
9. Students have freedom of research, of legitimate classroom discussion, and of the advocacy of opinions alternative to those presented in the classroom.
10. Students will be evaluated on knowledge and academic performance for purposes of granting academic credit and not on the basis of personal or political beliefs.
11. Students will be free from censorship in the publication and dissemination of their views as long as these are not represented as the views of Alfaisal University.
12. Students' publications are free from any official action controlling editorial policy. Publications shall not bear the name of the University or purport to issue from it without University approval.
13. Students are free, in abidance with University's regulations to form/join/participate in any group of intellectual, organizational, religious, social, economic, political, or cultural purposes.

1.2.2 Student Responsibilities

1. Remaining a member of Alfaisal community requires students to comply continuously with rules and regulations governing student's academic progress, social interactions, and personal behavior.
2. Students must avoid and not get involved in any form of academic misconduct such as: cheating, plagiarism and other misappropriation of the work of another, falsification of data, improperly obtaining or representing laboratory or field data, dishonesty in publication, publication or attempted publication of collaborative work

without the permission of the other participants, abuse of confidentiality, misuse of computer facilities, misuse of human subjects, illegally or carelessly obtaining or using dangerous substances or providing such substances to others, falsification or unauthorized modification of an academic record, obstruction of the academic activities of another, aiding or abetting academic misconduct, attempted academic misconduct.

3. Students must be on a level of courtesy, civility and consideration that prevents them from any form of personal misconduct. They are expected to adhere to ethical standards in a variety of workplaces (e.g., classrooms, laboratories) within the explicit standards set by the University. Being physically or verbally threatening, disruptive, abusive, or hostile can make the workplace so unsafe or unpleasant that others cannot do their work.
4. Student must always present his/her Alfaisal Id at exams time.
5. Students must not misuse or damage any of the University facilities and they should behave properly in the public areas inside campus.
6. Students will be exempt from disciplinary action or dismissal from the University except for academic failure, failure to pay a university debt or a violation of a student or University rule or regulation. Rules and regulations shall be fully and clearly promulgated in advance of the supposed violation. The University has no legal authority over a student when outside University property, except where the student is on the property of a university-affiliated institution, where the student is engaged in a project, seminar, or class for academic credit or as otherwise provided in the University rules, regulations, and procedure or on property that falls within the jurisdiction of university authority.
7. By the end of their final year of academic study, students should meet professional and legal practice requirements. They must value intellectual engagement, research-based practices, and life-long learning.
8. Regular and punctual attendance is required of all students for all classes, labs, seminars and/or clinical experiences. A student who is constantly late and/or absent from classes, seminars and/or labs may be unable to meet the course requirements and may not be able to receive a credit for the course.
9. The use of cell phones or other electronic messaging devices during class or lab is not permitted. Text messaging or e-mailing in class is prohibited.
10. It is recognized that every member of the community has the responsibility to conduct him or herself in a manner that does not violate the rights and freedoms of others.
11. A student or group of students cannot organize events inside Alfaisal University campus without written approval from Deanship of Student Affairs, Admissions and registration (SA). In case there is an event/activity to be conducted inside University's campus, SA personal must be notified in writing at least one week ahead of event/activity date and specified form(s) must be filled out and approved before proceeding in event/activity.
12. Also, a student or group of students cannot initiate and hold an event/activity outside campus by the name of Alfaisal University without having written approval from SA.

1.2.2.1 Dress Code Policy

1. **Introduction**

Alfaisal University is committed to creating learning, research and working environments that are inclusive and support the needs of all members of the university community.

This University welcomes the diversity of appearance which students and visitors bring to the campus. However, there may be occasions where health and safety or professional considerations restrict certain modes of dress and the wearing of jewelry items, footwear such as, for example, when working in labs.

The Dress Code policy aims to ensure health and safety standards are met, best practice is followed, and obligations required by wearing decent respectful clothes that goes with Saudi traditions, customs, and social norms are applied and implemented.

2. **Key Principles of the Dress Code Policy**

The University does not prescribe a formal dress code for students, except for students who are required to wear protective clothing, for example in laboratories

and workshops. The University supports students to wear appropriate clothing. The University expects students to practice appropriate standards of personal hygiene. Students on placement visits may be required to follow dress codes as applied by the external agency, such as clinical placements in the hospitals. In the case of the latter, any professional requirements of external organizations must be followed. The University does not permit the wearing of clothes or display of badges, screensavers etc. which show obscene material Any breach of this policy may be subject to disciplinary action.

3. **Identity and Visual Checks**

All staff and students are expected to always carry University identity cards while on campus. The University is aware that some potential applicants and visitors may wish to wear niqab– however the University reserves the right to ensure that appropriate photo identity is received, and which can be verified. A private room will be made available, where possible in order to undertake such visual checks (through the temporary removal of the niqab) by a local female member of staff. Any person asked to remove their face covering for identification purpose may be denied entry if they refuse to do so. Similar visual checks will take place on key occasions such as prior to student examinations. It is the student's responsibility to provide appropriate photo identification (e.g., University identity card or passport if the identity card is not applicable).

4. **Health and Safety**

Health and safety requirements may mean that, for certain tasks, specific items of clothing such as overalls, protective clothing, uniforms, footwear etc. need to be worn or other items removed. The University is responsible for the health, safety and welfare of students and others who may be affected by its work activities. Where this is compromised by the wearing of certain dress (including footwear and jewelry items) or where this is likely to enhance the risk to other persons, a risk assessment for the activity will be carried out between the wearer and the supervisor/faculty. The responsibility for the final decision will rest with the Dean of Student Affairs, Admissions, and Registrations.

5. **Medical Emergency**

It should be noted that whenever possible medical intervention will take account of religion and cultural sensitivities. However, removal of any religious or cultural symbol, or face covering may be required. It is preferable that a female member of staff is present when a female requires medical assistance and similarly for men. All first aid staff will be made aware of this preference.

6. **Placements and External Agencies**

Students should dress according to both the University's and the appropriate local guidelines and regulations. However, it should be noted that the University is not responsible for setting the dress code and/or wearing of symbols required by external institutions. The external dress code can include removing jewelry/symbols and making an individual's face visible to ensure effective communication.

7. **Policy Implementation**

All students are expected to comply with this Policy. Colleges or other units hosting industry or other high-profile events at the University are responsible for advising about this Policy and compliance. All faculty and staff are responsible for implementing this policy within their area of responsibility. The University reserves the right to take appropriate action where any breach is identified.

8. **Complaints & Advise**

If students believe they have been unfairly treated regarding the implementation of the Dress Code, they are asked to bring this to the attention of the contact the Deanship of Student Affairs, Admissions, and Registrations. For further advice and support please contact the Deanship of Student Affairs, Admissions, and Registrations.

Admissions

Admission Policies

Alfaisal University maintains a small university environment and values personal attention for every student, and our commitment to individuals ensures that admissions representatives will review every application carefully.

Alfaisal University seeks a highly motivated, academically well-prepared, and diverse student body. Admission to the University is competitive. Applying early is encouraged as the University has the right to limit enrolment due to space availability in major programs and overall student capacity. Please refer to the Admissions website for more information and detailed dates and deadlines. All prospective new students should apply for admission to Alfaisal University through the University Online System.

Admission General Information

Students who would like to join one of Alfaisal University academic programs can apply only through the University Online Application System.

A student will find the suitable type of application according to his/her previous achievement (freshmen or transfer) and will see the list of credentials which he/she must provide and upload. After preparing all required documents, an applicant will start the process of filling out the online application form and completing all required elements.

In general, there are two types of admission in Alfaisal University: Direct Admission and Indirect Admission (University Preparatory Program - UPP).

Direct Admission

Students excellent in educational attainment and English proficiency can join the university directly and skip the UPP in accordance with the following criteria:

Direct Admission Criteria for Saudi Curriculum

Admission Criteria 2023-2024

Direct Admission Criteria for Saudi Curriculum						
College Sought	**Business**	**Law**	**Engineering**	**Science**	**Pharm.D**	**Medicine**
Certificate Type	Entry Requirements Score					
High School	**90/100**					**98%**
Qudurat	**75/100**					**85**
Tahseely	**N/A**		**75/100**			**85**
Acceptable English Language Proficiency Tests						
TOEFL IBT	**61**					**79**
IELTS	**6**					**6.5**
OOPT (English Placement Test)*	**B2**					**C1**
Interview	**N/A**					**Required**
The University offers OOPT for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.						

Direct Admission Criteria for American Curriculum

Admission Criteria 2023-2024

Direct Admission Criteria for American Curriculum						
College Sought		**Business**	**Law**	**Engineering**	**Science**	**Pharm.D**	**Medicine**
Certificate Type		Entry Requirements Score					
High School		**90%**					**98%**
SAT		**1000/1600**					**1200/1600**
SAT II Alternatives	Tahsily						**85**
(Since SAT II is no longer offered, you must have one of these tests if applying for College of Medicine)	Two Advanced Placement (AP) Tests (Biology and Chemistry)						**4**
	Two Subjects in AS and A2 from the British System (Biology and Chemistry)						**A,A**
	ACT Subjects (Biology and Chemistry)	**N/A**					**28/36**
Or							
ACT		**22/36**					**28/36**
ACT Subjects (Biology and Chemistry)		**N/A**					**28/36**

Acceptable English Language Proficiency Tests			
TOEFL IBT	61		79
IELTS	6		6.5
OOPT (English Placement Test)*	B2		C1
Interview	N/A		Required
The University offers OOPT for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.			

Direct Admission Criteria for British Curriculum

Admission Criteria 2023-2024

Direct Admission Criteria for British Curriculum						
College Sought	Business	Law	Engineering	Science	Pharm.D	Medicine
Certificate Type	Entry Requirements Score					
High School	Applicant should obtain 12th grade transcript and diploma					
Two subjects in A2 level related to selected major (For Medicine, Pharmacy, and Science: Biology and Chemistry)	N/A					A,A
Two subjects in AS level related to selected major (For Medicine, Pharmacy, and Science: Biology and Chemistry) (For Engineering: Math and Physics)	Average of two subjects 80					A,A
Four subjects in GCSE level related to selected major	Average of 4 subjects 80					A,A,B,B
Acceptable English Language Proficiency Tests						
TOEFL IBT	61					79
IELTS	6					6.5
OOPT (English Placement Test)*	B2					C1
Interview	N/A					Required
The University offers OOPT for those who have not taken the TOEFL or IELTS.Once you apply, your test date & time will be scheduled.						

Direct Admission Criteria for International Baccalaureate Curriculum

Admission Criteria 2023-2024

Direct Admission Criteria for for International Baccalaureate Curriculum						
College Sought	Business	Law	Engineering	Science	Pharm.D	Medicine
Certificate Type	Entry Requirements Score					
High School	Applicant should obtain 12th grade transcript and diploma					
IB High Level (HL) in Three subjects. Two of them must be related to selected major (For Medicine, Pharmacy, and Science: Biology and Chemistry) (For Engineering: Math and Physics)	4,4,4					5,6,6
IB Diploma Total	26					30
Acceptable English Language Proficiency Tests						
TOEFL IBT	61					79
IELTS	6					6.5
OOPT (English Placement Test)*	B2					C1

Interview	**N/A**		**Required**
The University offers OOPT for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.			

Direct Admissions for Other International Curriculums

Students from other international systems curriculum can take any of the above listed system entrance exams and submit documents that prove that they finished their high schools (12 years of study) in their home countries and have their high school documents' evaluation completed in the Saudi Ministry of Education. Students will be evaluated based on their high school performance and interviews by perspective colleges. Students must also meet any of the English requirements as specified above.

***The University offers an English placement test for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.**

Entry Requirements for University Preparatory Program (UPP)

Applicants who do not meet direct admissions requirements can join UPP at Alfaisal University. This program will enable students to improve English language proficiency and academic skills. Those who successfully finish UPP will join Alfaisal University. To get accepted in UPP, you must meet the following criteria:

UPP Admission Criteria for Saudi Curriculum

Admission Criteria 2023-2024

UPP Admission Criteria for Saudi Curriculum						
College Sought	**Business**	**Law**	**Engineering**	**Science**	**Pharm.D**	**Medicine**
Certificate Type	Entry Requirements Score					
High School	**85/100**					**90/100**
Qudurat	**70/100**				**75/100**	**80/100**
Tahseely	**--**		**70/100**			
Acceptable English Language Proficiency Tests						
TOEFL IBT	**45**					
IELTS	**5**					
OOPT (English Placement Test)*	**B1**					
The University offers OOPT for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.						

UPP Admission Criteria for American Curriculum

Admission Criteria 2023-2024

UPP Admission Criteria for American Curriculum							
College Sought		**Business**	**Law**	**Engineering**	**Science**	**Pharm.D**	**Medicine**
Certificate Type		Entry Requirements Score					
High School		**85/100**				**85/100**	**90/100**
SAT		**800/1600**				**900/ 1600**	**1000/ 1600**
SAT II Alternatives	Tahsily	**N/A**				**75/100**	**80/100**

	Two Advanced Placement (AP) Tests (Biology and Chemistry)		**2**	**3**
(Since SAT II is no				
longer offered, you must have one of these	Two Subjects in AS and A2 from the British System (Biology and Chemistry)	**N/A**	**AS: B,B**	**A,B**
tests if applying for				
College of Medicine)				
	ACT Subjects (Biology and Chemistry)		**16/36**	**22/36**
Or				
ACT		**18/36**	**20/36**	**22/36**
ACT Subjects (Biology and Chemistry)		**N/A**	**16/36**	**22/36**
Acceptable English Language Proficiency Tests				
TOEFL IBT		**45**		
IELTS		**5.0**		
OOPT (English Placement Test)*		**B1**		
The University offers OOPT for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.				

UPP Admission Criteria for British Curriculum

Admission Criteria 2023-2024

UPP Admission Criteria for British Curriculum						
College Sought	**Business**	**Law**	**Engineering**	**Science**	**Pharm.D**	**Medicine**
Certificate Type	Entry Requirements Score					
High School	**Applicant should obtain 12th grade transcript and diploma**					
Two subjects in A2 level related to selected major (For Medicine, Pharmacy, and Science: Biology and Chemistry)	**N/A**					**B,B**
Two subjects in AS level related to selected major (For Medicine, Pharmacy, and Science: Biology and Chemistry)	**Average of two subjects 75**				**Average 78**	**A,B**
Four subjects in GCSE level related to selected major	**Average of 4 subjects 75**				**Average 78**	**B,B,B,B**
Acceptable English Language Proficiency Tests						
TOEFL IBT	**45**					
IELTS	**5.0**					
OOPT (English Placement Test)*	**B1**					
The University offers OOPT for those who have not taken the TOEFL or IELTS.Once you apply, your test date & time will be scheduled.						

UPP Admission Criteria for International Baccalaureate Curriculum

Admission Criteria 2023-2024

UPP Admission Criteria for for International Baccalaureate Curriculum						
College Sought	**Business**	**Law**	**Engineering**	**Science**	**Pharm.D**	**Medicine**
Certificate Type	Entry Requirements Score					

High School	**Applicant should obtain 12th grade transcript and diploma**		
IB High Level (HL) in Three subjects. Two of them must be related to selected major **(For Medicine, Pharmacy, and Science: Biology and Chemistry)** **(For Engineering: Math and Physics)**	**3,3,4**	**3,4,4**	**4,4,5**
IB Diploma Total	**24**		**26**
Acceptable English Language Proficiency Tests			
TOEFL IBT	**45**		
IELTS	**5.0**		
OOPT (English Placement Test)*	**B1**		
The University offers OOPT for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.			

UPP Admission Criteria for Other Curriculum

Students from other international systems curriculum can take any of the above listed system entrance exams and submit documents that prove that they finished their high schools (12 years of study) in their home countries and have their high school documents' evaluation completed in the Saudi Ministry of Education. Students will be evaluated based on their high school performance and interviews by perspective colleges. Students must also meet any of the English requirements as specified above.

The University offers an English placement test for those who have not taken the TOEFL or IELTS. Once you apply, your test date & time will be scheduled.

Transfer Students

Alfaisal University welcomes students who want to transfer from other colleges and universities. Transfer students who would like to join Alfaisal University should provide the following:

- Studied at recognized university or college for two semester at least.
- Meet the College admissions criteria
- Submit original transcripts.
- Minimum 2.0 /4 or 3.0/5 GPA for all colleges, for College of Medicine 4.5/5 or 3.5/4 and for College of Clinical Pharmacy 3.5/5 or 2.5/4 .
- Credits Transfers must be approved initially by the prospective college in Alfaisal University, to which the student is joining and the total number of Credit Hours must not exceed 48 credit hours.
- A student can view credit transfer for the courses which are on Alfaisal University System.

Preparatory Year and Diploma courses will not be transferred to Alfaisal University courses.

Visiting/Non-Degree Students

Non-Degree Students Criteria

An undergraduate non-degree student takes credit bearing courses but does not pursue a baccalaureate degree. Non-degree students register for courses on a space available basis. Alfaisal University degree candidates have first priority for registration. Non-degree students must demonstrate course pre-requisites and may need approval

from the respective department of the College. As a non-degree student, you may take up to 15 credits in this status. Non-degree students are not eligible for financial aid.

Alfaisal University welcomes Non- degree students for a maximum of two consecutive semesters and must fulfil the following requirements:

1. Proof of English Proficiency Test.
2. Official High school transcript and Quadrat, Tahseely, or SAT.
3. Non-degree students cannot register for a course without fulfilling its pre-requisites.
4. Students who have college credits or have completed a college degree must submit an official college transcript.
5. A Non-Degree student is allowed to register for a maximum of 15 CHs in Fall or Spring semester, and 6 CHs in Summer semester, on the condition that the student does not exceed more than 15 CHs in all semesters.
6. Advanced payment of full tuition fees.
7. For Non –Saudi students, a valid Iqama and Proof of health insurance Application Fee.

A non-refundable 600 SAR application fee is required for all applicants. The application fee will be collected at the time of application.

Visiting Students Admission Criteria

Alfaisal University welcomes visiting students for a maximum of two consecutive semesters. To apply as a visiting student you must fulfil the following requirements:

1. Letter of permission from your current university that includes the courses you plan to take at Alfaisal University.
2. Minimum of 30 credit hours attended in a recognized college or University.
3. Minimum GPA of 2.5 out of 4 or 3 out of 5.
4. Proof of English Proficiency Test.
5. Official Transcripts.
6. Advanced payment of full tuition fees.
7. For Non –Saudi students, a valid Iqama and health insurance.

A non-refundable 600 SAR application fee is required for all applicants. The application fee will be collected at the time of application.

For Alfaisal University Students Taking Courses Outside the University

1. The student cannot take any course that is currently offered at Alfaisal University.
2. The student cannot take any other courses outside the University if he/she is taking the maximum course.
3. The student cannot take/repeat a course that is already taken in Alfaisal in any other university.
4. The student should provide detailed descriptions and/or syllabus for the courses he/she intends to take in another university.

5. The request must be approved by the College Dean and Deanship of Student Affairs, Admissions and Registration.
6. Student must fill the Courses Pre-Approval form for Study Abroad.

Visiting Students Criteria

Alfaisal University welcomes visiting students for a maximum of two consecutive semesters. To apply as a visiting student, you must fulfil the following requirements:

1. Letter of permission from your current university that includes the courses you plan to take at Alfaisal University.
2. Minimum of 30 credit hours attended in a recognized college or University.
3. Minimum GPA of 2.5 out of 4 or 3 out of 5.
4. Proof of English Proficiency Test.
5. Official Transcripts.
6. Advanced payment of full tuition fees.
7. For Non–Saudi students, a valid Iqama and health insurance.

Non-Degree Students Criteria

An undergraduate non-degree student takes credit bearing courses but does not pursue a baccalaureate degree. Non-degree students register for courses on a space available basis. Alfaisal University degree candidates have priority for registration.

Non-degree students must demonstrate course pre-requisites and may need approval from the respective department of the College. As a non-degree student, you may take up to 24 credits in this status. Non-degree students are not eligible for financial aid.

Alfaisal University welcomes non-degree students for a maximum of two consecutive semesters and must fulfil the following requirements:

1. Proof of English Proficiency Test.
2. Official High school transcript and Quadrat, Tahseely, or SAT.
3. Non-degree students cannot register for a course without fulfilling its pre-requisites.
4. Students who have college credits or have completed a college degree must submit an official college transcript.
5. A Non-Degree student is allowed to register for a maximum of 12 CHs in Fall or Spring semester, and 9 CHs in Summer semester, on the condition that the student does not exceed more than 24 CHs in both semesters.
6. Advanced payment of full tuition fees.
7. For Non –Saudi students, a valid Iqama and proof of health insurance.

Application Fee

A 600 SR non-refundable application fee is required for all applicants. The application fee will be collected at the time of application.

Registration

Registration General Information

Office of the Registrar manages the registration of students and provides the following services:

- Verifying and issuing of official transcripts.
- Certifying student enrolments.
- Confirming awarding of degrees and managing the registration of current students.
- Maintaining and providing the timely and accurate official records of the academic progress and accomplishments of the students and helping them in graduation process.

Registration Policies

- Student is responsible for registering the correct courses on time following the study plan, receiving academic advice from the academic advisor is recommended.
- Student will not be allowed to attend classes without being officially registered for them; student cannot receive credit for courses in which he/she is not registered for.
- Students are not allowed to register or add courses retroactively.
- The University reserves the right to cancel class/section, change instructor/class time and classroom faculty assignments, and does not guarantee seats in any class.

Registration Period

Actual registration starts at the beginning of each academic or summer session, as specified in the academic calendar. Each student must complete his/her own registration by him/herself through the portal (Netclassroom), registration via mail or other means is not allowed.

Add Course

- Student are expected to register courses during registration period for each semester.
- Student may add a course if it's not full and does not conflict with another course in his/her schedule as well as examination schedule and if he/she fulfilled its pre-requisite/s.
- Student should check the academic calendar periodically for add/drop deadlines.
- Student can personally add classes online through NetClassroom.

Drop Course

- A course may be dropped during the first 4 weeks of the semester without affecting the student's academic record.
- If the course to be dropped is a co-requisite, the student either must drop both co-requisite courses or complete both courses concurrently.
- Student can personally drop classes online through NetClassroom.

Withdraw from a Class or Program

- Student can withdraw from a class or a semester without being considered as having failed in the classes.
- Withdraw period starts by the end of 4th week until the end of 9th week.
- Withdrawn courses will appear in the transcript (W) but will not affect the GPA
- Withdrawn courses will be counted financially.
- Student can withdraw from university at any time and if the request initiated during/after the withdraw period, courses will be counted financially.

Late Registration

- Late registration opens available only for a week after the end of adding period.
- Student must pay late registration penalty of 500 SAR.
- Registration committee and course instructor must approve the late registration.

Changing Selections

- Students should choose a section that will not create a time conflict with his/her current schedule.

- Change of section only allowed during the add period following the academic calendar.
- Student can change section through NetClassroom.

Course Substitution

A student qualifies for graduation when he/she has fulfilled all the requirements for the degree program in which he/she enrolled when admitted to the University. If he/she is unable to complete the requirements of any program (due to termination of a course, the changing of its content, or when accrediting new programs that comprise courses the student has not studied), he/she can substitute or compensate for these courses with other equivalent courses, in terms of level, content, and credit hours. The Admission and Registration Deanship must be informed of the substitution or compensation after the student has obtained the approval of the Admission and Registration Deanship for graduation requirements.

Repeating a Course

Any undergraduate student may retake a course for which he/she received a grade below B. (A student may exercise this option for no more than four courses, totaling no more than 18CH for College of Medicine and Pharmacy and 12CH for other undergraduate colleges. student may use this option only once for a given course within two years. For the course retaken, the lower grade will show as “R” in the transcript. Only the higher grade shall be counted in the determination of the student’s grade-point average (GPA). The course retake policy will not be applied automatically to a student’s GPA. After completing the second attempt of a course, a student must submit a request to the University Registrar’s Office. Retake course policy will apply for courses taken at Alfaisal University only. (Retake courses policy will not apply for courses taken outside Alfaisal University). Student to benefit from the retake policy his/her new grade must not be F or DN.

Academic Advisor

The University assigns an academic advisor to each student for assistance in matters that relate to academic progress, such as:

1. Selecting the academic major that best suits the student's preferences and capabilities.
2. Understanding and interpreting the academic regulations.
3. Informing the student of the sequence of the required and elective courses and suggesting suitable elective courses.
4. Following up on the academic progress of the student.
5. Assisting in early registration and the various stages of registration.
6. Assisting in course substitution if necessary.
7. The academic advisor is chosen from the faculty members of the department or the college. The academic advisor for the UPP students is the director of the UPP or someone appointed by him/her or acting on his/her behalf.

Prerequisites for Courses

Policy

- Registration in a course may be cancelled if the student does not satisfy all published pre-requisites.
- Students should check course pre-requisites in their program guides (study plan) before registering for a course.
- If there is an exceptional case in which the prerequisite might be waived, the instructor and the College Dean need to send his/her approval to the registrar.
- Student must fill prerequisite form.
- Students must check with their instructor to ensure that his/her name is on the class roster.

Transfer Credits

- Student must submit official transcript to the Deanship of Student Affairs, Admissions and Registration.
- The department head, and/or college dean determine if and how credit transfer may be used to satisfy baccalaureate requirements.
- All courses that are approved and evaluated by the concerned college will be added to the database.
- New students should fill the transfer credit form and submit it with the admission form.

- A maximum of 40% of any program total credits may be applied toward the baccalaureate to be transferred.
- Credits Transfers must be approved initially by the prospective college in Alfaisal University to which the student is joining, and the total number of Credit Hours must not exceed 48 credit hours. The process of credit transfer will begin after the acceptance to the college.
- Undergraduate course work completed at regionally accredited degree-granting institutions that is comparable in character, content, and quality to courses offered by the University and in which a minimum grade of "C "has been earned (College of Medicine is exception as it accepts minimum B, will be considered for transfer credit.)
- The student's quality point average at the University is calculated solely based on work taken at Alfaisal University.
- Transfer credits are posted on the transcript and assigned the grade "CR"
- The number of transfer credits a student receives depends primarily on the educational quality of the work and the comparability of the courses taken in content, scope, and level to those offered by the University.
- Transfer course work is evaluated on an individual basis and assigned an equivalent University course number whenever possible. If no equivalent course can be designated, and the work is deemed to be comparable to university-level work, then general elective credits in the discipline may be awarded.
- If a student fails to indicate on the admission application that s/he has completed course work at another college or university and later requests to have that work evaluated for transfer, credit for such work will be denied. Students can also be subject to dismissal for failure to disclose postsecondary institution enrolment.
- The Registrar Office requests that departments review and/or re-evaluate courses offered by public and private institutions so that Transfer Courses Data base may be kept up to date with new offerings, content change, etc. Colleges might also request additional review of Transfer Courses Database in accordance with college regulations and standards. In this regard, the Registrar Office makes students aware of regulations through the university website.

Non-Transferable Credit

- Credit earned in colleges and universities that are not regionally accredited.
- Courses on a transcript where no credit or grade is given.
- Career, vocational, or technical courses.
- Distance learning courses.
- Pre-collegiate/remedial courses, e.g., reading improvement, English/Math skills courses, developmental courses, or courses classified by as below freshman level or not applicable to the degree, etc.
- Personal development/self-improvement courses, e.g., career counseling, interpersonal relationships, college success courses, etc.
- Courses not offered at the undergraduate level by the University.
- Credit given by another college for life/work experience.
- Co-op, internship, and practicum credit.
- Courses graded 'P.'

Taking Course in Another University

- Student must fill the transfer form and submit it with the syllabus to the college, he/she must be sure the course planned to take at the other university is on Alfaisal syllabus and approved by the college. Student must take a course approval letter from registrar office containing the courses that he/she will take.

Independent and Directed Study (IDS)

Independent and Directed Studies allow students to initiate, develop and complete courses under the supervision of a faculty member.

- **Independent Study** is intended to be an extension of a traditional course. It provides the student with an opportunity to pursue/research a subject in more depth and in a more independent manner than would be possible in a traditional course. Independent study requires an outline form, developed through consultation between the student and the instructor/sponsor, which serves as the official course description.

- **Directed Study** is designed to be a substitute for a traditional course that is not offered in the semester for which the student wishes to enroll. The material covered in such courses is essentially the same as that covered in the traditional course.

The purpose of the IDS program is to allow students to:

- Pursue learning outcomes that extend beyond those normally taught in the classroom.
- Pursue studies independent of the classroom schedule.
- Have prior learning recognized for a course they may not have completed.
- A primary goal is to encourage independent study under the supervision of faculty members. In addition to research projects, internships and practicums, the different programs use individual study, case studies and directed readings as the basis for various independent study offerings.

The student and the supervising faculty member develop the content and format of the Directed Study course. The program of reading, assignments and method of evaluation will be dependent on the subject under study. Supervision is also on an individual basis, and while there may not be regularly scheduled class sessions, the student is expected to schedule and maintain regular meetings with the IDS faculty member.

Policy

- An IDS course must be undertaken with a view to specified learning outcomes.
- The course may be taken for variable credit and not more than twice and for no more than 6 credit hours. One, two or three credits of selected studies may be earned for each IDS course reported. IDS courses should not be taken to replace required courses.
- The following requirements govern enrolment for credit in independent study:
    - The consent of the instructor and college dean must be obtained before enrolment.
    - The content of the study should differ from the content of the regular course offerings.
    - The contact hours between student and faculty member must be sufficient to ensure consistency with credit earned in regular course offerings.
    - Students must have at least junior standing (i.e., 3rd year), including transfer students, who have earned at least a 2.75 cumulative GPA at Alfaisal University and who give sufficient evidence of initiative, originality, and intellectual maturity to warrant the expectation of distinction in the program. Students may do Independent Directed Studies in any discipline in which they obtain the required permission.

Procedure

- Students wishing to take an independent directed study must complete the Directed Studies Application Form and have it approved by the faculty member most familiar with the topic of study and obtain further approval from the dean of the college in which the student is enrolled.
- The dean of the college may form a committee to recommend the approval at the college level.
- The faculty will work with the student to select a reading list, projects, and evaluations appropriate to the topic and the credit level chosen.
- All needed materials will be presented in a syllabus attached to the application form.

Guidance on Enrolment for Summer Courses

It is recognized that for various reasons, Alfaisal University students may wish to take academic courses over the summer. In such cases, the following conditions exist:

1. If a student wishes to improve an earlier grade by summer study, registration and payment of fees must be made by the first day of the summer session. One repeat is allowed if a passing grade was obtained on the first taking of the course. Attendance at all class meetings is compulsory, as is the completion of all course work if the student is to be allowed to sit the final examination for the course.
2. If a student wishes to take a course over the summer from another university, this will be allowed only if that course is not offered during

the summer session at Alfaisal University. The dean of the college in which the course in normally offered may with appropriate justification, grant exception to the foregoing rule. In such cases, the college dean must give permission which will be based on information provided by the student. This information must demonstrate that at least 80% of the Alfaisal University course content and mode of evaluation is covered by the course at the university where summer study is proposed.

3. A student is allowed to register a maximum of 6 credit hours in Summer Semester.

Extensions

Students are expected to complete all course work by the end of a semester. When this is not possible because of illness or other circumstances, an incomplete grade may be considered. The University distinguishes between two types of extensions: personal and academic. Only in the most unusual circumstances can an extension, either personal or academic, be granted. Personal Extensions are appropriate for students coping with end-of-semester illness or other personal circumstances beyond their control.

Policy

- In certain cases, the student may not wish this documentation to be placed in his or her student file. In this case, the student should confer confidentially with the relevant faculty member, and with the agreement of the dean of the college, such material can be excluded from the student's file.
- The due date for completed work will be set at the time the extension is granted. For the fall and spring semesters it is expected that all written work and projects will be completed no later than four weeks from the last day of exams. Earlier deadlines may be set by the instructor. The Dean of the College and the student will agree on the specified deadline.
- An incomplete (I) grade will be given to the student if the instructor is unable to submit the final exam before the final grade deadline and submit a Grade Change Authorization Form to the College Dean for approval and processing to the Office of the Registrar.

Procedure

- Request forms for these extensions are available from the Office of Registrar.
- The Dean of the College will be required to receive and judge the validity of these requests.
- Documentation from a doctor, hospital or other appropriate institution is required to consider an extension. All documentation will be placed in the student's permanent academic record. This verification is required to document circumstances that have had an impact on a student's ability to finish course work or finals.
- Students must submit all requests before the last day of classes.
- Faculty will submit extension grades no later than the fifth (5th) week following the last day of exams unless special arrangements are made with the College Dean and the University Registrar.

Academic Extensions

Academic extensions are appropriate when something non-personal interferes with a student's ability to complete work.

Policy

- "Normal" computer failures are not covered by this policy; it is expected that students will back up their files.
- Only rarely will extensions be granted for academic reasons.
- The due date for completed work will be set at the time the extension is granted. The Instructor, the College Dean, and the student must agree in writing on the due date.

Enrolment in the Summer Internship Program

Depending on the major, a student may be required to spend summer training. The student should complete the summer training period prior to his/her last semester at the University. A student is qualified to enrol in this program if he/she meets the following conditions:

1. Complete the required credit hours in the degree program in which he/she is registered. The program must be completed before the end of the last semester at the University.
2. Complete all the courses required by the department. Earn a major GPA of 2.00 or above.
3. Have not been suspended from the University.
4. Studying in some colleges may be on a full academic year basis, according to the rules and procedures approved by the University Council. An academic year comprises two levels.

Academic Policies

Class Attendance Policy

Students expected to attend all classes. An excuse of absence is required for a student who does not attend in classes due to personal or family health reasons.

Policy

- Students are expected to attend all classes. They are allowed 15% absence without excuses and 25% absence with excuses.
- An absence for a non-acute medical service does not constitute an excused absence.
- Among the reasons of absences that are considered excused by the university are the following:
- Death or major illness in a student's first-degree relative family. First-degree family may include mother, father, sister, brother, grandparents, spouse, child, spouse's child, grandparents, legal guardian and should submit a death certificate.
- Illness of a dependent family member.
- Participation in legal proceedings or administrative procedures that require a student's presence.
- Injury or Illness that is too severe or contagious for the student to attend class.
- Injury or illness of three or more days. For injury or illness that requires a student to be absent from classes for three or more business days, the student should obtain a medical confirmation note from his or her medical provider. The medical confirmation note must contain the date and time of the illness and medical professional's confirmation of needed absence and it must be from a certified hospital.
- Mandatory admission interviews for professional or graduate school which cannot be rescheduled.
- The College Council or whatever body it delegates its authority to, may exempt a denied student from the provisions of attendance and allow him/her to take the examination, provided that the student presents an acceptable excuse to the council. The University Council determines the percentage of attendance, which must not be less than 25% of the lectures and laboratory sessions specified for the course
- If needed, the student must provide additional documentation substantiating the reason for the absence with the filled form of absence that is satisfactory to the instructor, within one week of the last date of the absence.
- Each faculty member will refer to the attendance policy, which will be stated in the course syllabus and shared at the first-class meeting. Certain courses may have more stringent attendance policies. Students should be aware of differences and plan accordingly.
- When the number of absences exceeds 15 % with no excuse of the scheduled classes, the faculty may issue a failing grade (DN), the student can use the retake available hours to replace the DN with R.

Hold Status

Students' records will be placed on "Hold Status" if they incur any type of outstanding obligation (either financial or otherwise) to the university.

Some typical reasons for holds are:

1. Outstanding fees or other unpaid university fees
2. Outstanding library books and/or fines
3. Counselling.
4. Expired Iqama.
5. Outstanding transcripts or documents.
6. Student's record pending disciplinary action.
    - No administrative or academic services will be provided to students on Hold Status until the specific obligations have been met.
    - Students who have not cleared their "Hold Status" from previous registrations will not be permitted to register again until the hold has been cleared.

Declaration of Concentration, Track, Minor and Major

A student may declare from one major to another within a college, in accordance with the policy below:

1. A student must meet the college requirements for the requested concentration, track, minor and major.
2. A student first must apply to his/her collage of choice then he/she can change.
3. A student changing a major will start the new major with the beginning of next semester.
4. The changing must be approved by the college dean.
5. All courses that have been studied by a student who has transferred from one concentration, track, minor and major.
6. To another are recorded in his/her academic record, including the grades and CGPAs obtained throughout his/her study at the University.
7. Student must submit the Declaration of Concentration, Track, Minor and Major e-form.

The form should be submitted during the 12th week of fall and spring semester.

Registration Time Guidelines

	Semester		
	Fall	**Spring**	**Summer**
Adding	The First **2 weeks** of the semester	The First **2 weeks** of the semester	The First **2 weeks** of the semester
Dropping	The First **4 weeks** of the semester	The First **4 weeks** of the semester	
Withdrawal	The First **5 weeks** after the drop period	The First **5 weeks** after the drop period	

Examination, Grades, and Grades Appeal

Students are expected to meet examination schedules as determined by registrar office. Retaking final exams is not permitted. For students who missed a final exam, however, the University recognizes that unforeseen circumstances do occur and have instituted the following policies for final exam make-ups, as well as for examinations scheduled during the semester.

Make-up Exams

Make-up Final Examinations

Alfaisal University policies do not allow students who miss their final exam to request an alternate arrangement to make-up the exam except for one of the following reasons only – medical illness, or compassionate grounds. Alternate arrangements must be made prior to the scheduled examination date and time. Unless it is an extended illness, the missed final exam must be completed as soon as possible after the scheduled exam date. The following guidelines are to be followed:

1. The student makes the request in writing and in a timely manner before the scheduled exam, to request an opportunity to complete a makeup exam.
2. The student provides the instructor with the required originally signed documentation regarding the reason he is not able to complete the test on the originally scheduled exam date. Without this documentation, the student will not be granted an accommodation to complete a makeup exam and will be assigned a zero grade for the exam. No incomplete (I) grade can be assigned in this situation.
3. The makeup exam does not have to be identical to the original final exam, but it must cover the same material.
4. All communications with the student must be via e-mail, with the University Registrar copied on each exchange.

It is the instructor's responsibility to:

- Validate (approve or refuse) the student's request and include the final exam details if approving the student's request. The instructor will copy the Registrar on all communication with students regarding their missed final exams.
- Retain documentation provided by the student with the course records.
- E-mail the University Registrar immediately, but no later than five business days prior to the date

of the final exam, with the following information for each student approved for a final make-up exam:
    - The student's name
    - The student's Alfaisal University ID number
    - The course and section number
    - The duration of the final exam
    - A list of all the aids/resources permitted the student during the taking of the final exam
- Coordinate with the University Registrar the due date of submission of the student's final grade.
- Assign an incomplete (I) grade to the student if unable to grade the final exam before the final grade deadline and submit a Grade Change Authorization Form to the College Dean for approval and processing to the Office of the Registrar.

Make-up Examinations (Other than Finals)

Alfaisal University requires that students be permitted to make up examinations missed because of illness, other unavoidable circumstances, or University activities. Therefore, instructors must offer reasonable options without penalty to students who have missed examinations for legitimate reasons.

It is the student's responsibility to contact the instructor as soon as possible before the exams about the reasons for a missed exam and if the instructor wishes to provide appropriate documentation.

Makeup examinations will be scheduled at a reasonable time and location. The makeup examination, if different, will be equivalent to the original in form, content, difficulty, and time limits, and the standards for scoring and grading will be equivalent to those used for the original examination.

Grade Appeal

Students are responsible for fulfilling the academic requirements for a course, as established by the instructor in the course syllabus. The instructor is responsible for evaluation of student performance and for determining a student's course grade. The following procedures are designed to provide a means for students to seek review of final course grades alleged to be arbitrary and capricious, or based on clerical error. In a grade appeal, only arbitrariness, prejudice, and/or error will be considered as legitimate grounds for an appeal.

Arbitrariness: The grade awarded represents such a substantial departure from accepted academic norms as to demonstrate that the instructor did not actually exercise professional judgment.

Prejudice: The grade awarded was motivated by ill will and is not indicative of the student's academic performance.

Error: The instructor made a mistake in fact.

Grade Re-evaluation Based on Exceptions to University Policy

In those cases, in which the grade received by the student is the result of the University policy (e.g., an "F" resulting from failure to remove an Incomplete grade in the time allowed or failure to officially withdraw from a course) rather than a faculty member's evaluation of performance in a course, the student's written appeal must be directed to the Office of the registrar. Such appeals will be considered by registration Committee. This process cannot be used for students appealing a failing grade (F) assigned due to academic dishonesty.

Academic Progress and Placement on Probation

The student is expected to maintain good academic standing throughout his studies by keeping his cumulative Grade Point Average (GPA) above 2.00 out of 4.00.

Dismissed Students Transferring Policy

Alfaisal University allows student who is on verge of dismissal to transfer to another college according to the below policy.

Policy

Allowing dismissed students to transfer to other college if they meet below requirements:

- Studied three semesters or less.
- Having 1.70 CGPA or more.
- Approval of new college's dean.

Student will be given two semesters to raise his/her CGPA above 2.0 otherwise he/she will be finally dismissed. To achieve this, student also to maintain semester GPA above 2.5 otherwise he/she will be instantly finally dismissed by end of the first extra semester.

Procedure

Student must fill the change college form, and have it approved by the dean of the college which the student wants to transfer to.

Grading System

Grading System:

All calculations at Alfaisal University are computed on the 4-point system as explained in below table:

Letter Grade	Grade Point	Percentile Range	Description
A	4.00	95%-100%	
A-	3.67	90%-94%	
B+	3.33	86%-89%	
B	3.00	83%-85%	
B-	2.67	80%-82%	
C+	2.33	76%-79%	
C	2.00	73%-75%	
C-	1.67	70%-72%	
D+	1.33	66%-69%	
D	1.00	60%-65%	
F	0.00	0%-59%	
W	-	-	
WP	-	-	
P	-	-	
NP	-	-	
AU	-	-	
I	-	-	
CR	-	-	
R	-	-	
CC	-	-	
DN	0.00	-	
S/U	-	-	
NC	-	-	

All grades (A, A-, B+, B, B-, C+, C, C-, D+, D, F, DN) are included in grade-point average calculation. Other grades (W, WP, P, NP, AU, I, CR, R, CC, DN, S/U, NC) may be used in certain situations, but are not included in the determination of the grade point average.

Explanation of Other Grades:

I- The student was doing satisfactory work but, for reasons beyond his control, he was unable to meet the full requirements of the course and as such is incomplete “I”. Unless otherwise specified by the respective college, an “I” will be changed to the grade of “F” by the University Registrar. The course Instructor must submit the final grade no later than 7 weeks after the last day of final exams for the previous semester. If a student is assigned an “I”, the instructor must notify the student in writing of the requirements for removal of the “I” and of the deadline for removal of the “I” using an extension form.

W- The student was permitted to withdraw without penalty. Any student who withdraws on or before midterm will receive a W. Withdrawals without penalty will not be permitted after the 8th week of the semester. Students must complete the official withdrawal form provided by the Office of the Registrar.

AU- The student was given permission to audit this course. After the last day of late registration (last day of drop/add), students may not transfer from audit to credit status. Students may change from credit to audit up to the official withdrawal date.

CR- The student was given credit for a course. Most often will be used in process of transferring credits from another university.

NC- Units for courses which are graded with a “P” (Pass), or “NP” (No Pass) will not be included in the student’s grade-point average calculation. Units for courses which are graded with a “P” will be counted toward the student’s degree requirements; those with grades “NP” will not.

R- Any undergraduate student may retake a course for which he/she received a grade below a “B”.

- Retake policy is applied on no more than 18 CH for College of Medicine and Pharmacy
- Retake policy is applied on no more than 12 CH for other colleges, undergraduate student
- Retake policy is applied on no more than 6 CH for Graduate student (Mater Programs)

For the course retaken, the lower grade will show as “R” in the transcript. Only the higher grade shall be counted in the determination of the student’s grade-point average. Retake policy will apply for courses taken at Alfaisal University only. Retake policy will not apply for courses taken outside the University.

CC- A student who does not complete a course by the end of the semester and his/her project/work will require an extension to the next semester. The final grade will be reported to the student after he/she finishes all requirements of the course.

DN- Any undergraduate who fails in a course because of exceeding the permissible limit of absences or a disciplinary verdict. The grade letter will be “DN” in the transcript and it will be counted in the student’s grade-point average.

General Grade**:

The General grade is assigned to the cumulative grade-point average GPA at the time of the student's graduation like the following:

- Excellent—if the cumulative grade-point average GPA is 3.50 out of 4.00 or higher
- Very good—if the cumulative grade-point average GPA is 2.75 or higher, but less than 3.50 out of 4.00
- Good—if the cumulative grade-point average GPA is 1.75 or higher, but less than 2.75 out of 4.00

** A student in a bachelor's degree must achieve a cumulative grade-point average GPA of 2.00 out of 4.00 or higher to graduate

Honor Awarded***:

The honor is awarded to the cumulative grade-point average GPA at the time of the student's graduation like the following:

- First honor—if the cumulative grade-point average GPA is 3.75 out of 4.00 or higher
- Second honor—if the cumulative grade-point average GPA is 3.25 or higher, but less than 3.75 out of 4.00

*** Upon graduation, a student must not have a grade “F” or “DN” in the transcript in order to receive an honor.

Graduation Requirements

A complete listing of graduation requirements will be available in the University catalogue. Students are responsible for fulfilling these requirements and are encouraged to consult with their academic advisors/ faculty advisors in planning their course schedules. Students are encouraged to check their transcript, program evaluation, and degree audit each semester for completeness and accuracy.

General Education Requirements (GERs)

General Education Requirements (GER) are a set of courses designed to provide students with introductory level instruction in core disciplines that broaden a student's education and are intended to develop critical thinking abilities. A student should chick his/her major academic plan.

Major Field Requirements

A maximum number of designated hours will be required for individual majors, including the comprehensive examinations and/or projects and required courses offered by other departments. The requirements for majors are outlined in the University Catalogue. For established departmental majors, this authority resides with the Dean of the College. Substitutes in the general education portion of the degree requirements must be approved by the Vice dean of Academic Programs.

Graduating with Honors

The transcripts of graduating students show honors categories based on the following scale:

- First Honor 3.75 through 4.0 GPA
- Second Honor 3.25 through 3.74 GPA

These honors categories are based on a student's cumulative average at the end the graduation semester. Student who are eligible for first or second honors also must meet the following criteria:

- He/she must not have failed any course completed at the University or any other university.
- He/she must have completed all graduation requirements within a specified period, the maximum of which is the average of the maximum and minimum limits for completing his/her degree program.
- He/she must have completed 60 percent or more of the graduation requirements at the university from which he/she is graduating.

Transcripts

Official transcripts will be released only with signed authorization of the individual student. Requests for transcripts must be submitted in writing to the Office of the Registrar. The charge for each Official Transcript is SAR 100. Unofficial transcripts may be obtained through NetClassroom.

Tuition, Fees, & Scholarships

Tuition & Fees

Alfaisal University tuition fees are:

- Preparatory Program yearly tuition fees: SR 60,000
- Undergraduates yearly tuition fees: SR 94,000 for all degrees
- Graduate programs full tuition fees: SR 200,000
- Summer tuition fees: 3,133 SR per CH (Exclusive of 15% VAT).

Tuition and Fees	SAR
Application fee (non-refundable) (UPP graduates are exempted)	600
Seat Reservation and Tuition fee first instalment paid before the beginning of the Academic year/Registration.	20,000
Preparatory Program tuition fee per semester	30,000
Undergraduate tuition fee per semester	47,000
Cost of credit hour for undergraduate students enrolling in 11 or fewer credit hours	3,917
Cost of all Graduate Programs	200,000
Cost of credit hour for Graduate Programs	4,762
Late registration fees (Third week of classes)	500
Late tuition processing fee	1000
Official transcript	100
Graduation Certificate Replacement	500
Student medical insurance (per academic year for international students)	Varies
Student visa (for international students)	Varies

Note: VAT is applicable

Important Notes:

- Late payment fee of 1,000 SR will be charge after instalment due date
- Payments due date are fixed.
- Student is expected to meet all his/her financial obligations to the University by the appropriate due dates.
- Dropping courses might affect tuition fees if the credit hours fell below 12 credit hours.

Payment

1. **Bank Check**

   Note: If the check rejected from the bank student's application status will be incomplete.

2. **Direct deposit**

   Note: The voucher must contain student full name, university ID and National ID or Iqama.

The university bank account details for direct deposit as following:

Bank Name	Saudi British Bank (SABB)
Name of Account	Alfaisal University
Branch	Al Faisaliah Branch
IBAN NO	SA39 4500 0000 1540 0011 1002
Swift Code	SABBSARI

All fees must be paid in Saudi Riyal.

Policies

Upon receiving an Acceptance letter, Students are required to pay the amount of SR 20,000 (Exclusive of 15% VAT). This non-refundable deposit will be applied to the total amount due for their respective tuition fees.

Payment Guide

1. Check payment on tuition and fees is acceptable and should be payable to the order of "Alfaisal University.
2. Direct deposit payment is also accepted with the following bank details, and to state the full name of the student or student ID:

Bank Name:	Saudi British Bank (SABB)
Name of Account	Alfaisal University
Branch:	Al Faisaliah Branch
IBAN NO:	SA39 4500 0000 1540 0011 1002

3. Settlement of fees should be made in Saudi Riyals.

Tuition and other fees schedule

Tuition and Fees	**SAR**
Application fee (non-refundable) (UPP graduates are exempted)	600
Seat Reservation and Tuition fee first instalment paid before the beginning of the Academic year/Registration.	20,000
Preparatory Program tuition fee per semester	30,000
Undergraduate tuition fee per semester	47,000
Cost of credit hour for undergraduate students enrolling in 11 or fewer credit hours	3,917
Cost of all Graduate Programs	200,000
Cost of credit hour for Graduate Programs	4,762
Late registration fees (Third week of classes)	500
Late tuition processing fee	1000
Unofficial transcript	Free
Student medical insurance (per academic year for international students)	varies
Student visa (for international students) (Not applicable for 1st year)	varies

Scholarships and Discounts

Alfaisal University has developed a comprehensive system of scholarships that will provide the opportunity for qualified students to pursue their higher education in the university, develop into excellent scholars and researchers, and significantly contribute to the well-being future of our kingdom and the region.

Available scholarships and discounts at Alfaisal University:

1. Need-based Scholarships

Alfaisal University offers scholarships program to help the undergraduate students who have financial difficulties from all countries to achieve their academic goals based on the following criteria:

Criteria

- Student must be an undergraduate student.
- Student must meet admission criteria of Alfaisal University
- Student must apply for Need-Based form through admission application.
- Student must confirm his/her admission acceptance in Alfaisal University (paying seat confirmation fees and submitting the original documents).
- Providing a proof of financial need.
- Demonstrated academic excellence Academic (standardized tests (Qudurat, Tahseely, SAT I, SAT II, IB, AS & A level tests).
- List of special skills, talents, or social creative ideas (attach supporting documents).

Application Process

- Fill out the **(Need-Based) e-form available** on the Online Admission Application.

Scholarship Coverage

- Bachelor: 20% of the tution fees

Required Documents

- Fill out the "**Need-Based E-Form**" and upload it to the Online Admission Application.
- Salary certificate contains (total salary plus all allowances in details, Employer stamp, Employer Signature, Chamber of commerce stamp and the

date of the letter issuance should not exceed one month, Salary letters should be issued from same sponsor mentioned on Iqama).
- Account Bank Statement for last 3 months with bank stamp
- Family National ID/Family Members IQAMA including parents
- House Rent Contract If property not owned or Electricity/Water Bill If you own the property.

Important Notes

- Applying for this scholarship does not mean being awarded; scholarships seats and funds are limited. Only top students will be awarded based on the above criteria and the availability of seats and funds.
- All applications will be thoroughly reviewed and evaluated. Scholarships final results require the approval of multiple parties, which might delay the final results. Therefore, Alfaisal University will not be held liable for any delay.
- Students cannot get both Need-Based & Merit-Based scholarships at the same time.
- Scholarships Office will evaluate your performance (CGPA) by the end of every Fall & Spring semester. If your CGPA drops below 3.50 but still above 3.00, you will be given one semester to raise it. If you fail to do so or your CGPA drops below 3.00 at the end of any semester, the scholarship will be completely terminated.
- Summer semester tuition fees are not covered by the scholarship.

2. Merit-based Scholarships

Criteria

The following table shows the minimum criteria for merit scholarship nomination of undergraduate students. However, meeting these criteria does not mean being awarded a scholarship as the scholarship seats and funds are limited. Only a limited number of students will be awarded based on the below criteria and the availability of funds.

College	Minimum Required Scores						
	Saudi Education Curriculum		American Education Curriculum		British Education Curriculum		Internationa Baccalaureat Curriculum
	Qudurat	Tahsely	SAT I	*SATII Alternatives	AS	A2	IB
Medicine	95	95	1400/1600	AP 2 subjects biology and chemistry(4), ACT 2 subjects biology and chemistry(28), IB, A2, or Tahsely	3 subjects (A) at least 2 of them biology and chemistry	2 subjects (A*) biology and chemistry	34 (at least 2 of high level courses biology and chemistry)
Pharmacy	90	90	1300/1600	-	2 subjects (A) biology and chemistry	-	30 (at least 2 of high level courses biology and chemistry)
Engineering	90	90	1300/1600	-	2 subjects (A)	-	30 (at least 2 of high level courses Math & Physics)
Scince	90	90	1300/1600	-	2 subjects (A)	-	30
Law	90	-	1300/1600	-	2 subjects (A)	-	30
Business	90	-	1300/1600	-	2 subjects (A)	-	30

*Since SATII is canceled, student must provide one alternative score equal to the college requirement. Achieving the minimum required scores does not necessarily mean receiving the scholarship.

Note

- College of Business: Tahsily, SAT II or AS scores will be considered as an additional factor.

Application Process

- The Deanship of Student Affairs will processes the merit-based Scholarship following student's confirmation of acceptance and paying the 20,000 SAR for Seat Reservation and Tuition fee first instalment.

Scholarship Coverage

- Bachelor: 20% of the tution fee.

- **Important Notes**

- Scholarship funds are limited; being nominated for a scholarship doesn't mean being awarded; priority will be given to students with good academic standing.
- Student cannot get both Need & Merit-Based scholarships at the same time.
- Scholarship Office will evaluate your performance (CGPA) by the end of every Fall & Spring semester. If a student fails to attain a cumulative GPA of 3.50 out of 4.00 by the end of any of the two semesters, the scholarship will be terminated immediately.
- Summer semester tuition fees are not covered by the scholarship.
- The University reserves the right to cancel the scholarship program without any prior notice and without any liability.

3. Dean’s List

Dean's List is awarded at the end of each academic year for continued students with 3.75 GPA and its 20% of tuition fees.

- Student's must complete at least 30 CH of AU courses (UPP courses are excluded).
- Student's must obtain a CGPA of 3.75/4.00 or above by the end of each academic year.
- Summer semester tuition fees are excluded.

The University reserve the right to cancel Dean's List program without any prior notice and without any liability.

4. Sibling discount

The Sibling Discount is granted to siblings enrolled in Alfaisal University based on the following criteria:

- All siblings must be enrolled in full-time undergraduate degree in Alfaisal University.
- The sibling discount is applicable fall and spring semesters only.
- The sibling must provide evidence of relationship.
- The new applicant can apply through the admission application attaching a copy of national IDs or Iqama's of both siblings.
- 15% discount will be granted to the second sibling and 25% for each successive siblings.

The University reserves the right to cancel Sibling Discounts program without any prior notice and without any liability.

5. Duration of scholarships

The student must maintain scholarship requirements throughout his/her study to sustain the scholarship. The scholarship will continue until the student graduates from Alfaisal University and will cover:

- One year for the University Preparatory Program.
- Four years for the College of Engineering, Business, or Science.
- Six years for the College of Medicine or Pharmacy

6. Change of specialization

The student is not permitted to change his/her major without approval from the Academic Deans of the concerned colleges and the Scholarship Awards Committee.

7. Termination of scholarships

The Office of Scholarship and Financial Assistance may terminate a student's scholarship on the recommendation of a college or the Scholarships Committee under any of the following conditions:

- Unsatisfactory academic progress by not maintaining the required CGPA
- Personal or disciplinary issues that prevent continued attendance as reported by the Dean of the student's college.
- Withdrawal from the university.
- Not graduating within the recommended timeframe specified for completing the bachelor degree program

Student Life

Student Employment

Student Part-Time Employment represents an important and valuable experience for the student, in addition to other benefits for student and the university. Alfaisal University Program for student employment is implemented to encourage them to be effective and proactive in the university community and provide them with the financial assistance that they may need; as well as give them the chance develop experience.

Policy

Student compensation as following:

- An hourly rate: 30 SAR (calculation is based on working a total of 2 semesters).
- The maximum allowed working hours is 15 hours/week.
- The contract duration is one semester only and can be renewed for one semester each time.
- There should not be any conflict between the student classes and the working hours.
- A student can only be employed with one Department/College during the same semester.
- Student Requirements to be fulfilled:
    - The student must be enrolled during the Employment semester.
    - The Student Cumulative GPA must be 2.5 and above.

Procedure

To employ a student at your Department/College please follow the steps below:

Step One Request

- Ask the requested student to:
    - Fill *"Student Employment Application (SA-SE02)*"
    - Attach a copy of his/her ID/Iqama and his Student ID.
- The requester must prepare the Student Contract and have the requested student sign it.

Step Two Approvals

- The requester must *submit* the above forms and documents to Finance for Approval.
- If approved By *Finance Dept.* (Request can be accommodated (within budget)) the request will be handed over to *Student Affairs*.
- If approved by *Student Affairs (*Student fulfilled the Employment requirements) the request will be handed over back to *Finance Dept.* and a confirmation email will be sent to the requester.

Step Three Payment

- After each employment month ends the employed student must fill a soft copy of the *"Student Employment Time Sheet (SA-SE03)"*
- They employed student must print and sign the Time Sheet, then submit it to Finance Department for the payment to be processed.

Step Four Extention

A contract can be extended for one additional semester each time, this form *"Student Employment - Agreement Extension Request"* must be filled and submitted to Finance Department.

Student Counseling

Student counseling aims to help students overcome any difficulties that may face them in their life in the University. It provides a space where students can feel comfortable and relaxed while talking with an empathic listener and where the student has the opportunity to explore as much of his or her concerns as he or she chooses to bring.

Students with low academic performance may be looking for help around basic study skill improvement in areas such study better for tests or manage time more effectively.

The counselor help students by:

- Increase motivation to complete academic work
- Improve time management skills
- Managing test anxiety
- Strengthening test preparation strategies
- Decreasing procrastination
- Better note-taking skills

The Counseling Unit provides the CareerExplorer assessment for Alfaisal student that have any doubt about their major. This assessment it will generate

immediately a report that shows many useful information as top careers, top degrees, trait report and personality report. For counseling assistance, we urge you to visit the office of Student Affairs located at the ground floor of the student center.

Student Activities

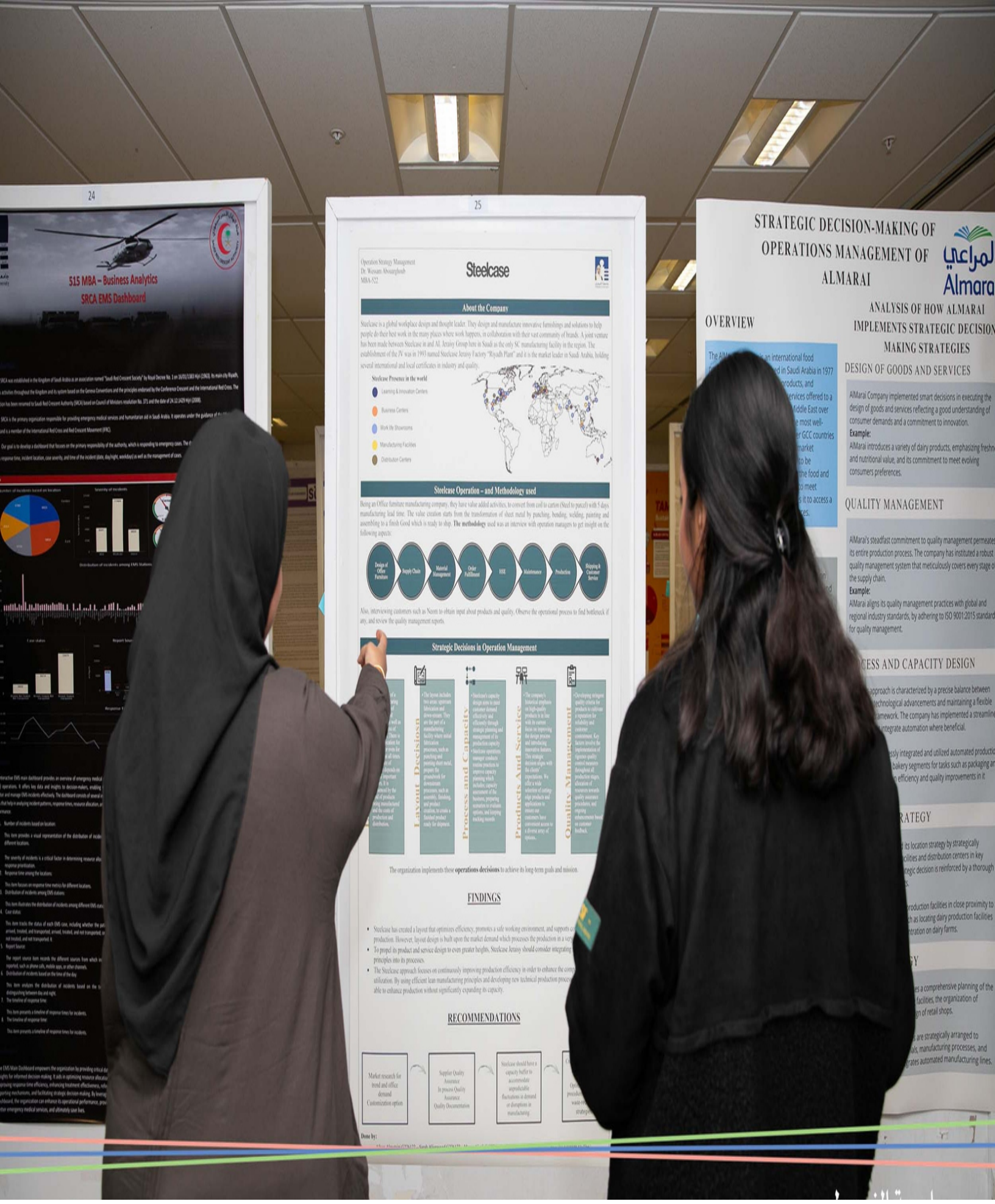
Alfaisal University is keen in involving all students in every kind of activities through college's associations or clubs. It Allows students to participate in the Kingdom's national and international events in the campus. The clubs' events aim at serving the campus life and the international community in general. The activity department at Deanship of Student Affairs, Admissions and Registration support and sponsor all approved proposals.

Association: each college has one association established and supervised by the Deanship of Student Affairs, Admissions and Registration (activity office), the members must be from the same college.

Club: established by the students and supervised by Deanship of Student Affairs, Admissions and Registration, the club members can be from all the students in the campus.

Policy

- Must be approved by Deanship of Student Affairs, Admissions and Registration.
- All clubs should represent Alfaisal vision and mission.
- All events must be in compliance with MoE and Alfaisal regulations.
- Head of association or club must spend a year at Alfaisal as a student and be aware of all regulations.
- A head of a club and its members should have no conduct or academic warning.
- No racial or religious discussions or debates.
- Should not duplicate either in function or purpose an existing club.
- No event that may endanger the mental, physical health or safety of students or endanger a public property on campus.
- Any club that inactive for whole year will be cancelled.
- All recognized student organizations (association and club) will be held responsible by the University for abiding by Alfaisal, and governmental laws. The University is involved in the off-campus event of recognized student organizations when such event is under Alfaisal name.
- Only currently registered students shall be eligible for active membership status in student organizations.
- The purpose of student organizations must not conflict with the educational functions or established policies of the University.
- The University offers several ways for student organizations to market themselves to students who want to become involved.
- All recognized student organizations are given space on the sites. https://ea.alfaisal.edu/site/
- The Office of Student Activities coordinates associations and clubs Fair at the beginning of the fall semester. All recognized student organizations are given an opportunity to register for the fairs during which they can set up a table with information about their groups.
- Student organizations can place flyers/materials on general purpose bulletin boards throughout campus after the approval of SA & PR.
- The Head of a club's responsibilities:
  - Represent the club.
  - Enforce the regulations on the club's activities.
  - Contact Student Affairs for any issues.
  - Submit all financial receipts to the activity's office.
  - Submit comprehensive report for each event with pictures.
  - Must be enrolled full time student.
  - Must train the next president before he/she leaves.
- The University's recognition to a student association or club, the club is accorded a number of benefits, including:
  - Use of the University's logo and insignia is subject to university regulations.
  - Ability to book space for the activity.
  - Right to hold Events.
  - The use of the clubs' name on campus.
  - Access and ability to use university property and equipment.
  - Access to send email to all students.
  - Partial financial support for the activities.
  - Email address for the club.


24
515 MBA – Business Analytics
SRCA EMS Dashboard
25
Operation Strategy Management
Dr. Wessam Abouzeghoub
MBA-522
Steelcase
About the Company
Steelcase is a global workplace design and thought leader. They design and manufacture innovative furnishings and solutions to help people do their best work in the many places where work happens, in collaboration with their vast community of brands. A joint venture has been made between Steelcase in and Al Jerainy Group here in Saudi as the only SC manufacturing facility in the region. The establishment of the JV was in 1993 named Steelcase Jerainy Factory "Riyadh Plant" and it is the market leader in Saudi Arabia, holding several international and local certificates in industry and quality.
Steelcase Presence in the world
Learning & Innovation Centers
Business Centers
Work life Showrooms
Manufacturing Facilities
Distributon Centers
Steelcase Operation – and Methodology used
Being an Office furniture manufacturing company, they have value added activities, to convert from coil to carton (Steel to parcel) with 5 days manufacturing lead time. The value creation starts from the transformation of sheet metal by punching, bending, welding, painting and assembling to a finish Good which is ready to ship. The methodology used was an interview with operation managers to get insight on the following aspects:
Design of Office Furniture
Supply Chain
Material Management
Order Fulfillment
HSE
Maintenance
Production
Shipping & Customer Service
Also, interviewing customers such as Neom to obtain input about products and quality. Observe the operational process to find bottleneck if any, and review the quality management reports.
Strategic Decisions in Operation Management
Layout Decision
Process and Capacity
Products And Service
Quality Management
The organization implements these operations decisions to achieve its long-term goals and mission.
FINDINGS
RECOMMENDATIONS
Market research for trend and office demand
Customization option
Supplier Quality Assurance
In process Quality Assurance
Quality Documentation
Done by:
STRATEGIC DECISION-MAKING OF OPERATIONS MANAGEMENT OF ALMARAI
Almara
OVERVIEW
ANALYSIS OF HOW ALMARAI IMPLEMENTS STRATEGIC DECISION MAKING STRATEGIES
DESIGN OF GOODS AND SERVICES
AlMarai Company implemented smart decisions in executing the design of goods and services reflecting a good understanding of consumer demands and a commitment to innovation.
Example:
AlMarai introduces a variety of dairy products, emphasizing freshn and nutritional value, and its commitment to meet evolving consumers preferences.
QUALITY MANAGEMENT
AlMarai's steadfast commitment to quality management permeates its entire production process. The company has instituted a robust quality management system that meticulously covers every stage o the supply chain.
Example:
AlMarai aligns its quality management practices with global and regional industry standards, by adhering to ISO 9001:2015 standard for quality management.

College of Business

CoB General Information

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Email: cob@alfaisal.edu

Website: http://cob.alfaisal.edu/

College of Business Vision, Mission, and Values

College of Business Vision

We aspire to become a leader in business education and research in the Kingdom of Saudi Arabia and the MENA region.

College of Business Mission

COB develops business leaders through quality education and research and fosters partnerships with local and international stakeholders.

In this context, quality education means:

1. providing students with the necessary knowledge and skills to succeed in a highly competitive global marketplace.
2. pushing the frontiers of business knowledge, creating new opportunities, and promoting economic growth and business sustainability.
3. educating the next generation of business leaders and pioneers that dream big, take risk, and shape the future of the ever-changing business landscape.
4. connecting with the Kingdom's ongoing economic changes and promoting entrepreneurship and innovation.

College of Business Values

- **Quality**: We are committed to excellence in and passionate about high-quality teaching and research, which we continually strive to improve.
- **Integrity**: We hold ourselves to the highest ethical standards, value personal integrity and transparency, and take responsibility for our actions.
- **Diversity**: We take pride in promoting inclusiveness and diversity, which is reflected in the diverse background of our faculty, committed to training the next generation of business and community leaders regardless of their background, gender, economic status, and national origin.
- **Collegiality**: We are committed to faculty governance and a collegial system in which proposed new policies are institutionalized and principle-based, guided by our vision, and consistent with our strategic objectives.
- **Engagement**: Our focus is to build and maintain a strong relationship with our stakeholders, including alumni, businesses, and professional communities, and to provide guidance and thought leadership on business issues that the stakeholders value.

About the CoB

The CoB at AU is a young and fast-growing institution. It is one of six colleges at AU. AU is a private non-profit university where English is the official language of the university. It is in the heart of the city of Riyadh, the capital of the Kingdom of Saudi Arabia, built around the palace of the former King of Saudi Arabia, King Faisal Bin Abdulaziz Alsaud. The college admitted its first batch of 24 male and female undergraduate students in the Fall of 2008. Whereas the first male and female cohort of MBA students was admitted in the Fall of 2010. It offers a vibrant undergraduate business

administration degree that is grounded in liberal arts education with six majors (Accounting, Entrepreneurship and Family Business, Finance, Human Resource Management, Marketing, and Operations and Project Management). The college also offers an MBA program that is directed toward middle managers. Six tracks are available: MBA- General, MBA-Accounting/Taxation, MBA-Digital Marketing, MBA-Finance, MBA-Healthcare Management, and MBA-Human Capital Management. The College, as part of its commitment to serving the community, also offers active Executive Education programs. The college's pioneering curriculum and its diverse faculty are attracting the best and the brightest students in the Kingdom of Saudi Arabia. Students learn from distinguished scholars and practitioners who have excellent academic credentials.

Students, at the College of Business, learn the skills necessary to confront and manage the challenges of modern businesses. They are well trained to recognize change and growth and equipped with the right skills to deal with them. In-class lectures and case analysis, executive lectures involving well-accomplished executives and government officials, and internship experiences with diverse businesses give students the edge needed to help companies compete in today's global marketplace. It graduates leaders with exceptional abilities to manage and sustain growth in public and private organizations through critical thinking, analytical decision-making, information technology, and collaborative execution. Through such a well-rounded education, Alfaisal business students become not only leaders of profitable family enterprises and public corporations but, also, capable societal leaders contributing to the growth and development of the Kingdom of Saudi Arabia and the region. They are well suited for the operationalization of the Saudi 2030 Vision.

College of Business Approach

The College achieve its ideals by

- maintaining a small class size in order to maximize student participation inside the classroom and faculty/student interaction.
- using problem-based pedagogy including case studies and experiential learning activities.
- curriculum grounded in liberal arts education that promotes independence and critical thinking.
- helping students to develop quantitative, technological, and leadership competencies.
- encouraging student participation in learning outside the classroom through Business Club activities, internships, research projects, field trips, and so on.
- working closely with the local business community to ensure the relevance of student learning opportunities.
- conducting high-quality research with applicability to the Kingdom of Saudi Arabia and the global business community.
- engaging in selective consulting projects to increase faculty and student exposure to significant business and development issues inside the Kingdom of Saudi Arabia.
- connecting students to the business and public communities through an active Executive Lecture Series and at least a four-months internship program.

National and International Recognition

The College of Business (CoB) programs are approved and recognized by the Ministry of Education in Saudi Arabia. Alfaisal University opened its doors for instructions in 2008. Despite its young age, Alfaisal University (AU) is recognized as one of the best universities in the Kingdom of Saudi Arabia (KSA). Many of our students, including graduates of the CoB, are regularly accepted in top international universities around the world and many are currently pursuing their graduate degrees.

The CoB is an active member of the Association to Advance Collegiate Schools of Business (AACSB) and, recently, fulfilled the AACSB eligibility requirements for working toward AACSB full accreditation within the next few years. Only 6% of business schools worldwide hold AACSB accreditation. The College of Business was featured in Newsweek as one of the ten Leading Business Schools in 2017; please see the link http://www.newsweek.com/insights/leading-business-schools-2017/alfaisal-university.

CoB Faculty

Dr. Abdel Monim Shaltoni	Associate Professor, Department of Marketing, College of Business. Ph.D., University of Birmingham, UK.
Dr. Adnan Abo Al Haija	Associate Professor, Department of Finance, College of Business, Ph.D., University of Vienna, Austria.
Dr. Ahmed Alanazi	Assistant Professor, Department of Finance, College of Business. Ph.D., Griffith University, Australia.
Dr Anfaal Ahmed Khan	Senior Lecturer, Department of Accounting, College of Business. Ph.D., University of Glasgow, UK.
Dr. Ashley Carreras	Assistant Professor, Department of Operations and Project Management, College of Business. Ph. D., Leicester University, UK.
Dr. Bajis Dodin	Professor and Dean, College of Business. Department of Operations and Project Management, Ph.D., North Carolina State University, USA.
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Dr. Robert Zacca	Assistant Professor, Department of Management, College of Business, Ph.D., Cracow University of Economics, Poland.
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College of Business Degree Programs

The CoB offers two dynamic programs: an MBA Program with six tracks, and a bachelor's degree in business administration (BBA) with six majors and 7 minors. Details of the undergraduate business administration programs are given below. Details about the MBA program are available on Alfaisal University's Graduate catalogue.

The Bachelor of Business Administration (BBA) program

Vice Dean of Undergraduate Programs and Internship: Dr. Hayat Khan, Ph.D., College of Business.

BBA Vision and Mission

BBA Vision: We aim to be the first choice for students who strive to be business leaders.

BBA Mission: The mission of the Bachelor of Business Administration is to develop the intellectual, professional and personal competencies of the students through principled business education and commitment to excellence.

The BBA program mission is translated to the following goals**:**

- Providing a student-centered environment that is committed to the CoB core values of quality, integrity, diversity, collegiality, and engagement.
- Offering modern curriculum and using innovative methods to enhance the student learning experience.
- Engaging students in extracurricular activities blended with work experience in local and international markets.
- Attracting well-qualified and research-oriented faculty from diverse backgrounds.
- Support learning activities that focus on applying business theory to real practices.

The BBA program offers the following six majors and seven minors. Students may also opt for a double major instead of adding a minor:

- **BBA with major in Accounting**
- **BBA with major Entrepreneurship and Family Business**
- **BBA with major in Finance**
- **BBA with major in Human Resources Management**
- **BBA with major in Marketing**
- **BBA with major in Operations and Project Management**

- **Minor in Accounting**
- **Minor in Business Analytics**
- **Minor Entrepreneurship and Family Business**
- **Minor in Finance**
- **Minor in Human Resources Management**
- **Minor in Marketing**
- **Minor Operations and Project Management**

BBA Degree Requirements

To obtain a Bachelor of Business Administration degree in one major, the student must complete a total of **130 credit hours** that are distributed as follows:

A. **General Education Requirement (GER):** Courses adding to 44 credit hours; some of these are mandated by the Ministry of Education, which are mostly completed in the first two years of the

program. These courses provide students with a good foundation in humanities, and in social and natural sciences.

B. **Business Common Core (BCC):** Courses adding to 44 credit hours. These courses provide students with a strong foundation in quantitative and qualitative decision methods and information technology along with a broad core of business education. These courses are mostly completed before the end of the third year.
C. **Major Core Courses (MCC):** These consist of 36 credit hours including 12 for internship completed in the final semester in the corresponding major.
D. **Business Electives Courses (BEC):** consisting of 6 credit hours and completed within the third and fourth year. The College of Business regularly introduces new courses as Business electives to keep up with the market needs which are later converted to a common core course if the skill is broadly needed by the market

CoB General Education Requirement Courses (GER)

Ministry of Education Required courses

Item #	Title	Credits
ARB 101	Arabic Language I	2
ARB 112	Arabic Language II	2
ISL 101	Islamic Studies I	2
ISL 112	Islamic Studies II	2
ENG 101	Freshman English 1	3
ENG 112	Freshman English II	3

The Mathematics and Computing courses

Item #	Title	Credits
MAT 100	Pre-calculus	3
MAT 111	Business Calculus	3
OPM 211	Business Statistics	3
OPM 101	Introduction to Computing	3

The Natural Sciences courses (6 credits) selected from:

Item #	Title	Credits
BIO 103	Introduction to Human Biology	3
CHM 107	Chemistry in the Environment and Everyday Living	3
PHU 101	Astronomy	3
PHU 102	Science of Energy and the Environment	3

The Social Sciences courses (6 credits) selected from:

Item #	Title	Credits
ANT 101	Introduction to Sociocultural Anthropology	3
ANT 102	Entrepreneurial Multiculturalism	3
HIS 101	Islamic Civilization and Mediaeval Europe	3
PSY 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3

The General Electives Courses (6 credits) selected from the social and/or natural science courses.

Item #	Title	Credits
	These can be from any of the following courses:	
		44

CoB Business Common Core Courses (BCC)

All CoB students must complete the following courses. These are mostly completed before the end of junior year.

Business Core Courses

Excluding the internship which is part of the major core courses.

Item #	Title	Credits
COB 100	Student Orientation and Academic Success	1
ECO 101	Microeconomics	3
ECO 102	Macroeconomics	3
ACC 202	Introduction to Management Accounting	3
FIN 201	Principles of Finance	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3

MGT 230	Organizational Behavior	3
MKT 201	Principles of Marketing	3
OPM 230	Management Information Systems	3
MGT 301	Business Law	3
OPM 330	Quantitative Methods for Business	3
BAN 310	Business Analytics and Visualization	3
MGT 300	Executive Lecture	1
MGT 490	Strategic Management	3

COB 100 Student Orientation and Academic Success is a formal one-credit hour course on student orientation and academic success. This course introduces students in the College of Business (COB) to their rights and responsibilities as a student at the COB and develops their skills to foster academic success and enhance their learning experience. It gives the students a chance to get a thorough understanding of academic policies and procedures applicable to the COB Students, including policies and procedures related to attendance vs participation, academic misconduct, academic probations, outside studies programs and credit transfers, grade appeals, GPA calculations, repeating courses, make-up exams, sick-leave, student advising, etc. The course familiarizes students with their study plans, including adding a minor or a double major and related requirements; equipping them with the skills required to access and utilize the rich library resources; introducing them to the set of extracurricular activities available at Alfaisal, and enhancing their time management and study skills.

44

CoB Major Core Courses (MCC)

Students are required to complete 24 credit hours, plus a 12 credit hours internship (coop) relevant to their majors. Students may also add a minor or a double major provided they meet the minimum requirement to add a double major or a minor. These details and requirements are listed below.

The Internship

The Internship Program is designed to provide the College of Business students with a practical, on-the-job experience, which makes a valuable contribution to their academic and career development. The internship program is mandatory for all undergraduate students. The duration of the internship program is at least four (4) months and students can earn twelve (12) credits towards their final degree requirements. The Internship is normally conducted in the final semester unless approved otherwise by the Undergraduate Business Office. Students are not allowed to enroll in any other course within the duration of the coop.

Students will gain practical skills and experience to reinforce and expand what they learned in the classroom and increase their employability skills in an ever-competitive job market. Due to the growing reputation of Alfaisal University, several organizations approach the College of Business to send its students to participate in their internship programs. The College of Business has worked with over 100 national and international organizations to host the internships; many of these organizations end up hiring the CoB student interns.

Please go to the major core courses (MCC) for each department below for more details.

CoB Business Electives Courses (BEC)

These are 2 courses selected from the set of courses listed below.

Business Elective Courses (BEC)

All CoB students must complete 6 credits selected from the list of courses below or any of the other majors' core courses:

Item #	Title	Credits
	Multiple	
ACC 495	Accounting Theory and contemporary Issues	3
BAN 350	Predictive Analytics and Data Mining	3
BAN 370	Business Big Data Intelligence	3
BAN 380	People Analytics and strategy	3
BAN 410	Applied Business Analytics Project	3
ECO 310	International Economics	3
ECO 320	Islamic Economics & Finance	3

FIN 330	Financial Planning	3
FIN 340	Contemporary Financial Issues	3
FIN 377	Fixed Income Securities	3
FIN 380	Corporate Governance:	3
FIN 450	Financial Trading Strategies	3
MGT 374	Real Estate	3
MGT 420	Human Performance Improvement	3
OPM 315	E-Commerce (BE)	3
		6

General Notes about College of Business Degree Requirements

- A minimum of 130 credit hours is required to graduate with one major.
- **Course Load Per Semester:** The Ministry of Education requires students to enrol in at least 12 credit hours to be considered full-time students. It also states that the normal load for the full-time student is 15-16 credit hours per semester. However, a student with a very good cumulative GPA can be allowed to enrol **in 18 credit hours per semester, which is the maximum allowed.** Furthermore, a student is not allowed to enrol in a course in another university if the course is offered at Alfaisal University in the same semester. Also, if a student has a grade of "F" in a course he/she cannot complete this course in another university, then transfer the grade to AU.
- Students can repeat a maximum of four courses within the duration of his/her BBA degree at AU.
- All students must consult their respective advisor/s throughout their full study cycle with due approvals at specific milestones.
- The CoB strictly applies the policies listed under the "Student Affairs Deanship Policies and Procedures." Please make sure to orient yourself with policies applicable to you.
- Similarly, students and faculty are required to implement the **CoB** "Teaching Guidelines".
- All courses are 3 credits unless stated otherwise.
- All students must follow their study plans. Any deviation from the study plan must be discussed and approved by the student's Academic Supervisor to avoid delay in graduation.
- **Students must complete all BCC and MCC courses in the CoB.** Exceptions can be made by a petition that needs to be approved by the Dean.
- The teaching schedule for the Freshman year of CoB students is presented in Figure 2 below. Students must enroll in these courses as they are pre-requisites for many business courses required in the second year and thereafter. Not doing so may result in delaying the graduation of the student beyond the end of the fourth year of study.

Figure 1: Timeline for completing the BBA degree

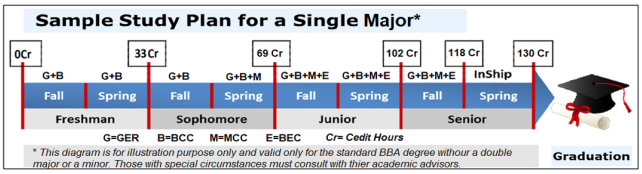

Figure 2: Schedule of courses for the freshman year

First Semester		CHs	Type	Second Semester		CHs	Type
ARB 101	Arabic Language I	2	GER	**ARB 112**	Arabic Language II	2	GER
ISL 101	Islamic Studies I	2	GER	**ISL 112**	Islamic Studies II	2	GER
ENG 101	Freshman English I	3	GER	**ENG 112**	Freshman English II	3	GER
MAT 100	Pre-Calculus	3	GER	**MAT 11**	Business Calculus	3	GER
OPM 101	Introduction to Computing	3	Core	**ACC 201**	Introduction to Financial Accounting	3	Core
ECO 101	Microeconomics	3	Core	**ECO 102**	Macroeconomics	3	Core
COB 100	Student Orientation and Academic Success	1	Core				
		17 Credits				16 Credits	

Adding a Double Major

The College of Business very good performing students are rewarded by given the opportunity of adding a minor or a second major. A student can add a second major to his/her main degree subject to the following conditions/requirements:

1. Students can add a double major only after successfully completing a minimum of 60 credit hours. Hence, the double major can be added if qualified) at the end of the 4th. semester.
2. The student's cumulative GPA must be 3.3 or above at the time of adding the double major. Such students must maintain a cumulative GPA of 3.3 or above until graduation. Those who fail to maintain the minimum required cumulative GPA will receive a minor in place of the additional major instead of a double major.
3. Students can add only one double major (or a minor but not both).
4. Students are free to choose any major/minor offered by the CoB (not any other AU college) as a double major or a minor, irrespective of their current major.
5. A double-major student is required to complete a minimum of 154 credit hours comprising of the following.
    i. a minimum of 130 Cr in the standard (first major) degree, plus;
    ii. additional 24 Cr comprising of the 8 Major Common Courses (MCCs) of the second major.
6. **No double Counting**. Courses common between the two majors will be counted only once. Such students will be required to complete replacement courses for the courses common between the two majors as approved by the COB.
7. A double-major student is required to do an internship in only one major. **The Internship must be in the primary major selected by the student, which is the major a student started with.**

Adding a Minor

Instead of adding a second major, students also have the opportunity of adding a minor subject to the following conditions/requirements.

1. Students can add a minor only after successfully completing a minimum of 60 credit hours.
2. The student's cumulative GPA must be 3.0 or above at the time of adding the minor. Such students must maintain a minimum cumulative GPA of 3.0 until graduation to receive a minor; otherwise the minor will be cancelled.
3. A student can add only one minor. Double major students are not allowed to add a minor.
4. A minor comprises of five additional courses, equivalent to 15 credit hours. The minimum requirement for BBA with a minor is therefore 145 credit hours comprising of the following
    i. a minimum of 130 Cr in the standard degree, plus
    ii. additional 15 Cr comprising of five additional courses listed under each minor offered by the College of Business below.
    iii. No double counting: Courses common between the major and the minor will be counted only once. Such students will be required to complete replacement courses for the courses common between the major and the minor as approved by the COB.

The college currently offers minors in 7 areas (accounting, business analytics, entrepreneurship and family business, finance, human resource management, marketing, and operations and project management). Please refer to the list of courses offered under each minor below.

Changing Major or Minor

A student can start his/her academic study (in the first semester) with or without declaring a major. Within the first three semesters, a student can change major/s as the curriculum (courses) are the same for all majors. However, by the end of the third semester (before the start of the fourth semester) each student must select a major (department). Once the major is selected a student **can change the major a maximum of two times: the first at the end of the fourth semester, and the second at the end of the fifth semester.** Thereafter a student may be allowed to change a major, but that may delay his/her graduation due to the possible deviation from the study plan of the selected major.

In case of a double major or minor, a student can change it but must be aware of the impact on the completion of the degree. A later change may result in delaying the graduation by one or more semester/s. Change of a major or minor is allowed only after the completion of a semester and at least a week before the beginning of the succeeding semester. In all cases changing the major or minor requires the approval of the first (current) major academic advisor, the Undergraduate Business Program Vice Dean, and the Dean of CoB.

Advising and the Assignment of an Academic Advisor (Supervisor)

Each student must have a supervisor at all times. Students in the first four semesters (Freshman and Sophomore years) are advised by the Vice Dean for Undergraduate Business Programs and Internships and his/her assistants (students' counselors). However, thereafter (within the junior and senior years) each student must be assigned to a faculty member in his/her department. The student stays with this academic advisor until graduation (including the supervision of the Internship). An academic advisor can be changed only based on justifiable reasons. In this case, the student must petition such a change, and it must be approved by the Vice Dean of the Undergraduate Business Programs and Internship and the Dean.

Accounting

Program

College of Business

Major

Minor

Accounting Major

Major Core Courses

Accounting major must complete all the courses below. For double major, see general notes.

Item #	Title	Credits
ACC 301	Intermediate Financial Accounting I	3
ACC 302	Intermediate Financial Accounting II	3
ACC 320	Cost Accounting	3
ACC 330	Zakat and Income Taxes	3
ACC 390	Financial Statement Analysis and Valuation	3
ACC 410	Advanced Financial Accounting	3
ACC 420	Auditing and Assurance Services	3
ACC 425	Special Topics in Taxation	3
ACC 498	COOP Training Internship	12

Notes: *Students on old study plans (ACC 390) will need to complete OPM 340 as a common core course instead of ACC 390, (ACC 425) may choose to complete a Business elective (ACC 390and ACC 425 may also be chosen as Business electives), (ACC 498) will need to complete ACC 499, which is 9 credit hours.*

Accounting Minor

Minor Courses

Students from other majors can add a minor in accounting and must complete the following courses:

Item #	Title	Credits
ACC 301	Intermediate Financial Accounting I	3
ACC 302	Intermediate Financial Accounting II	3
ACC 390	Financial Statement Analysis and Valuation	3
ACC 425	Special Topics in Taxation	3
	ONE course from the following list	3

Students majoring in Finance must complete ACC 320 and ACC 420 as ACC 301/ACC 390 are required courses in the finance major.

Study Plan (Major in Accounting)

Fall (Year 1)

Item #	Title	Credits
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 101	Freshman English 1	3
MAT 100	Pre-calculus	3
OPM 101	Introduction to Computing	3
ECO 101	Microeconomics	3
COB 100	Student Orientation and Academic Success	1

Students on old study plans are not required to complete COB 100.

Spring (Year 1)

Item #	Title	Credits
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2
ENG 112	Freshman English II	3
MAT 111	Business Calculus	3
ECO 102	Macroeconomics	3

Fall (Year 2)

Item #	Title	Credits
OPM 211	Business Statistics	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3
FIN 201	Principles of Finance	3
ACC 202	Introduction to Management Accounting	3
	Natural Science - I	3

Spring (Year 2)

Item #	Title	Credits
MKT 201	Principles of Marketing	3
OPM 230	Management Information Systems	3
MGT 230	Organizational Behavior	3
ACC 301	Intermediate Financial Accounting I	3
OPM 330	Quantitative Methods for Business	3
	Social Science - I	3

Fall (Year 3)

Item #	Title	Credits
MGT 301	Business Law	3
ACC 302	Intermediate Financial Accounting II	3
ACC 330	Zakat and Income Taxes	3
ACC 320	Cost Accounting	3
	Business Elective - I	3
	Natural Science - II	3

Spring (Year 3)

Item #	Title	Credits
BAN 310	Business Analytics and Visualization	3
ACC 390	Financial Statement Analysis and Valuation	3
ACC 420	Auditing and Assurance Services	3
ACC 425	Special Topics in Taxation	3
	Social Science - II	3

BAN 310 used to be OPM 460. Also fine if a student completed OPM 460.

Fall (Year 4)

Item #	Title	Credits
MGT 490	Strategic Management	3
ACC 410	Advanced Financial Accounting	3
	Business Elective - II	3
	General Elective - I	3
	General Elective - II	3
MGT 300	Executive Lecture	1

Spring (Year 4)

Item #	Title	Credits
ACC 498	COOP Training Internship	12

Business Analytics

Program

College of Business

Minor

Business Analytics Minor

Minor Courses

Students from other majors can add a minor in Business Analytics and must complete the following courses.

Item #	Title	Credits
BAN 350	Predictive Analytics and Data Mining	3
BAN 370	Business Big Data Intelligence	3
BAN 410	Applied Business Analytics Project	3
OPM 340	Operations Management	3
	ONE course from the following list	3

Entrepreneurship and Family Business

Program

College of Business

Major

Minor

Entrepreneurship and Family Business Major

We designed the major in Entrepreneurship and Family Business according to world-class standards to develop the skills, knowledge, and confidence to

prepare our students for a career as autonomous entrepreneurs, family-business owners, or innovators in new ventures.

The focus on entrepreneurship and family business studies provides the opportunity to develop entrepreneurial talents while providing a solid intellectual foundation to confront the challenges facing a business owner. The study plan includes courses from different business areas such as management, finance, legal expertise, innovation, and human resources management to help students to prepare for a leadership role in a family business or as an entrepreneur.

Courses in the major have an experiential learning perspective; by using case studies and experiential activities, students will have the opportunity to develop their business acumen under the guidance of their instructors.

Major Core Courses

Entrepreneurship and Family Business major must complete all the courses below.

Item #	Title	Credits
MGT 350	Human Resources Management	3
MGT 373	Negotiation	3
MGT 375	Introduction to Entrepreneurship	3
MGT 376	Entrepreneurial Finance	3
MGT 393	Managing Organizational Change	3
MGT 395	Design Thinking	3
MGT 401	Family Business Management	3
OPM 450	Management of Innovation	3
MGT 499/ HRM 498	COOP Training Internship	12

Notes: This is a new major and the option is not available on old study plans.

Entrepreneurship and Family Business Minor

Minor Courses

Students from other majors can add a minor in EFB and must complete the following courses.

Item #	Title	Credits
MGT 375	Introduction to Entrepreneurship	3
MGT 373	Negotiation	3
MGT 393	Managing Organizational Change	3
MGT 401	Family Business Management	3
	ONE course from the following list	3

Students majoring in HRM must complete a replacement course for MGT 373 as recommended by the department chair.

Study Plan (Major in Entrepreneurship and Family Business)

Fall (Year 1)

Item #	Title	Credits
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 101	Freshman English 1	3
MAT 100	Pre-calculus	3
OPM 101	Introduction to Computing	3
ECO 101	Microeconomics	3
COB 100	Student Orientation and Academic Success	1

Spring (Year 1)

Item #	Title	Credits
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2
ENG 112	Freshman English II	3
MAT 111	Business Calculus	3
ECO 102	Macroeconomics	3

Fall (Year 2)

Item #	Title	Credits
OPM 211	Business Statistics	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3
FIN 201	Principles of Finance	3
ACC 202	Introduction to Management Accounting	3
	Natural Science - I	3

Spring (Year 2)

Item #	Title	Credits
MKT 201	Principles of Marketing	3

OPM 230	Management Information Systems	3
MGT 230	Organizational Behavior	3
MGT 350	Human Resources Management	3
OPM 330	Quantitative Methods for Business	3
	Social Science - I	3

Fall (Year 3)

Item #	Title	Credits
MGT 301	Business Law	3
MGT 373	Negotiation	3
MGT 375	Introduction to Entrepreneurship	3
MGT 376	Entrepreneurial Finance	3
	Business Elective - I	3
	Natural Science - II	3

Spring (Year 3)

Item #	Title	Credits
BAN 310	Business Analytics and Visualization	3
MGT 393	Managing Organizational Change	3
MGT 395	Design Thinking	3
MGT 401	Family Business Management	3
	Social Science - II	3

BAN 310 used to be OPM 460. Also fine if a student completed OPM 460.

Fall (Year 4)

Item #	Title	Credits
MGT 490	Strategic Management	3
OPM 450	Management of Innovation	3
	Business Elective - II	3
	General Elective - I	3
	General Elective - II	3
MGT 300	Executive Lecture	1

Spring (Year 4)

Item #	Title	Credits
MGT 499/ HRM 498	COOP Training Internship	12

Finance

Program

College of Business
Major
Minor

Finance Major

Major Core Courses

Finance major students must complete all the courses below.

Item #	Title	Credits
ACC 301	Intermediate Financial Accounting I	3
FIN 320	Corporate Finance	3
FIN 350	Financial Markets and Institutions	3
FIN 310	Financial Modelling	3
FIN 410	Investments	3
ACC 390	Financial Statement Analysis and Valuation	3
FIN 420	International Finance	3
FIN 467	Banking Management	3
FIN 498	COOP Training Internship	12

Notes: *Students on old study plans (ACC 301) will need to complete OPM 340 as a common core course instead of ACC 301, (ACC 390) may choose to complete a Business elective (ACC 301 and ACC 390 may also be chosen as Business electives), (FIN 498) will need to complete FIN 499, which is 9 credit hours.*

Finance Minor

Minor Courses

Students from other majors can add a minor in Finance and must complete the following courses.

Item #	Title	Credits
FIN 310	Financial Modelling	3
FIN 320	Corporate Finance	3
FIN 350	Financial Markets and Institutions	3
FIN 410	Investments	3
	ONE course from the following list	3

Study Plan (Major in Finance)

Fall (Year 1)

Item #	Title	Credits
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 101	Freshman English 1	3
MAT 100	Pre-calculus	3
OPM 101	Introduction to Computing	3
ECO 101	Microeconomics	3
COB 100	Student Orientation and Academic Success	1

Students on old study plans are not required to complete **COB 100**.

Spring (Year 1)

Item #	Title	Credits
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2
ENG 112	Freshman English II	3
MAT 111	Business Calculus	3
ECO 102	Macroeconomics	3

Fall (Year 2)

Item #	Title	Credits
OPM 211	Business Statistics	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3
FIN 201	Principles of Finance	3
ACC 202	Introduction to Management Accounting	3
	Natural Science - I	3

Spring (Year 2)

Item #	Title	Credits
MKT 201	Principles of Marketing	3
OPM 230	Management Information Systems	3
MGT 230	Organizational Behavior	3
FIN 320	Corporate Finance	3
OPM 330	Quantitative Methods for Business	3
	Social Science - I	3

Fall (Year 3)

Item #	Title	Credits
MGT 301	Business Law	3
ACC 301	Intermediate Financial Accounting I	3
FIN 350	Financial Markets and Institutions	3
FIN 410	Investments	3
	Business Elective - I	3
	Natural Science - II	3

Students on old study plans need to complete **OPM 340** instead of **ACC 301**.

Spring (Year 3)

Item #	Title	Credits
BAN 310	Business Analytics and Visualization	3
FIN 310	Financial Modelling	3
ACC 390	Financial Statement Analysis and Valuation	3
FIN 420	International Finance	3
	Social Science - II	3

BAN 310 used to be **OPM 460**. Also fine if a student completed **OPM 460**.
Students on old study plans may choose a third business elective instead of **ACC 390.**

Fall (Year 4)

Item #	Title	Credits
MGT 490	Strategic Management	3
FIN 467	Banking Management	3
	Business Elective - II	3
	General Elective - I	3
	General Elective - II	3
MGT 300	Executive Lecture	1

FIN 467: Some students may have completed FIN 308 which is fine as well.

Spring (Year 4)

Item #	Title	Credits
FIN 498	COOP Training Internship	12

Students on old study plans complete **FIN 499** which is 9 credit hours.

Human Resource Management

Program
College of Business
Major
Minor

Human Resource Management Major

The major in Human Resource Management develops students who understand human behavior in organizations and how employees represent an asset that must be leveraged to generate organizational value.

With strong social awareness, students in this major learn how to handle various human resources management functions to implement organizational strategies with a critical understanding of professional practices in human resource management that are recognized internationally.

With theoretical foundation and hands-on practical experience, students learn the functional aspects of human resource management such as HR planning, compensation, recruitment, training and development, career planning, and performance management while emphasizing the integration of Human Resource management and organizational strategic planning process.

Our study plan covers topics that ensure the development of leadership skills to implement organizational effectiveness and manage organizational change.

Throughout their study, our students will have the opportunity to engage with HR professionals through departmental events and external networking opportunities.

Major Core Courses

Human Resource Management major must complete all the courses below.

Item #	Title	Credits
MGT 350	Human Resources Management	3
MGT 360	Employee learning and development	3
MGT 370	Human Resource Planning, Recruitment and Selection	3
MGT 373	Negotiation	3
MGT 383	Organizational Leadership	3
MGT 390	Total Reward Management	3
MGT 393	Managing Organizational Change	3
MGT 443	Comparative Management	3
MGT 499/ HRM 498	COOP Training Internship	12

Notes: *Students on old study plans (MGT 360) will need to complete OPM 340 as a common core course instead of MGT 360, (MGT 390) may choose to complete a Business elective (MGT 360 and MGT 390 may also be chosen as Business electives), (HRM 498) will need to complete HRM 499, which is 9 credit hours.*

Human Resources Management Minor

Minor Courses

Students from other majors can add a minor in HRM and must complete the following courses.

Item #	Title	Credits
MGT 350	Human Resources Management	3
MGT 370	Human Resource Planning, Recruitment and Selection	3
MGT 373	Negotiation	3
MGT 383	Organizational Leadership	3
	ONE course from the following list	3

Students majoring in EFB (Entrepreneurship and Family Business) must complete a replacement course for MGT 373 as recommended by the department chair.

Study Plan (Major in Human Resource Management)

Fall (Year 1)

Item #	Title	Credits
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 101	Freshman English 1	3
MAT 100	Pre-calculus	3
OPM 101	Introduction to Computing	3
ECO 101	Microeconomics	3
COB 100	Student Orientation and Academic Success	1

Students on old study plans are not required to complete COB 100.

Spring (Year 1)

Item #	Title	Credits
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2
ENG 112	Freshman English II	3
MAT 111	Business Calculus	3
ECO 102	Macroeconomics	3

Fall (Year 2)

Item #	Title	Credits
OPM 211	Business Statistics	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3
FIN 201	Principles of Finance	3
ACC 202	Introduction to Management Accounting	3
	Natural Science - I	3

Spring (Year 2)

Item #	Title	Credits
MKT 201	Principles of Marketing	3
OPM 230	Management Information Systems	3
MGT 230	Organizational Behavior	3
MGT 350	Human Resources Management	3
OPM 330	Quantitative Methods for Business	3
	Social Science - I	3

Fall (Year 3)

Item #	Title	Credits
MGT 301	Business Law	3
MGT 360	Employee learning and development	3
MGT 373	Negotiation	3
MGT 383	Organizational Leadership	3
	Business Elective - I	3
	Natural Science - II	3

Students on old study plans need to complete OPM 340 instead of MGT 360.

Spring (Year 3)

Item #	Title	Credits
BAN 310	Business Analytics and Visualization	3
MGT 370	Human Resource Planning, Recruitment and Selection	3
MGT 390	Total Reward Management	3
MGT 393	Managing Organizational Change	3
	Social Science - II	3

- BAN 310 used to be OPM 460. Also fine if a student completed OPM 460.
- Students on old study plans may choose a third business elective instead of MGT 390.

Fall (Year 4)

Item #	Title	Credits
MGT 490	Strategic Management	3
MGT 443	Comparative Management	3
	Business Elective - II	3
	General Elective - I	3
	General Elective - II	3
MGT 300	Executive Lecture	1

Spring (Year 4)

Item #	Title	Credits
MGT 499/ HRM 498	COOP Training Internship	12

Students on old study plans complete HRM 499 which is 9 credit hours.

Marketing

Program

College of Business

Major

Minor

Marketing Major

Major Core Courses

Marketing major must complete all the courses below. For double major, see general notes.

Item #	Title	Credits
MKT 301	E-Marketing	3
MKT 310	Consumer Behavior	3
MKT 315	Services Marketing	3
MKT 320	International Marketing	3
MKT 330	Marketing Research	3
MKT 401	Brand Strategy	3
MKT 410	Integrated Marketing Communications	3

MKT 420	Marketing Strategy	3
MKT 498	COOP Training Internship	12

Notes: *Students on old study plans (MKT 320) will need to complete OPM 340 as a common core course instead of MKT 320, (MKT 401) may choose to complete a Business elective (MKT 320 and MKT 401 may also be chosen as Business electives), (MKT 498) will need to complete MKT 499, which is 9 credit hours.*

Marketing Minor

Minor Courses

Students from other majors can add a minor in Marketing and must complete the following courses.

Item #	Title	Credits
MKT 310	Consumer Behavior	3
MKT 315	Services Marketing	3
MKT 330	Marketing Research	3
MKT 420	Marketing Strategy	3
	ONE course from the following list	3

Study Plan (Major in Marketing)

Fall (Year 1)

Item #	Title	Credits
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 101	Freshman English 1	3
MAT 100	Pre-calculus	3
OPM 101	Introduction to Computing	3
ECO 101	Microeconomics	3
COB 100	Student Orientation and Academic Success	1

Students on old study plans are not required to complete COB 100.

Spring (Year 1)

Item #	Title	Credits
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2
ENG 112	Freshman English II	3
MAT 111	Business Calculus	3
ECO 102	Macroeconomics	3

Fall (Year 2)

Item #	Title	Credits
OPM 211	Business Statistics	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3
MKT 201	Principles of Marketing	3
ACC 202	Introduction to Management Accounting	3
	Natural Science - I	3

Marketing students must take MKT 201 in the third semester.

Spring (Year 2)

Item #	Title	Credits
FIN 201	Principles of Finance	3
OPM 230	Management Information Systems	3
MGT 230	Organizational Behavior	3
MKT 301	E-Marketing	3
OPM 330	Quantitative Methods for Business	3
	Social Science - I	3

Fall (Year 3)

Item #	Title	Credits
MGT 301	Business Law	3
MKT 315	Services Marketing	3
MKT 310	Consumer Behavior	3
MKT 320	International Marketing	3
	Business Elective - I	3
	Natural Science - II	3

Students on old study plans need to complete OPM 340 instead of MKT 320.

Spring (Year 3)

Item #	Title	Credits
BAN 310	Business Analytics and Visualization	3
MKT 330	Marketing Research	3
MKT 401	Brand Strategy	3
MKT 410	Integrated Marketing Communications	3
	Social Science - II	3

- BAN 310 used to be OPM 460. Also fine if a student completed OPM 460.

- Students on old study plans may choose a third business elective instead of MKT 401.

Fall (Year 4)

Item #	Title	Credits
MGT 490	Strategic Management	3
MKT 420	Marketing Strategy	3
	Business Elective - II	3
	General Elective - I	3
	General Elective - II	3
MGT 300	Executive Lecture	1

Spring (Year 4)

Item #	Title	Credits
MKT 498	COOP Training Internship	12

Students on old study plans complete MKT 499 which is 9 credit hours.

Operations and Project Management

Program

College of Business

Major

Minor

Operations and Project Management Major

Major Core Courses

Operations and Project Management major must complete all the courses below. For double major, see general notes.

Item #	Title	Credits
OPM 310	Introduction to Project Management and Tools	3
OPM 340	Operations Management	3
OPM 360	Principles of Logistics and Supply Chain Management	3
OPM 370	Quality Management	3
OPM 380	Advanced Project Management	3
OPM 450	Management of Innovation	3
OPM 485	Project Risk Management	3
OPM 425	Special Topis in Operations Management	3
OPM 498	Operations and Project Management Internship	12

Notes: *Students on old study plans (OPM 425) may choose to complete a Business elective instead of OPM 425. OPM 425 may also be chosen as Business electives, (OPM 498) will need to complete OPM 499, which is 9 credit hours).*

Operations and Project Management Minor

Minor Courses

Students from other majors can add a minor in OPM and must complete the following courses.

Item #	Title	Credits
MGT 350	Human Resources Management	3
MGT 370	Human Resource Planning, Recruitment and Selection	3
MGT 373	Negotiation	3
MGT 383	Organizational Leadership	3
	ONE course from the following list	3

Study Plan (Major in Operations and Project Management)

Fall (Year 1)

Item #	Title	Credits
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 101	Freshman English 1	3
MAT 100	Pre-calculus	3
OPM 101	Introduction to Computing	3
ECO 101	Microeconomics	3
COB 100	Student Orientation and Academic Success	1

Students on old study plans are not required to complete **COB 100**.

Spring (Year 1)

Item #	Title	Credits
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2
ENG 112	Freshman English II	3
MAT 111	Business Calculus	3
ECO 102	Macroeconomics	3

Fall (Year 2)

Item #	Title	Credits
OPM 211	Business Statistics	3
MGT 201	Business Communication	3
MGT 210	Business Ethics	3
FIN 201	Principles of Finance	3
ACC 202	Introduction to Management Accounting	3
	Natural Science - I	3

Spring (Year 2)

Item #	Title	Credits
MKT 201	Principles of Marketing	3
OPM 230	Management Information Systems	3
MGT 230	Organizational Behavior	3
OPM 310	Introduction to Project Management and Tools	3
OPM 330	Quantitative Methods for Business	3
	Social Science - I	3

Fall (Year 3)

Item #	Title	Credits
MGT 301	Business Law	3
OPM 340	Operations Management	3
OPM 360	Principles of Logistics and Supply Chain Management	3
OPM 380	Advanced Project Management	3
	Business Elective - I	3
	Natural Science - II	3

Spring (Year 3)

Item #	Title	Credits
BAN 310	Business Analytics and Visualization	3
OPM 370	Quality Management	3
OPM 425	Special Topis in Operations Management	3
OPM 485	Project Risk Management	3
	Social Science - II	3

- BAN 310 used to be OPM 460. Also fine if a student completed OPM 460.
- Students on old study plans may choose another business elective instead of OPM 425.
- OPM 485 used to be OPM 480. Also fine if a student completed OPM 480.

Fall (Year 4)

Item #	Title	Credits
MGT 490	Strategic Management	3
OPM 450	Management of Innovation	3
	Business Elective - II	3
	General Elective - I	3
	General Elective - II	3
MGT 300	Executive Lecture	1

Spring (Year 4)

Item #	Title	Credits
OPM 498	Operations and Project Management Internship	12

Students on old study plans complete OPM 499 which is 9 credit hours.


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College of Engineering Vision and Mission

College of Engineering Vision

The College of Engineering aspires to be recognized for Engineering education, research and community service both nationally and internationally.

College of Engineering Mission

To deliver world-class engineering education at undergraduate and graduate levels, and enabling graduates to contribute to the welfare of Saudi Arabia and the world.

About College of Engineering

College of Engineering at Alfaisal University offers degree programs in five undergraduate engineering disciplines that answer the growing needs of Saudi Arabia in realizing its vision 2030. These programs include architectural, electrical, mechanical, industrial and software engineering, all of which are fully accredited by the Engineering Accreditation Commission of ABET.
With our newly offered concentration tracks and minors, our programs also allow for pursuing interests in emerging areas including artificial intelligence, cybersecurity, robotics, renewable energy, construction management, sustainable development, and digital design and manufacturing.

At the graduate level, we offer a masters program focused on engineering and system management – which is made in response to advances in decision making, analytics, and industry 4.0. This program is being offered in collaboration with the Centre for Complex Engineering Systems (CCES) at KACST (King Abdulaziz City for Science & Technology) and MIT (Massachusetts Institute of Technology).

Our distinguished faculty and effective industrial partnerships, college of engineering prepares engineers with the theory and practical application necessary to meet tomorrow's challenges.

All of this is possible through an environment that fosters innovation and creativity, continuously updated curricula, and emphasis on relatable and practical engineering education.

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College of Engineering Degree Programs

- Bachelor of Architectural Engineering
- Bachelor of Electrical Engineering
- Bachelor of Industrial Engineering
- Bachelor of Mechanical Engineering
- Bachelor of Software Engineering

Architectural Engineering

Program

College of Engineering

Major

Bachelor of Architectural Engineering Study Plan

Fall (Year 1)

Item #	Title	Credits
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
CHM 102	Introduction to Chemistry	3
CHM 102 L	Introduction to Chemistry lab	1
MAT 101	Calculus I	3
PHU 103	Mechanics and Waves for Engineers	3
PHU 103 L	Mechanics and Waves for Engineers Labs	1
ENG 101	Freshman English 1	3

Spring (Year 1)

Item #	Title	Credits
ARE 110	Architectural History and Theories	3
ARE 120	Drafting and Drawing	1
ARE 120-S	Drafting and Drawing Lab	2
ME 201	Materials Science and Engineering	3
ME 201 L	Materials Science and Engineering Lab	1
MAT 112	Calculus II	3
PHU 124	Electromagnetism and Waves for Engineers	3
PHU 124 L	Electromagnetism and Waves for Engineers Labs	1
ENG 112	Freshman English II	3

Fall (Year 2)

Item #	Title	Credits
ARE 201	Architectural Design I	3
ARE 231	Building Materials and Construction Technology	3
ARE 231 L	Building Materials and Construction Technology Lab	1
ARE 232	Building Construction	3
EE 207	Foundation of Electrical Engineering	3
EE 207 L	Foundation of Electrical Engineering Lab	1
ME 203	Applied Mechanics I: Statics	3
MAT 211	Calculus III	3

Spring (Year 2)

Item #	Title	Credits
ARE 202	Architectural Design II	3
ARE 220	Construction Drawing (CAD)	2
ARE 220 S	Construction Drawing (CAD) Studio	2
ARE 297	Architecture and Buildings	3
ME 206	Thermal Fluids Engineering I	3
ME 206 L	Thermal Fluids Engineering I Lab	1
ARB 101	Arabic Language I	2
ENG 222	Technical Writing	3

Fall (Year 3)

Item #	Title	Credits
ARE 303	Interior Design	2
ARE 303 S	Interior Design Studio	1
ARE 355	Quantity Surveying	3
ARE 341	The Built Environment	3
ME 407	Heating, Ventilation, and Air-Conditioning	3
MAT 212	Linear Algebra	3
MAT 213	Differential Equations	3
ISL 101	Islamic Studies I	2

Spring (Year 3)

Item #	Title	Credits
ARE 311	Building Acoustics	3
ARE 313	Electrical Installations	3
ARE 315	Lighting Systems and Applications	3
ARE 321	Structural Mechanics	3
ARE 321 L	Structural Mechanics Lab	1
ARE 232	Building Construction	3
ARE 332 L	Building Services Engineering Lab	1

Summer (Year 3)

Item #	Title	Credits
ARE 390	Architectural Engineering Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
ARE 405	Structural Analysis	3
ARE 409	Project Management and Economics	3
ARE 410	Contracts and Liabilities for Buildings and Construction	3
ARE 412	Environmental Management and Policy	3
	ARE *** - Technical Elective I	3
	ARE 4** - Technical Elective II	3
ARE 491	Architectural Engineering Capstone Project I	2

Spring (Year 4)

Item #	Title	Credits
ARE 406	Fundamentals of Reinforced Concrete Design	3
ARE 465	Management Principles in Building Engineering	3
ARE 492	Architectural Engineering Capstone Project II	2
	ARE 4 ** - Technical Elective III	3
MAT 224	Numerical Methods	3
ARB 112	Arabic Language II	2
ISL 112	Islamic Studies II	2

Technical Electives

Item #	Title	Credits
ARE 302	Indoor Air Quality Engineering	3
ARE 314	Architectural Design III	2
ARE 314 S	Architectural Design III Studio	1
ARE 400	Special Topics in Architectural Engineering	3
ARE 435	Undergraduate Research in Architectural Engineering	0
ARE 452	Soil Mechanics and Foundations	3
ARE 455	Sustainable Buildings	3
ARE 460	Waste Management in Buildings	3
ARE 470	Building Automation and Control	3
ARE 475	Building Energy Management	3

Architectural Engineering Tracks:

Construction Management Track

Construction management is primarily concerned with getting the project completed on time, budget and to the desired and stated specification. The course teaches the students how to manage and lead a construction project, using technical and leadership skills, within a multi-organizational team that work on a project's lifecycle. Construction Management looks at engineering management as a cohesive process, examining projects from initiation through to completion, directing, planning and scheduling and communication which are key for the project success. Students get grips with a wide range of project management tools and techniques that are commonly used in the industry. Students who successfully complete the course will have gained practical experience with project management, allowing them to excel within their current role or in the next job. The construction management course offers:

- Get a critical understanding of the social, economic and environmental issues commonly affecting construction problems and the practical

means to address them. Practical case studies will be presented to examine how project sites are equipped, manned and managed. Site visits will also be part of the teaching activities.
- Gain experience with important project management tools, techniques and software.
- Become contractually familiar with laws surrounding construction, particularly construction contract law.
- Examine case studies and develop appropriate project management processes and strategies.
- Gain an understanding of financial planning (planned and earned values).

Track Course Requirements (15 CRHs)

In addition to completing the core courses **ARE 409 – Project Management and Economics** and **ARE 465 – Management Principles in Building Engineering**, students should complete the following three technical electives courses:

Item #	Title	Credits
ARE 480	Construction Economics and Finance	3
ARE 482	Operation Analysis in Building Construction	3
ARE 484	Construction Professional Practice	3

Track Plan

Fall (Year 4)

Item #	Title	Credits
ARE 480	Construction Economics and Finance	3
ARE 482	Operation Analysis in Building Construction	3

Spring (Year 4)

Item #	Title	Credits
ARE 484	Construction Professional Practice	3

Sustainable Development Track

Reducing building energy consumption through adaptive and sustainable design has become a basic criterion of architectural practice. The aim of this track is to deepen students' understanding and knowledge about basic principles and best practices of sustainability and high-performance buildings. Through this track, students will be able to develop problem-solving skills and market-driven solutions, which will help them become leaders in sustainable design and better serve their society. Emphasis will be placed on the analysis of the environmental impacts of buildings, and how we can mitigate these impacts through various and innovative design solutions/ practices.

Through three electives students will be equipped with knowledge related to creating sustainable building structures and using processes and systems that are environmentally responsible and resource-efficient. These courses will address a full range of issues associated with sustainable building including energy and water efficiency, materials, waste and storm-water management, and the building operational efficiency in relation to the use of advanced and smart technologies. There will be also a focus on principles of smart (IoT) and green building systems, and how the components of these two systems can integrate and interact with one another.

Track Course Requirements (15 CRHs)

In addition to completing the core courses **ARE 341 – The Built Environment** and **ARE 412 – Environmental Management and Policy**, students should complete the following three technical electives courses:

Item #	Title	Credits
ARE 455	Sustainable Buildings	3
ARE 475	Building Energy Management	3
ARE 477	Smart Buildings	3

Track Plan

Fall (Year 4)

Item #	Title	Credits
ARE 455	Sustainable Buildings	3
ARE 475	Building Energy Management	3

Spring (Year 4)

Item #	Title	Credits
ARE 477	Smart Buildings	3

Electrical Engineering

Program

College of Engineering

Major

Bachelor of Electrical Engineering Study Plan

Fall (Year 1)

Item #	Title	Credits
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
CHM 102	Introduction to Chemistry	3
CHM 102 L	Introduction to Chemistry lab	1
MAT 101	Calculus I	3
PHU 103	Mechanics and Waves for Engineers	3
PHU 103 L	Mechanics and Waves for Engineers Labs	1
ENG 101	Freshman English 1	3

Spring (Year 1)

Item #	Title	Credits
ME 201	Materials Science and Engineering	3
ME 201 L	Materials Science and Engineering Lab	1
MAT 112	Calculus II	3
PHU 124	Electromagnetism and Waves for Engineers	3
PHU 124 L	Electromagnetism and Waves for Engineers Labs	1
ARB 101	Arabic Language I	2
ENG 112	Freshman English II	3

Fall (Year 2)

Item #	Title	Credits
EE 207	Foundation of Electrical Engineering	3
EE 207 L	Foundation of Electrical Engineering Lab	1
MAT 211	Calculus III	3
MAT 212	Linear Algebra	3
MAT 213	Differential Equations	3
ISL 101	Islamic Studies I	2
ENG 222	Technical Writing	3

Spring (Year 2)

Item #	Title	Credits
EE 208	Electric Circuits	3
EE 209	Applied Electromagnetics	3
EE 210	Digital Logic Systems	3
EE 210 L	Digital Logic Systems Lab	1
MAT 224	Numerical Methods	3
STA 212	Probability and Statistics for Engineers	3
ARB 112	Arabic Language II	2

Fall (Year 3)

Item #	Title	Credits
EE 301	Signals and Systems	3
EE 303	Introduction to Electronics	3
EE 303 L	Introduction to Electronics Lab	1
EE 305	Computer Networks	3
EE 305 L	Computer Networks Lab	1
EE 307	Computer Architecture	3
EE 307 L	Computer Architecture Lab	1
ISL 112	Islamic Studies II	2

Spring (Year 3)

Item #	Title	Credits
EE 302	Communications Theory	3
EE 302 L	Communications Theory Lab	1
EE 304	Microelectronics	3
EE 304 L	Microelectronics Lab	1
EE 306	Control and Feedback System Design	3
EE 306 L	Control and Feedback System Design Lab	1
EE 308	Electrical Energy Conversion	3
EE 308 L	Electrical Energy Conversion Lab	1
IE 315	Engineering Economy and Cost Analysis	3

Summer Internship

Item #	Title	Credits
EE 390	Electrical Engineering Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
EE 405	Electric Power Systems	3
EE 413	Digital Communications	3
EE 413 L	Digital Communications Lab	1

EE 495	Electrical Engineering Capstone Project I	3
	EE 4** - Technical Elective	3
	EE 4** - Technical Elective	3
	EE 4** L - Technical Elective Lab	1

Spring (Year 4)

Item #	Title	Credits
EE 496	Electrical Engineering Capstone Project II	3
	EE 4** - Technical Elective	3
	EE 4** - Technical Elective	3
	EE 4** L - Technical Elective Lab	1
	EE 4** - Technical Elective	3
	EE 4** L - Technical Elective Lab	1

Technical Electives

Item #	Title	Credits
EE 401	Special Topics in Electrical Engineering	3
EE 401 L	Special Topics in Electrical Engineering Lab	1
EE 402	Introduction to Wireless Networks	3
EE 403	Wireless Communications	3
EE 403 L	Wireless Communications Lab	1
EE 404	Data Engineering in Electrical Systems	3
EE 404 L	Data Engineering in Electrical Systems Lab	1
EE 406	Digital Electronics	3
EE 406 L	Digital Electronics Lab	1
EE 408	Communication Electronics	3
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
EE 411	Internet of Things	3
EE 412	Nanoelectronics	3
EE 412 L	Nanoelectronics Lab	1
EE 417	Digital Signal Processing	3
EE 417 L	Digital Signal Processing Lab	1
EE 418	Digital Image Processing	3
EE 418 L	Digital Image Processing Lab	1
EE 420	Power Electronics	3
EE 420 L	Power Electronics Lab	1
EE 422	Antennas and Wave Propagation	3
EE 423	Optical Fiber Communication Systems	3
EE 424	Optoelectronics	3
EE 424 L	Optoelectronics Lab	1
EE 425	Microwave Engineering	3
EE 426	Renewable Energy	3
EE 427	Digital Control	3
EE 428	Modern Control Theory	3
EE 435	Undergraduate Research in Electrical Engineering	3
EE 440	Machine Learning	3
EE 440 L	Machine Learning Lab	1
EE 444	Artificial Intelligence	3
EE 481	Innovations and Entrepreneurship in Engineering	3

Electrical Engineering Tracks:

All EE students have the opportunity of selecting their electives in the fourth year according to their desired academic objective in consultation with their academic advisor. Regular, non-track students select any of the offered EE electives in the fourth year, specifically, three electives with a lab and two electives without a lab. Students also have the option to follow one of the three tracks in the program, namely, Robotics & AI, Renewable Energy, or Innovation & Entrepreneurial tracks.

Whether selecting the regular program or one of the three tracks, the total credits of these electives is 18 CRHs. All offered technical electives are available for regular non-track students, whether or not they are associated with a given track. In summary, all EE students follow the same curriculum and take the same required courses, with the difference being the designation of the electives in the fourth year. A regular non-track student would have the electives distribution in the fourth year as shown in the above listed study plan. Per standing policy, and with the approval of the department chair, a student may opt to take one of the 3 CRH technical electives from another engineering program.

Robotics & AI Track

Robots are automated machines that can assist humans in a variety of settings, from manufacturing processes, to working in critical conditions, unsuitable for human life. Robotics specialists aim to achieve diverse tasks by designing mechanical devices, able to complete them intelligently. Studying robotics, students will acquire information related to computer gadgetry, mobile robot programming, robotic motion

methods, mathematical algorithms, social implications of technology, and more. Apart from learning specific scientific methods, graduates will gain skills that involve mathematical thinking but also artistic vision. Robotics will prepare specialists in competencies such as technology design, programming, repairing and installing equipment for machines, etc. Career paths in robotics cover a large subject palette, from medicine to engineering and IT. Robotics graduates usually engage in jobs as laboratory assistants, testing technicians, quality assurance staff, programmers, systems controllers, or researchers.

Track Course Requirements

In addition to completing the core course: **EE 306 + L – Control and Feedback System Design**, students should complete the following four courses.

Item #	Title	Credits
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
EE 411	Internet of Things	3
EE 440	Machine Learning	3
EE 440 L	Machine Learning Lab	1
EE 444	Artificial Intelligence	3

The student will need to further complete the program's elective requirements and have a capstone project themed according to the track.

Track Plan

Fall (Year 4)

Item #	Title	Credits
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
	EE 444 or SE 444	3

Spring (Year 4)

Item #	Title	Credits
EE 440	Machine Learning	3
EE 440 L	Machine Learning Lab	1
EE 411	Internet of Things	3
	EE 4** - Technical Elective	3
	EE 4** L - Technical Elective Lab	1

Renewable Energy Track

The Renewable Energy track offered at Alfaisal University is a specialization within electrical engineering concerning the generation of electrical power from a wide range of renewables. The track addresses the major topics related to power plant planning, theory and practical design of renewable and non-renewable sources, integration with the power grid, and engineering economy factors of design and deployment. Renewable energy resources covered include a wide array of established and experimental phase plants including solar, wind, hydro, tidal, wave, biomass and geothermal. This is in addition to energy storage technologies such as fuel cells and pumped hydro. The integration of these energy sources into the power grid with the power electronics theory and practice is also emphasized.

As well as having multiple technical and transferable skill competencies, graduates will gain strong analytical skills, and have the ability to lead complex design projects. Electrical renewable energy engineers have a wide range of employment opportunities across the power generation, conversion, distribution, and management sectors, including power utilities, factories, consultancy firms as well as the domestic markets where renewable energy systems are now commonly sought and deployed.

Track Course Requirements

In addition to completing the core course: **EE 308 + L – Electrical Energy Conversion and EE 405 Electric Power Systems**, students should complete the following four courses as technical electives:

Item #	Title	Credits
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
EE 420	Power Electronics	3
EE 420 L	Power Electronics Lab	1
EE 426	Renewable Energy	3
EE 426 L	Renewable Energy Lab	1
IE 450	Management for Engineers	3

The student will need to further complete the program's elective requirements, and have a capstone project themed according to the track.

Track Plan

Fall (Year 4)

Item #	Title	Credits
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
EE 420	Power Electronics	3
EE 420 L	Power Electronics Lab	1

Spring (Year 4)

Item #	Title	Credits
EE 426	Renewable Energy	3
EE 426 L	Renewable Energy Lab	1
IE 450	Management for Engineers	3
	EE 4** - Technical Elective	3

Innovation & Entrepreneurial Track

When it comes to pursuing a career in engineering, whether it is resources engineering, sustainable materials or even innovative recycling, specialist skills and knowledge are vital if you want to stand out compared to other job candidates. Much like every other industry in the world, the electrical engineering landscape is evolving at a rapid rate, and so the demand for engineers with an innovative and entrepreneurial mindset has never been greater. Innovation and entrepreneurship are key drivers in today's engineering world, and the push for sustainable products, services and technologies is needed now more than ever.

Electrical Engineers work to improve society, and not just for the benefit of the local community, but the planet as a whole. Over the last few years, there has been a rise in developing sustainable innovative solutions, from e-mobility and new battery technologies for greener, more sustainable cities, to communications and robotics for a digital industry 4.0. Without innovation in these areas, modern life would not be possible. With this track, you will develop your expertise in Innovation and entrepreneurship; adding to this your in-depth engineering know-how and you will be well on your way to a career in research, industrial innovation, or even starting up your own business.

Track Course Requirements

In addition to completing the core course: **IE 315 – Engineering Economy and Cost Analysis**, students should complete the following four courses as technical electives:

Item #	Title	Credits
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
EE 440	Machine Learning	3
EE 440 L	Machine Learning Lab	1
EE 481	Innovations and Entrepreneurship in Engineering	3
IE 450	Management for Engineers	3

The student will need to further complete the program's elective requirements and have a capstone project themed according to the track.

Track Plan

Fall (Year 4)

Item #	Title	Credits
EE 410	Cyber Physical Systems	3
EE 410 L	Cyber Physical Systems Lab	1
EE 481	Innovations and Entrepreneurship in Engineering	3

Spring (Year 4)

Item #	Title	Credits
IE 450	Management for Engineers	3
EE 440	Machine Learning	3
EE 440 L	Machine Learning Lab	1
	EE 4** - Technical Elective	3
	EE 4** L - Technical Elective Lab	1

Industrial Engineering

Program

College of Engineering

Major

Minor

Bachelor of Industrial Engineering Study Plan

Fall (Year 1)

Item #	Title	Credits
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
CHM 102	Introduction to Chemistry	3
CHM 102 L	Introduction to Chemistry lab	1

MAT 101	Calculus I	3
PHU 103	Mechanics and Waves for Engineers	3
PHU 103 L	Mechanics and Waves for Engineers Labs	1
ENG 101	Freshman English 1	3

Spring (Year 1)

Item #	Title	Credits
ME 201	Materials Science and Engineering	3
ME 201 L	Materials Science and Engineering Lab	1
MAT 112	Calculus II	3
PHU 124	Electromagnetism and Waves for Engineers	3
PHU 124 L	Electromagnetism and Waves for Engineers Labs	1
ARB 101	Arabic Language I	2
ENG 112	Freshman English II	3

Fall (Year 2)

Item #	Title	Credits
ME 203	Applied Mechanics I: Statics	3
ME 205	Introduction to Computer Aided Design	3
ME 305	Manufacturing and Workshop Training	3
ME 305 L	Manufacturing and Workshop Training Lab	1
MAT 211	Calculus III	3
MAT 212	Linear Algebra	3
MAT 213	Differential Equations	3

Spring (Year 2)

Item #	Title	Credits
EE 207	Foundation of Electrical Engineering	3
EE 207 L	Foundation of Electrical Engineering Lab	1
ME 206	Thermal Fluids Engineering I	3
ME 206 L	Thermal Fluids Engineering I Lab	1
ME 208	Mechanics of Materials I	3
ME 208 L	Mechanics of Materials I Lab	1
MAT 224	Numerical Methods	3
STA 212	Probability and Statistics for Engineers	3

Fall (Year 3)

Item #	Title	Credits
IE 301	Operations Research I	3
IE 304	Production and Service Systems Planning I	3
IE 307	Work Systems Analysis and Design	3
IE 307 L	Work Systems Analysis and Design Lab	1
IE 309	Human Factors and Ergonomics	3
IE 309 L	Human Factors and Ergonomics Lab	1
ENG 222	Technical Writing	3
ISL 101	Islamic Studies I	2

Spring (Year 3)

Item #	Title	Credits
IE 302	Operations Research II	3
IE 305	Production and Service Systems Planning II	3
IE 315	Engineering Economy and Cost Analysis	3
IE 330	Simulation	3
IE 330 L	Simulation Lab	1
ME 308	Advanced Manufacturing Processes	3
ME 308 L	Advanced Manufacturing Processes Lab	1

Summer (Year 3)

Item #	Title	Credits
IE 390	Industrial Engineering Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
IE 401	Network Models and Project Management	3
IE 415	Production Information Systems	3
	IE 4-- (any 400-level course) Technical Elective	3
	IE 4-- (any 400-level course) Technical Elective	3
IE 495	Industrial Engineering Capstone Project I	3
ISL 112	Islamic Studies II	2

Spring (Year 4)

Item #	Title	Credits
IE 406	Quality Engineering	3
IE 450	Management for Engineers	3
	IE 4-- (any 400-level course) Technical Elective	3
IE 496	Industrial Engineering Capstone Project II	3
ME 306	Instrumentation and Control Engineering	3
ME 306 L	Instrumentation and Control Engineering Lab	1
ARB 112	Arabic Language II	2

Technical Electives

Item #	Title	Credits
IE 400	Special Topics in Industrial Engineering	3
IE 420	Reliability and Maintenance Engineering	3
IE 421	Product Design and Development	3
	IE 4-- (any 400-level course) Technical Elective	3
IE 430	New Product Development	3
IE 435	Undergraduate Research in Industrial Engineering	3
IE 440	Heuristic Methods for Optimization	3
IE 455	Cognitive Ergonomics	3
IE 460	Industrial IoT	3

Industrial Engineering Track: Digital Design and Manufacturing

Industrial Engineering (IE) students have the option to select electives in the fourth year according to their desired academic objective in consultation with their academic advisor. Regular non-track students select any three of the offered IE electives in the fourth year. IE students also have the option to follow the Digital Design and Manufacturing track in the program. Irrespective of whether a student opts for the Digital Design and Manufacturing track or not, the total credits for electives must be 9 CRHs. All offered technical electives are available for regular non-track students, whether they opt for the track or not.

In summary, all IE students follow the same curriculum and take the same required courses, with the difference being the designation of the electives in the fourth year.

Per standing policy, and with the approval of the department chair, a student may opt to take one of the 3 CRH technical electives from another engineering program.

Digital Design and Manufacturing Track

The industrial and information revolutions made tremendous impact on manufacturing and communication systems of today. Technologies developed in those revolutions are fusing into a new industrial revolution now known as Industry 4.0 where digital information is inherent in manufacturing activities. Industry 4.0 changes the way products are designed and manufactured today and will revolutionize product development in future.

Industrial Engineering (IE) department, in conjunction with the Mechanical Engineering (ME) department, offers the Digital Design and Manufacturing track to prepare students for Industry 4.0. Students opting for this track will gain focused knowledge by taking electives offered by ME and IE departments in this interdisciplinary area.

Track Course Requirements

Students must complete the following (6 CRHs) core courses:

Item #	Title	Credits
ME 308	Advanced Manufacturing Processes	3
IE 315	Engineering Economy and Cost Analysis	3
	Students will need to complete three courses (9 CRHs) from this list	9

A student opting for the Digital Design and Manufacturing track can take two and one electives in the Fall and Spring semesters, respectively or vice versa based on electives distribution in the fourth year.

Minor in Industrial Engineering (for ME students)

IE department offers a minor in Industrial Engineering which is open to ME students only. Students opting for this minor will gain concentrated knowledge by taking advanced IE courses.

Students taking the IE minor are expected to take additional 15 CRHs on top of their existing ME study plan courses from the following list of existing ME courses:

Required Courses

6 CRHs

Item #	Title	Credits
IE 301	Operations Research I	3
IE 304	Production and Service Systems Planning I	3

Optional Courses

Select 9 CRHs

Item #	Title	Credits
IE 307	Work Systems Analysis and Design	3
IE 307 L	Work Systems Analysis and Design Lab	1
IE 315	Engineering Economy and Cost Analysis	3
IE 330	Simulation	3
IE 330 L	Simulation Lab	1
IE 406	Quality Engineering	3
IE 450	Management for Engineers	3

General Guidelines

1. The student must complete a total of additional 15 CRHs from IE department
2. Entry Point: Nominally before or at end of Year 2 (sophomore-level) to allow for sufficient time to complete all the courses.
3. The student must have a minimum GPA of 3.25. Admission to the minor is subject to the approval of the ME and IE departments.
4. The student should complete the main degree requirements before starting the minor.
5. Any of the pre-approved courses can be taken whenever the course is offered by IE department and subject to prevailing academic regulations.
6. Lab courses cannot be taken on their own. A Lab course has to be taken with or after the corresponding course has been taken.
7. Completion of a minor program is posted on the transcript alongside the main major. Minor programs are not noted on diplomas.

Mechanical Engineering

Program

College of Engineering

Major

Minor

Bachelor of Mechanical Engineering Study Plan

Fall (Year 1)

Item #	Title	Credits
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
CHM 102	Introduction to Chemistry	3
CHM 102 L	Introduction to Chemistry lab	1
MAT 101	Calculus I	3
PHU 103	Mechanics and Waves for Engineers	3
PHU 103 L	Mechanics and Waves for Engineers Labs	1
ENG 101	Freshman English 1	3

Spring (Year 1)

Item #	Title	Credits
ME 201	Materials Science and Engineering	3
ME 201 L	Materials Science and Engineering Lab	1
MAT 112	Calculus II	3
PHU 124	Electromagnetism and Waves for Engineers	3
PHU 124 L	Electromagnetism and Waves for Engineers Labs	1
ARB 101	Arabic Language I	2
ENG 112	Freshman English II	3

Year 2 (Fall)

Item #	Title	Credits

ME 203	Applied Mechanics I: Statics	3
ME 205	Introduction to Computer Aided Design	3
ME 305	Manufacturing and Workshop Training	3
ME 305 L	Manufacturing and Workshop Training Lab	1
MAT 211	Calculus III	3
MAT 212	Linear Algebra	3
MAT 213	Differential Equations	3

Spring (Year 2)

Item #	Title	Credits
ME 208	Mechanics of Materials I	3
ME 208 L	Mechanics of Materials I Lab	1
ME 216	Fluid Mechanics	3
ME 216 L	Fluid Mechanics Lab	1
EE 207	Foundation of Electrical Engineering	3
EE 207 L	Foundation of Electrical Engineering Lab	1
MAT 224	Numerical Methods	3
STA 212	Probability and Statistics for Engineers	3

Fall (Year 3)

Item #	Title	Credits
ME 311	Applied Mechanics II: Dynamics	3
ME 312	Mechanics of Materials II	3
ME 312 L	Mechanics of Materials II Lab	1
ME 315	Machine Design	3
ME 316	Engineering Thermodynamics	3
ENG 222	Technical Writing	3

Spring (Year 3)

Item #	Title	Credits
ME 306	Instrumentation and Control Engineering	3
ME 306 L	Instrumentation and Control Engineering Lab	1
ME 308	Advanced Manufacturing Processes	3
ME 308 L	Advanced Manufacturing Processes Lab	1
ME 310	Mechanical Component Design	3
ME 310 L	Mechanical Component Design Lab	1
ME 317	Heat and Mass Transfer	3
ME 317 L	Heat and Mass Transfer Lab	1
ISL 101	Islamic Studies I	2

Summer (Year 3)

Item #	Title	Credits
ME 390	Mechanical Engineering Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
ME 403	Finite Element Modelling for Dynamic and Structural Analysis	3
ME 403 L	Finite Element Modelling for Dynamic and Structural Analysis	1
ME 407	Heating, Ventilation, and Air-Conditioning	3
	ME 4** Technical Elective	3
ME 495	Mechanical Engineering Capstone Project I	3
ISL 112	Islamic Studies II	2

Spring (Year 4)

Item #	Title	Credits
	ME 4** Technical Elective	3
	ME 4** Technical Elective	3
ME 496	Mechanical Engineering Capstone Project II	3
IE 315	Engineering Economy and Cost Analysis	3
ARB 112	Arabic Language II	2

Technical Electives

Item #	Title	Credits
ME 314	Vibration and Damping	3
ME 400	Special Topics in Mechanical Engineering	3
ME 401	Computational Fluid Dynamics and Heat Transfer	3
ME 405	Engineering Safety and Risk Analysis	3
ME 406	Mechatronics	3
ME 410	Energy Conversion and Cogeneration Systems	3
ME 412	Renewable Energy Systems	3
ME 414	Introduction to Compressible Flow Turbomachinery	3

ME 415	Incompressible Flow Machines	3
ME 416	Automotive Engineering	3
ME 418	Water Desalination	3
ME 419	Product Design and Development	3
ME 420	Advanced Visualization and Simulation	3
ME 422	Corrosion Engineering	3
ME 435	Undergraduate Research in Mechanical Engineering	3

Mechanical Engineering Track: Digital Design and Manufacturing

ME students have the option to select electives in the fourth year according to their desired academic objective in consultation with their academic advisor. Regular, non-track students select any three of the offered ME electives in the fourth year. ME students also have the option to follow the Digital Design and Manufacturing track in the program. Irrespective of whether a student opts for the Digital Design and Manufacturing track or not, the total credits for electives must be 9 CRHs. All offered technical electives are available for regular non-track students, whether they opt for the track or not.

In summary, all ME students follow the same curriculum and take the same required courses, with the difference being the designation of the electives in the fourth year.

Per standing policy, and with the approval of the department chair, a student may opt to take one of the 3 CRH technical electives from another engineering program.

Digital Design and Manufacturing Track (for IE students only)

The industrial and information revolutions made tremendous impact on manufacturing and communication systems of today. Technologies developed in those revolutions are fusing into a new industrial revolution now known as Industry 4.0 where digital information is inherent in manufacturing activities. Industry 4.0 changes the way products are designed and manufactured today and will revolutionize product development in future.

ME department, in conjunction with the Industrial Engineering (IE) department, offers the Digital Design and Manufacturing track to prepare students for Industry 4.0. Students opting for this track will gain focused knowledge by taking electives offered by ME and IE departments in this interdisciplinary area.

Track Course Requirements

Students must complete the following (6 CRHs) core courses:

Item #	Title	Credits
ME 308	Advanced Manufacturing Processes	3
IE 315	Engineering Economy and Cost Analysis	3
	Students will need to complete three courses (9 CRHs) from this list	9

A student opting for the Digital Design and Manufacturing track can take two and one electives in the Fall and Spring semesters, respectively or vice versa.

Minor in Mechanical Engineering (for IE students)

ME department offers a minor in Mechanical Engineering which is open to IE students only. Students opting for this minor will gain concentrated knowledge by taking advanced ME courses.

Minor Course Requirements

IE students taking the minor are expected to take additional 15 CRHs on top of their existing IE study plan courses from the following list of existing ME courses:

Item #	Title	Credits
ME 307	Thermal Fluids Engineering II	3
ME 307 L	Thermal Fluids Engineering II Lab	1
ME 310	Mechanical Component Design	3
ME 310 L	Mechanical Component Design Lab	1
ME 311	Applied Mechanics II: Dynamics	3
ME 312	Mechanics of Materials II	3
ME 312 L	Mechanics of Materials II Lab	1
ME 315	Machine Design	3
ME 407	Heating, Ventilation, and Air-Conditioning	3

General Guidelines

1. The student must complete a total of additional 15 CRHs from IE department
2. Entry Point: Nominally before or at end of Year 2 (sophomore-level) to allow for sufficient time to complete all the courses.
3. The student must have a minimum GPA of 3.25. Admission to the minor is subject to the approval of the ME and IE departments.
4. The student should complete the main degree requirements before starting the minor.
5. Any of the pre-approved courses can be taken whenever the course is offered by IE department and subject to prevailing academic regulations.
6. Lab courses cannot be taken on their own. A Lab course has to be taken with or after the corresponding course has been taken.
7. Completion of a minor program is posted on the transcript alongside the main major. Minor programs are not noted on diplomas.

Software Engineering

Program

College of Engineering

Major

Bachelor of Software Engineering Study Plan

Fall (Year 1)

Item #	Title	Credits
SE 100	Programming for Engineers	3
SE 100 L	Programming for Engineers Lab	1
CHM 102	Introduction to Chemistry	3
CHM 102 L	Introduction to Chemistry lab	1
MAT 101	Calculus I	3
PHU 103	Mechanics and Waves for Engineers	3
PHU 103 L	Mechanics and Waves for Engineers Labs	1
ENG 101	Freshman English 1	3

Spring (Year 1)

Item #	Title	Credits
SE 117	Software Practice and Society	3
SE 120	Object-Oriented Programming I	3
SE 120 L	Object-Oriented Programming I Lab	1
MAT 112	Calculus II	3
PHU 124	Electromagnetism and Waves for Engineers	3
PHU 124 L	Electromagnetism and Waves for Engineers Labs	1
ENG 112	Freshman English II	3

Fall (Year 2)

Item #	Title	Credits
SE 201	Introduction to Software Engineering	3
SE 214	Algorithms and Data Structures	3
SE 214 L	Algorithms and Data Structures Lab	1
SE 220	Object-Oriented Programming II	3
SE 220 L	Object-Oriented Programming II Lab	1
MAT 212	Linear Algebra	3
ENG 222	Technical Writing	3

Spring (Year 2)

Item #	Title	Credits
SE 212	Discrete Structures for Software Engineers	3
SE 225	Software Requirements	3
SE 225 L	Software Requirements Lab	1
EE 210	Digital Logic Systems	3
EE 210 L	Digital Logic Systems Lab	1
MAT 224	Numerical Methods	3
STA 212	Probability and Statistics for Engineers	3

Fall (Year 3)

Item #	Title	Credits
SE 310	Software Design and Architecture	3
SE 312	Database Management Systems	3
SE 312 L	Database Management Systems Lab	1
SE 314	Operating Systems	3
SE 314 L	Operating Systems Lab	1
EE 305	Computer Networks	3
EE 305 L	Computer Networks Lab	1
ISL 101	Islamic Studies I	2

Spring (Year 3)

Item #	Title	Credits
SE 322	Internet of Things Application Development	3
SE 324	Web Application Development	3
SE 324 L	Web Application Development Lab	1
SE 328	Mobile Application Development	3
SE 328 L	Mobile Application Development Lab	1
SE 330	Introduction to Cybersecurity	3
ARB 101	Arabic Language I	2

Summer (Year 3)

Item #	Title	Credits
SE 390	Software Engineering Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
SE 412	Software Testing and Quality Assurance	3
SE 414	Software Project Management	3
	SE 4** Technical Elective	3
	SE 4** Technical Elective	3
SE 495	Software Engineering Capstone Project I	3
ISL 112	Islamic Studies II	2

Spring (Year 4)

Item #	Title	Credits
SE 423	Software Construction and Processes	3
	SE 4** Technical Elective	3
	SE 4** Technical Elective	3
SE 496	Software Engineering Capstone Project II	3
ARB 112	Arabic Language II	2

Technical Electives

Item #	Title	Credits
SE 435	Undergraduate Research in Software Engineering	3
SE 440	Special Topics in Software Engineering	3
SE 441	Telecommunications Software Design	3
SE 442	Social Networks for Software Engineers	3
SE 443	Cloud Computing for Software Engineers	3
SE 444	Artificial Intelligence	3
SE 445	Information and Software Security	3
SE 446	Introduction to Big Data	3
SE 447	Introduction to Machine Learning	3
SE 448	Blockchain Development	3
SE 449	Data Analytics	3
SE 450	Cryptography and Data Privacy	3
SE 451	Secure Software Engineering	3
SE 452	Network Security	3
SE 453	Security Risk Management & Control	3
SE 454	Ethical Hacking and Systems Defense	3

Software Engineering Tracks

AI & Big Data Track

The world is growing at an exponential rate and so is the size of the data collected across the globe. Current and future sources of data are devices which utilize the Internet of Things (IoT) technology in addition to social networks and business applications. Big data infrastructure and analytics are emerging as key concepts to sorting, managing analyzing this massive amount of generated data from connected objects and applications which helps to take the initiative to improve decision making. Thus, data is becoming more meaningful and contextually relevant, breaking new grounds for new computing concepts such as Machine Learning (ML) and Artificial Intelligence (AI). These concepts will introduce a new approach to shift the traditional computing concepts related to data from just collecting structured data to understanding it, to turning this massive amount of data into knowledge, conclusions, and intelligent actions.

In this track, students will be able to study new emerging technologies in the area of Artificial Intelligence and Big Data. Students enrolled in the Software Engineering program are eligible to register in this track.

Track Course Requirements (15 CRHs)

The following are the core courses required in the AI and Big Data track:

Item #	Title	Credits
SE 322	Internet of Things Application Development	3
SE 444	Artificial Intelligence	3
SE 446	Introduction to Big Data	3
SE 447	Introduction to Machine Learning	3
	One additional course may be taken from this list of track electives	3

Cybersecurity Track

Security is a forefront concern for software vendors and customers and an indispensable quality attribute of software given the high level of interconnectivity of systems running critical software functions and storing confidential data. There is a multitude of attacks that attempt to exploit software systems to gain illegitimate access to functionalities and data. Despite the continuous exposure to threat, software systems cannot simply seize operations as a countermeasure and they are expected to be available and deliver business value to its stakeholders reliably. The Software Engineering Department, part of the College of Engineering at Alfaisal University has approved a cybersecurity track. This track will equip students with the necessary skills and respond to challenges in cybersecurity, data privacy, network security, socio-technical issues in addition to learning how to develop secure systems by practicing proper secure software engineering principles. Students in the Bachelor of Software Engineering program at Alfaisal University are eligible to opt for this track.

Track Course Requirements (15 CRHs)

The following are the core courses required in the Cybersecurity track:

Item #	Title	Credits
SE 330	Introduction to Cybersecurity	3
SE 450	Cryptography and Data Privacy	3
SE 452	Network Security	3
SE 454	Ethical Hacking and Systems Defense	3
	One additional course may be taken from this list of track electives	3


Faces of Alfaisal
جامعة الفيصل

College of Law & International Relations

College of Law & International Relations General Information

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Message from the College Dean

Welcome to Alfaisal Law School – an international community of students and scholars with a unique comparative perspective to the study of Law.

Since its inception, Alfaisal Law School is considered as a premier regional center for international legal studies and research. Alfaisal Law School brings together leading regional and international scholars, researchers, and members of the legal profession to provide students with a range of transformative experiences, both inside and outside the classroom.

Saudi Arabia has taken the lead in numerous legal developments, such as the codification of Islamic jurisprudence opinions to make Islamic law more accessible and applicable in international trade and finance. Such developments cannot be successful without the use of legal research in comparative law to cover many areas of legal studies. This is the basis of the innovative approach of Alfaisal Law School to the study of Law.

Our LLB program includes the core subjects of key jurisdictions that will enhance Alfaisal University's position as a valued partner with well-known universities and professional bodies in some common law jurisdictions. Consequently, the program will permit our students to pursue opportunities in the legal profession, not only within the Kingdom of Saudi Arabia but in other jurisdictions as well.

At the same time, our students will gain an Islamic-Saudi perspective, a comparative perspective, and an international perspective in all subjects taught within our law program. Our students will have the opportunity to work with the Saudi government and its agencies, at local and international law firms, as well as with regional and international organizations since the international law and diplomacy track prepares our graduates to work in this field.

When you pursue your studies at Alfaisal Law School, you will join a judicious student body that is deeply committed to studying law and developing life-long friendships as well as professional relationships. Immersion in legal studies at Alfaisal Law School permits students to delve into career opportunities, serve the public, and discuss the most important topics of the day.

I invite you to explore all aspects of our Alfaisal Law School through our website. We are always looking for the next generation of students to join our future LLB and research programs, and we would welcome the opportunity to talk further with you about studying at Alfaisal Law School.

On behalf of all, here at Alfaisal Law School, we look forward to meeting you soon.

Best Regards,
Dr. Torki A Alshubaiki

College of Law Vision & Mission

College of Law & International Relations Vision

We aspire to become the leader in legal research in the Kingdom of Saudi Arabia.

College of Law & International Relations Mission

- **Is to provide quality education, legal research, and fostering partnerships with international universities, as well as local and international law firms**
  - Providing students with the necessary knowledge and skills to work with local and international law firms.
  - Providing students with the necessary knowledge and skills to work in international service and diplomacy.
  - Connecting the Kingdom's with the legal changes taking place in the international community.
  - Promoting legal research to be at the service of the Saudi government.
  - Help in making legal reforms in different areas of law for the benefit of the Saudi Arabian government and its agencies.
  - Cooperate with regional and international academic research centers.

Values

- **Quality:** Our commitment to excellence reflects our passion for high-quality research and education as we continually strive to improve our offering.
- **Integrity:** Personal integrity, holding ourselves to the highest ethical standards, transparency, and taking responsibility for our actions.
- **Diversity:** We take tremendous pride that our college culture promotes inclusiveness and gender diversity. We strive to prepare young men and women, regardless of their background and economic status, to be the next generation of and community leaders.
- **Collegiality:** We are committed to a collegial system in which proposed new policies and changes are institutionalized, principle-based driven, guided by our vision, and consistent with our strategic objectives.
- **Engagement:** Our focus is to build and maintain strong relationships with our alumni. We will do this to provide guidance to our future graduates who can see a role model throughout their legal studies.

About the College of Law and International Relations

College of Law at Alfaisal University is a young institution. It started in the fall of 2021 with 18 freshman male and female students.

It offers a vibrant undergraduate Law degree using English as the language of instructions in most of its courses.

The college's pioneering curriculum and its diverse faculty are attracting the best and the brightest students in the Kingdom of Saudi Arabia. Students learn from distinguished scholars and practitioners who have very good academic credentials.

Through such a well-rounded education, Alfaisal Law graduates will become practitioners who are able to help government agencies, local and international law firms, and companies to manage and run their legal affairs.

College of Law & International Relations Faculty and Administrative Staff

Faculty:

Dr. Torki A Alshubaiki	**Dean of College of Law & International Relations & Assistant Profes** **BA:** King Saud University, Saudi Arabia **LL.M:** American University, Washington College of Law, USA **Ph.D.:** London School of Economics (LSE), U.K
Prof. Rafael Leal-Arcas	**Professor of Law, College of Law & International Relations** **BA & LLB:** Granada University, Spain Barrister & Solicitor, Madrid, Spain **M.Phil:** London School of Economics and Political Science (LSE), U.K **LL.M:** Columbia University, USA **JSM:** Stanford University, USA **Ph.D. & M.Res:** European University Institute, Italy **Executive Education:** Harvard University, USA & Yale University, USA ar University, Uk.
Dr. Andreas Dimopoluos	**Associate professor of Law, College of Law & International Relation** **CBL:** Law School, University of Athens, Greece **LL.M:** Law School, University of Edinburg, UK **Ph.D.:** University of Cambridge, Uk

Dr. Abd Hakim Abd Razak	**Assistant Professor of Law, College of Law & International Relations** **BA in Legal Studies (Hons):** University of Technology MARA, Malaysia **LL.M in Banking Law:** International Islamic University, Malaysia **Ph.D. in Law:** Trinity College Dublin, Ireland
Dr. Osama Bin Mahmoud	**Assistant Professor of Law, College of Law & International Relations** **LLB:** King Saud University, Saudi Arabia **LL.M :**: IU McKinney School of Law (IUPUI), USA **S.J.D:** Delaware Law School - Widener University, USA
Dr. Abdurahman Alfatta	**Assistant Professor of Law, College of Law & International Relations** **LLB:** from King Saud University **L.L.M:** in International Commercial Law from University of Westminster, London **Ph.D**: from University of Westminster, London
Dr. Cécile Abi Tayeh	**Assistant Professor of Law, College of Law & International Relations** **LLB:** La Sagesse University, Lebanon **L.L.M:** University Paul Cezanne Axi-Marseille, France **Ph.D:** in International Law Kapodistrian University of Athens, Greece.
Dr. Charles Hall	**Associate Professor of Applied Linguistics, Department of Science.** **BA:** Oakland University, USA **MA:** University of Florida, USA **Ph.D.:** University of Florida, USA

Adjunct Faculty:

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Bachelor's Degree Program in Law and International Relations (L.L.B)

The Law and International Relations Program requires for graduation a total of 141 credit hours that include 126 credit hours of compulsory courses and 15 credit hours of elective courses. Choice of elective courses is specified by the Program curriculum.

- Bachelor's degree Program in Law and International Relations (L.L.B)

Law and International Relations

Program

College of Law and International Relations

Bachelor of Law (LLB)

Bachelor's Degree Program in Law and International Relations (L.L.B)

The Law and International Relations Program requires for graduation a total of 141 credit hours that include 126 credit hours of compulsory courses and 15 credit hours of elective courses. Choice of elective courses is specified by the Program curriculum.

General Education Requirement Courses

Item #	Title	Credits
LAW 121	English Legal Writing	3
LAW 122	Arabic Legal Writing	3

Core Law Courses

Item #	Title	Credits

LAW 130	Introduction to Law	3
LAW 131	Introduction to Islamic Law	3
LAW 132	Islamic Jurisprudence	3
LAW 133	Administrative Law	3
LAW 134	The Law of Contracts	3
LAW 137	Saudi Arabia Legal System	3
LAW 138	Criminal Law	3
LAW 139	Constitutional Law	3
LAW 140	Law of Tort	3
LAW 141	Research Methods & Legal Research	3
LAW 242	Public International Law	3
Law 231	Agency Law	3
LAW 232	Company Law	3
LAW 233	Islamic Finance	3
LAW 234	Bills of Exchange	3
LAW 235	Capital Market Law	3
LAW 236	Banking Law	3
LAW 237	Insurance Law	3
LAW 239	Labour Relations Law	3
LAW 240	Commercial & Consumer Law	3
LAW 241	Land Law	3
LAW 330	Muslims Family Law	3
LAW 331	Contracts of Guarantees	3
LAW 332	Jurisprudence	3
LAW 333	Criminal Procedure	3
LAW 334	Muslims` Personal Property Law	3
LAW 335	International Business Transactions	3
LAW 336	Economic Crimes	3
LAW 337	Conflict of Laws	3
LAW 338	Evidence Law	3
LAW 339	Civil & Commercial Procedure Law	3
LAW 430	Domestic and International Arbitration	3
LAW 432	Legal Professional Ethics	3
LAW 433	International Economic Law	3
LAW 434	Medical Law	3
LAW 435	Internet and Cybersecurity Law	3
LAW 436	International Criminal Law	3
LAW 437	International Labour Standards	3
LAW 438	International Investment Law	3
LAW 440	Summer Internship	0
LAW 441	Intellectual Property Law	3

4-Year Curriculum

Fall (Year 1)

Item #	Title	Credits
LAW 121	English Legal Writing	3
LAW 130	Introduction to Law	3
LAW 131	Introduction to Islamic Law	3
LAW 139	Constitutional Law	3
LAW 134	The Law of Contracts	3
LAW 138	Criminal Law	3

Spring (Year 1)

Item #	Title	Credits
LAW 122	Arabic Legal Writing	3
LAW 132	Islamic Jurisprudence	3
LAW 140	Law of Tort	3
LAW 141	Research Methods & Legal Research	3
LAW 137	Saudi Arabia Legal System	3
LAW 133	Administrative Law	3

Fall (Year 2)

Item #	Title	Credits
LAW 242	Public International Law	3
Law 231	Agency Law	3
LAW 232	Company Law	3
LAW 236	Banking Law	3
LAW 234	Bills of Exchange	3
LAW 239	Labour Relations Law	3

Spring (Year 2)

Item #	Title	Credits
LAW 235	Capital Market Law	3
LAW 233	Islamic Finance	3
LAW 237	Insurance Law	3
LAW 240	Commercial & Consumer Law	3
LAW 241	Land Law	3
LAW 330	Muslims Family Law	3

Fall (Year 3)

Item #	Title	Credits
LAW 331	Contracts of Guarantees	3
LAW 339	Civil & Commercial Procedure Law	3
LAW 333	Criminal Procedure	3
LAW 334	Muslims` Personal Property Law	3
LAW 430	Domestic and International Arbitration	3
LAW 441	Intellectual Property Law	3

Spring (Year 3)

Item #	Title	Credits
LAW 335	International Business Transactions	3
LAW 336	Economic Crimes	3
LAW 337	Conflict of Laws	3
LAW 332	Jurisprudence	3
LAW 338	Evidence Law	3
LAW 432	Legal Professional Ethics	3

Summer (Year 3)

Item #	Title	Credits
LAW 440	Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
LAW 433	International Economic Law	3
LAW 434	Medical Law	3
LAW 435	Internet and Cybersecurity Law	3
LAW 436	International Criminal Law	3
LAW 437	International Labour Standards	3
LAW 438	International Investment Law	3

Spring (Year 4) - One Track Required

15 CREDIT HOURS

4th Year

International Law Track

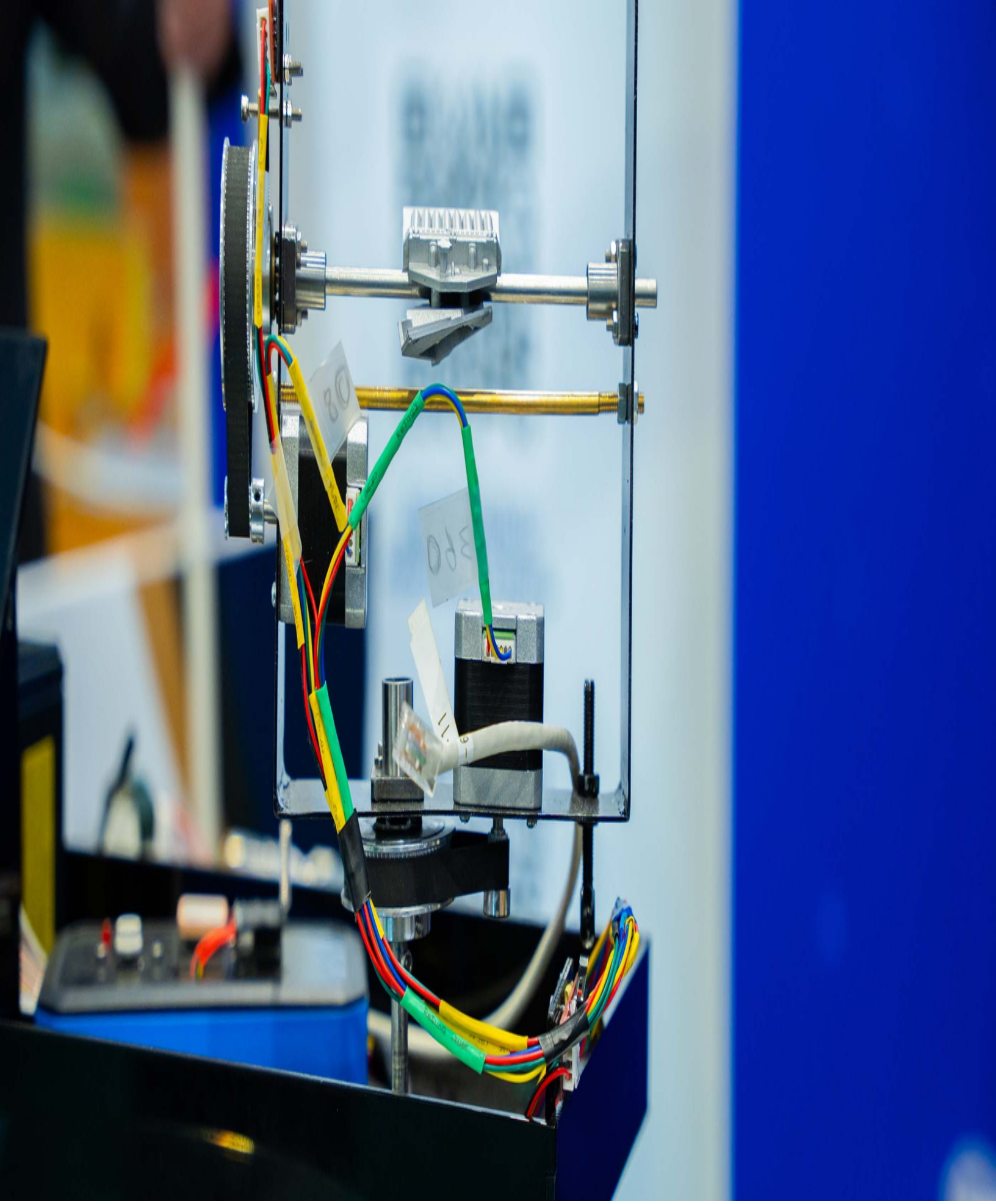
Item #	Title	Credits
INL 431	International Humanitarian Law of Armed Conflict	3
INL 432	GCC Charter and Statutes	3
INL 433	International Commercial Arbitration	3
INL 434	International Negotiation & Dispute Settlement	3
INL 435	European Union Law	3
INL 436	Use of Force in International Law	3

Government and Public Policy Track

Item #	Title	Credits
GPP 450	Policy Making Process	3
GPP 451	Health and Environment Policy: A Global Perspective	3
GPP 452	Managing Government Organizations	3
GPP 453	Public Policy and Social Issues	3
GPP 454	Corporate Governance and Regulations	3
GPP 456	Ethics and Politics of Public Service	3
GPP 459	Advanced Topics in Public Policy: International Development	3

Diplomacy and International Relations Track

Item #	Title	Credits
INR 420	Introduction to Global Politics and International Relations	3
INR 421	The International Relations of the Contemporary Middle East	3
INR 422	War and Diplomacy: The U.S in World Affairs	3
INR 423	European Foreign Policy and Security Issues	3
INR 424	The Asia Pacific in World Affairs	3
INR 425	Foreign Policy of Russia, Eastern Europe, and the Eurasia	3
INR 429	Advanced Topics in International Relations	3



College of Medicine

Dean's Message

Over the last three decades, the Kingdom of Saudi Arabia has experienced a dramatic improvement in economic status. Health services have developed to an even greater extent, as indicated by accessibility and coverage indicators. Similarly, there also have been improvements in health indicators such as mortality, morbidity, and life expectancy. However, national health manpower development is not coping with the momentum and attendant growth. Saudis make up only 19% of workers in the health sector. This figure is extremely low when compared to other sectors such as education and agriculture. Expanding and changing medical education and medical practice is imperative in order to produce healthcare professionals in the needed quantities and quality, at the right times and in the right places.

The existing curricula of many medical schools in Saudi Arabia follow traditional approaches, which deliver knowledge through fragmented and non-integrated avenues. Instead of being community-oriented, they are teacher-oriented and force students into passive roles. Such institutions produce students who opt to work only in urban areas, contributing further to the poor distribution of stable national health personnel and services throughout the Kingdom. Alfaisal University medical college located in the capital city of Riyadh, responds to all these challenges. The college follows an innovative approach in the education of health professionals, including problem-based learning and community-based education.

The Alfaisal College of Medicine follows a problem-based, self-directed curriculum, in which patients' clinical scenarios and problems are studied from multiple standpoints. Problem-based learning is integrated with appropriate clinical skills training and community-based experiences. Emphasis is placed on critical thinking and problem solving.

The main goal of the undergraduate program is to train students to be critical thinkers and problem solvers, skilled in sensing, formulating, and managing common health problems. In doing so, graduates are being better prepared to expand their competencies in any career and in any discipline. Graduate Programs and Research will ensure higher education at an international level that will distinguish the university as research based and working towards dissemination of knowledge.

The mission of the Alfaisal College of Medicine is to prepare its students for meeting and responding to the changing healthcare needs and expectations of the Saudi Arabian community. This is being achieved in full partnership with other healthcare providers and relevant sectors in the community.

Prof. Khaled Al-Kattan, Dean, College of Medicine

College of Medicine Degree Program

Bachelor of Medicine, Bachelor of Surgery (MBBS)

A six-year program leading to an MBBS degree (Medical Bachelor and Bachelor of Surgery)

ALFAISAL UNIVERSITY COLLEGE OF MEDICINE						
MBBS						
Year 1						
Sequence	Course Code	Year	Sem	Course Title	Credit Hrs	
1	FND 111	1	1	Foundation Block (6-weeks)	4	(3+0+2)
2	CVP 112	1	1	Cardiopulmonary block (7 weeks)	4	(3+0+2)
3	REN 123	1	1	Renal block (5 weeks)	3	(2+0+2)
4	MOL 114	1	1	Molecular Medicine I (Biochemistry & Cell Biology)	3	(2+0+2)
5	COM 116	1	1	Primary Health Care , Rural Health and Prevention	2	(1+2+0)
6	ENG 102	1	1	Freshman English I	2	(2+0+0)
	Total Credit Hours for Semester-1				**18**	
1	GIT 113	1	2	Gastrointestinal block (5 weeks)	3	(2+0+2)
2	ERP 122	1	2	Endocrine and Reproductive block (6 weeks)	3	(2+0+2)
3	MSK 112	1	2	Musculoskeletal block (7 weeks)	4	(3+0+2)
4	GEN 124	1	2	Genetics	2	(2+0+0)

5	MOL 125	1	2	Molecular Medicine II (Biochemistry & Cell Biology)	3	(2+0+2)
6	PRO 115	1	2	Communication Skills	2	(0+4+0)
7	ENG 113	1	2	English-II	2	(2+0+0)
Total Credit Hours for Semester-2					**19**	
Year 2						
1	POD 231	2	3	Pathogenesis of Diseases (11-Weeks)	6	(5+0+2)
2	MSI 361	2	3	Musculoskeletal and Integumentary block (6 weeks)	3	(2+2+0)
3	PRO 234	2	3	Professional Skills I (Introduction to clinical Skills)	2	(0+4+0)
4	BEP 235	2	3	Basics of Biostatistics and Epidemiology	2	(1+2+0)
5	ARB 102	2	3	Arabic Language I	2	(2+0+0)
6	ISL 102	2	3	Islamic Studies I	2	(2+0+0)
7	ENG 224	2	3	English for special purposes	2	(2+0+0)
Total Credit Hours for Semester-3					**19**	
1	NEU 241	2	4	Neuroscience Block (11 weeks)	6	(4+2+2)
2	HNS 242	2	4	Head & Neck And Special Senses Block (5-weeks)	3	(2+0+2)
3	BHS 243	2	4	Behaviour Science	2	(2+0+0)
4	PRO 244	2	4	Professional Skills II (Integrated with Clinical Sessions)	2	(0+4+0)
5	ARB 113	2	4	Arabic Language II	2	(2+0+0)
6	ISL 113	2	4	Islamic Medical Jurisprudence	2	(2+0+0)
Total Credit Hours for Semester-4					**17**	
Year 3						
S#	Course Code	Year	Sem	Course Title	Credit Hrs	
1	CVP 351	3	5	Cardiopulmonary block (6- weeks)	4	(3+2+0)
2	REN 364	3	5	Renal Block (4-weeks)	2	(2+0+0)
3	HEM 352	3	5	Hem/Onc Block (4-weeks)	2	(2+0+0)
4	COM 353	3	5	Comprehensive Community Health (4 wks)	3	(3+0+0)
5	EBM 354	3	5	Evidence Based Medicine	2	(1+2+0)
6	PRO 355	3	5	Professional Skills III (Integrated with Clinical Sessions)	2	(0+4+0)
7	MIF 356	3	5	Medical Informatics & Quality and Care	2	(1+2+0)
Total Credit Hours for Semester-5					**17**	
1	GIT 361	3	6	Gastrointestinal Block (6-weeks)	4	(3+2+0)
2	ERP 362	3	6	Endo-Repro block (6 weeks)	3	(2+2+0)
3	MID 363	3	6	Multisystem and infectious diseases block (5 wks)	3	(2+2+0)
4	PRO 365	3	6	Professional Skills IV (Integrated with Clinical Sessions)	2	(0+4+0)
5	COM 366	3	6	Family Medicine	2	(2+0+0)
6	NTN 368	3	6	Nutrition	2	(2+0+0)
7	FMT 367	3	6	Forensic Medicine & Toxicology	2	(2+0+0)
Total Credit Hours for Semester-6					**18**	
Year 4						
1	MED 471	4	7	Internal Medicine-I (9 weeks)	9	(2+14+0)
2	PED 472	4	7	Paediatrics (9-weeks)	9	(2+14+0)
3	RAD 245	4	7	Radiology	2	(2+0+0)
4	SUR 481	4	8	Surgery (9-weeks)	9	(2+14+0)
5	GYN 482	4	8	Obstetrics & Gynaecology (9-weeks)	9	(2+14+0)
6	PHL 369	4	8	Biomedical Ethics	2	(2+0+0)
Total Credit Hours for Year-4 (Semesters 7 & 8)					**40**	
Year 5						
1	IMD 591	5	9	Subspecialty Medicine (9 weeks)	9	(2+14+0)
2	INS 592	5	9	Integrated Neurosciences (9 weeks) (Neurology/ Ped. Neurology/ Neurosurgery-Psychiatry)	9	(2+14+0)
3	HEN 483	5	9	Health Economics and Health Care Management	2	(2+0+0)
4	SSP 5X1	5	10	Subspecialty Surgery (9 weeks)(ENT-Opthalmology-Orthopedics)	9	(2+14+0)
5	AMB 5X2	5	10	Ambulatory Care (9 weeks) (Family Med.-Emergency- Anesth)	9	(2+14+0)
Total Credit Hours for Year-5 (Semesters 9 & 10)					**38**	
					186	

Alfaisal's Innovative Spiral Medical Curriculum

Alfaisal University College of Medicine has developed a spiral curriculum, with three interconnected phases, where the outcomes of each phase build on each other to develop the final product of "a competent intern ". Phase 1 of the curriculum covers normal structure and function of the human body. In Phase 2 of the curriculum, the normal versus abnormal relationship is explored, in addition to the introduction of clinical skills for clinical practice. Phase 3 of the curriculum is the clinical clerkship phase, where students learn the practice of medicine and apply the knowledge and skills they have learned in the previous phases. These phases of the curriculum are not distinct but rather interlocking so that knowledge gained in one is used to learn the knowledge and skills in the successive phases. For example, the structure and function of the heart learned in Phase 1 is revisited and reassessed when learning about the mechanism of heart diseases in Phase 2. Moreover, the disease mechanisms are revisited and reassessed when students learn the management of heart diseases in Phase 3 of the curriculum.

College of Medicine Grading System

Standard Grading Scale	
Grade	**Grade Points**
A	4.00
A-	3.67
B+	3.33
B	3.00
B-	2.67
C+	2.33
C	2.00
C-	1.67
F	0.00

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Akef Obeidat	Associate Professor, Department of Anatomy & Genetics, College of Medicine, Ph.D., University of Ottawa, Canada
Ahmed Yaqinuddin	Professor, Department of Anatomy & Genetics, College of Medicine Ph.D., Aga Khan University, Pakistan
Aniko Etelka Szabo Hill	Assistant Professor, Department of Anatomy & Genetics, College of Medicine, PhD in Neurobiology, Weill Cornell Graduate School of Medical Sciences, USA

Hassan Sami Shaibah	**Associate** Professor, Department of Anatomy & Genetics and Department of Medical Education, College of Medicine Double major (Anatomy and Medical Education) Doctor of Philosophy, PhD, and a Master of Health Professions Education (MHPE), Maastricht University, Netherlands
Aftab Ahmed Shaikh	Senior Lecturer, Department of Anatomy & Genetics, College of Medicine, MPhil. Anatomy, Karachi University, Pakistan
Muhammad Atif Mazhar	Senior Lecturer, Department of Anatomy & Genetics, College of Medicine MBBS, University of Karachi, Pakistan
Ayman Behiery	Senior Lecturer, Department of Anatomy & Genetics, College of Medicine MBBS, Cairo University, Egypt
Gulsan Abubakar Karbani	Senior Lecturer, Department of Anatomy & Genetics, College of Medicine Advanced Diploma in Counselling, Park Lane College, UK.
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Shahid Akhtar Akhund	Senior Lecturer, Dept. of Anatomy & Genetics, College of Medicine, PhD University of Wollongong, Australia
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Ahmad Samir AlJada	Professor, Department of Biochemistry & Molecular Medicine, College of medicine, Roswell Park Cancer Institute, State University of New York at Buffalo, Buffalo, NY, USA
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Nora Abduljalil Alhomidan	Senior Lecturer, Department of Medical Education, College of Medicine master's in medical education, King Saud Bin Abdulaziz University for Health Sciences, Saudi Arabia
Raed Alawi Mustafa Albar	Teaching Assistant, Department of Medical Education, College of Medicine master's in medical education, University of Dundee, UK
Department of Medicine Faculty Members	
Abdulkarim Said Almakadma	Associate Professor, Department of Medicine, College of Medicine Fellowship of general pediatrics and Adolescent Medicine, Dalhousie University, Canada
Department of Microbiology & Immunology Faculty Members	
Atef Mohamed Shibl	Professor, Department of Microbiology & Immunology, College of Medicine Ph.D., University of Glasgow, UK
Garwin Kim Sing	Associate Professor, Department of Microbiology & Immunology, College of Medicine Ph.D., University of tide Witwatersrand, Soutd Africa
Hana Khidir Abdalla	Assistant Professor, Department of Microbiology & Immunology, College of Medicine, PhD in Medical Microbiology, Linköping University, Sweden
Muhabat Adeola Raji	Senior Lecturer, Department of Microbiology & Immunology, College of Medicine Master of Science (MSc) in Medical Microbiology, University of Lagos, Nigeria
Ghada Garaween	Lecturer, Department of Microbiology & Immunology, College of Medicine master's in biomedical science, Alfaisal University, Saudi Arabia
Nada Ahmed M. Alsalloum	Lecturer, Department of Microbiology & Immunology, College of Medicine master's in biomedical science, Alfaisal University, Saudi Arabia
Karmah Nahar Alrumman	Lab Specialist, Department of Micr0biology & Immunology, College of Medicine
Department of Pathology Faculty Members	
Emadeddin M. Said Raddaoui	Professor, Department of Pathology, College of Medicine American Boards in Anatomic Pathology, Clinical Pathology and Cytopathology. Texas A&M, USA
Abderrahman Ibrahim Ouban	Professor, Department of Pathology, College of Medicine, Clinician-Scientist Fellowship (Molecular Pathology), University of Toronto, Canada
Muhammad Abrar Barakzai	Assistant Professor, Department of Pathology, College of Medicine FCPS (Fellowship in Histopathology), College of Physicians and Surgeons of Pakistan, Pakistan
Shoukat Ali	Assistant Professor, Department of Pathology, College of Medicine Ph.D. (Pathology), Ziauddin University Karachi, Pakistan
Mohammad Raihan Sajid	Assistant Professor, Department of Pathology, College of Medicine FCPS (hematology), College of Physician and Surgeons Pakistan, Pakistan
Department of Pediatrics Faculty Members	
Sabri Kemahli	Professor, Department of Pediatrics, College of Medicine M.D., Pediatrics and Pediatric Hematology, Ankara University, Turkey.
Ayman Mohamed Awad Mohamed	Teaching Assistant, Department of Pediatrics, College of Medicine MBBS, Alfaisal University, Saudi Arabia
Department of Pharmacology Faculty Members	
Dileep Kumar Rohra	Professor, Department of Pharmacology, College of Medicine Ph.D., Tohoku University, Japan
Peter Mark Basil Cahusac	Professor, Department of Pharmacology, College of Medicine Ph.D., Bristol University, UK
Manal Mohamed Alem	Assistant Professor, Department of Pharmacology, College of Medicine Ph.D., Glasgow University, UK
Hatouf Husni Sukkarieh	Assistant Professor, Department of Pharmacology, College of Medicine Ph.D., Rutgers, the State University of New Jersey, USA
Samah Hamza Osman Zarroug	Senior Lecturer, Department of Pharmacology, College of Medicine Ph.D. in Neuroscience, University of Southampton, UK.
Santosh Kumar	Lecturer, Department of Pharmacology, College of Medicine MBBS, Aga Khan University, Pakistan.
Department of Physiological Sciences Faculty Members	
Hashim Shams	Professor, Department of Physiological Sciences, College of Medicine PhD, der Ruhr Universität Bochum, Germany.
Abdul Jabar Rasool	Senior Lecturer, Department of Physiological Sciences, College of Medicine MS (Physiology and Biophysics), University of Iowa, USA.
Dana Bou Matar	Senior Lecturer, Department of Physiological Sciences, College of Medicine Masters in Physiology, American University of Beirut, Lebanon.
Abdul Ahad Shaikh	Senior Lecturer, Department of Physiological Sciences, College of Medicine M.Phil. (Physiology), Ziauddin Medical University, Pakistan.
Fahmi Abu-Owaimer	Senior Laboratory Specialist, Department of Physiological Sciences, College of Medicine, B.Sc Biochemistry, King Saud University, Saudi Arabia
Department of Radiology Faculty Members	
Rafat Mohtasib	Assistant Professor, Department of Radiology, College of Medicine Ph.D., University of Liverpool, UK.
Department of Surgery Faculty Members	
Khaled Manaa Alkattan	Professor, Department of Surgery, College of Medicine FRCS, Royal College of Surgeons of Edinburgh, UK.
Wael Manaa Al Kattan	Associate Professor, Department of Surgery, College of Medicine Fellowship of the Royal College of Surgeons of Canada (FRCSC), University of Toronto, Canada.
Muhammed Zuheir Alkawi	Associate Professor, Department of Surgery, College of Medicine MD Damascus University, Syria.

College of Medicine Study Plan

Program

College of Medicine

Bachelor of Medicine and Bachelor of Surgery (MBBS)

College of Medicine - UG Course Credit Hour Transcript

Main Courses (MBBS)

Phase I - Man & The Environment

Semester-I, Fall 2020

Item #	Title	Credits
FON 111	Foundation Block	2
MSK 112	Musculoskeletal Block	4
GIT 113	Gastrointestinal Block	3
MOL 114	Molecular Medicine I (Biochemistry & Cell Biology)	3
COM 116	Primary Health Care & Rural Health	2
ENG 102	Freshman English 1	2

Semester-II, Spring 2021

Item #	Title	Credits
CVP 121	Cardiopulmonary block	5
HLS 122	Hematopoietic & Lymphatic System	2
REN 123	Renal Block	3
GEN 124	Genetics	2
MOL 125	Molecular Medicine II (Biochemistry & Cell Biology)	3
PRO 115	Communications Skills	2
ENG 113	Freshman English II	2

Semester-III, Fall 2021

Item #	Title	Credits
END 231	Endocrine Block	2
REP 232	Reproductive Block	2
POD 233	Pathogenesis of Diseases (Basic Principles of Pharma, Micro, Patho & Immuno)	5
PRO 234	Introduction to Medical Skills	2
BEP 235	Basics of Biostatistics & Epidemiology	2
ARB 101	Arabic Language I	2
ISL 101	Islamic Studies I	2
ENG 224	English for Medical Students	2

Semester-IV, Spring 2022

Item #	Title	Credits
NEU 241	Neuroscience Block	6
HNS 242	Head & Neck and Special Senses Block	3
BHS 243	Behavior Science	2
PRO 244	Professional Skills IV (Integrated with Clinical Sessions)	2
RAD 245	Radiology	2
ARB 112	Arabic Language II	2
ISL 113	Islamic Studies II	2

Phase II - Patho-physiology of the Disease

Semester-V, Fall 2022

Item #	Title	Credits
CVP 351	Cardiopulmonary block	4
HEM 352	Hematology-Oncology Block	2
MSI 361	Musculoskeletal and integumentary block	3
EBM 354	Evidence based Medicine	2
PRO 355	Professional Skills III (Integrated with Clinical Sessions)	2
FMT 367	Forensic Medicine & Toxicology	2
COM 358	Family Medicine	2

Semester-VI, Spring 2023

Item #	Title	Credits
REN 364	Renal Block	2
GIT 353	Gastrointestinal Block	3
END 362	Endocrine Block	2
REP 363	Reproductive Block and Breast	2
PRO 365	Professional Skills V (Integrated with Clinical Sessions)	2
COM 366	Family Medicine-II (Women's H, Prenatal C, Geriatrics, Palliative and Alternative M)	2
NTN 368	Nutrition	2
MIF 356	Medical Informatics	2

Phase III - Clerkship

Semester-VII & VIII, 2023-24

Item #	Title	Credits
MED 471	Medicine	9
PED 472	Pediatrics	9
SUR 481	Surgery	9

GYN 482	Obstetrics & Gynecology	9
HEN 483	Health Economics and Health Care Management	2
PHL 369	Medical Ethics	2

Semester-IX & X, 2024-25

Item #	Title	Credits
IMD 591	Sub-Specialty Medicine	9
INS 592	Integrated Neuroscience	9
SSP 5X1	Surgical Sub-Specialty	9
AMB 5X2	Ambulatory Care	9

Aggregate Credit Hours for UG Course: 183

Internship Year

Hospital Attachment

Item #	Title	Credits
MED 600	Internship	


Diabetes Awareness Event
Prevent The Sugar Rush
70 - 100 MG/DL
101 - 125 MG/DL
126 + MG/DL
ABETES

College of Pharmacy

College of Pharmacy General Information

1.

Dr. Manal Alem

Dean of College of Pharmacy

Tel: + 966 11 215 7646

Email: malem@alfaisal.edu

Dr. Mohammed Khanfar

Vice Dean of the College of Pharmacy

Tel: + 966 11 215 7611

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About the College of Pharmacy

College of Pharmacy enrols graduates from the university preparatory program UPP into a further 5 years of didactic/ experiential courses within Pharm.D. Program. This program offers the graduate with a degree of; **Doctor of Pharmacy (Pharm.D.),** conditioned with successful performance in all courses, including the final advanced pharmacy practice experience APPE rotations in the final year.

National and International Collaboration:

1. National:
    1. Medical City King Saud University
    2. Pediatric Hospital – King Saud Medical City
    3. King Fahad Medical City
    4. King Faisal Specialist Hospital & Research Center
    5. Prince Sultan Military Medical City
    6. Dr. Sulaiman Al-Habib Medical Group
    7. Ministry of Health
    8. Specialized Medical Center
    9. Saudi Food and Drug Authority
    10. Octapharm Pharmaceutical Company
    11. Avalon Pharmaceutical Company
    12. Eli Lilly Pharmaceutical Company
    13. Bupa Arabia Health Insurance Company
    14. Biogen International GmbH
    15. Hikma Pharmaceuticals Company
    16. Lemon Medical Company
2. International:
    1. Massachusetts College of Pharmacy and Health Sciences (MCPHS), Boston, US
    2. Strathclyde Institute of Pharmacy and Biomedical Sciences (Sipbs) Glasgow, UK.

College of Pharmacy Vision and Mission

College of Pharmacy Vision

An aspiring hub recognized globally for healthcare advancement through world-class pharmacy education and innovative research.

College of Pharmacy Mission

To empower pharmacy graduates with the knowledge, skills, and training to promote patient-centered care through education, research, and innovation.

Faculty Organization and Departments

College of Pharmacy work dynamics are categorized under the following 2 departments:

- **Pharmaceutical Sciences**

It Includes those faculties specialized in pharmaceutical sciences, such as Medicinal Chemistry, Pharmacology, Drug Discovery, Pharmaceutics, Drug Delivery, Toxicology, Physiology and Biotechnology

- **Pharmacy Practice**

It includes those faculties specialized in Clinical pharmacy, Experiential education, and Pharmacy practice.

Pharmaceutical Sciences Faculty Members	
Mohammed Abdalmoety Fares Khanfar	Professor of Drug Design and Medicinal Chemistry, College of Pharmacy, Alfaisal University. PhD in Medicinal Chemistry and Drug design, College of Pharmacy, University of Louisiana, USA.
Omar Ziad Ameer Al Adhami	Assistant Professor of Physiology and Pharmacology, College of Pharmacy, Alfaisal University. PhD in Advanced Medicine, The Australian School of Advanced Medicine, Macquarie University, Sydney, Australia.
Ibrahim Muhammad Salman	Assistant Professor of Physiology and Pharmacology, College of Pharmacy, Alfaisal University. PhD in Advanced Medicine, The Australian School of Advanced Medicine, Macquarie University, Sydney, Australia.
Muthanna Abdulkarim Al-Baldawi	Assistant Professor of Pharmaceutics, College of Pharmacy, Alfaisal University. PhD in Pharmaceutical Technology, Cardiff University, UK
Adeola Tawakalitu Kola Mustapha	Assistant Professor of Pharmaceutics, College of Pharmacy, Alfaisal University. PhD in Pharmaceutics and Pharmaceutical Technology, De Montfort University, Leicester, UK.
Nahlah Abdullah Aldahian	Senior Lecturer of Pharmacology, College of Pharmacy, Alfaisal University. MSc in Pharmacology, Massachusetts College of Pharmacy and Health Science, Boston, USA.
Mariyam Mohammad Alfagih	Lecturer of Pharmacogenomics, College of Pharmacy, Alfaisal University. MSc in Genomic Medicine, National Heart and Lung Institute, Imperial College London, London, UK.
Aiman Yahya Alwadi	Lecturer of Biotechnology, College of Pharmacy, Alfaisal University. MSc in Biomedical Sciences, College of Medicine, Alfaisal University, Riyadh, KSA.
Yaseen Bokhari	Lecturer of Biotechnology and microbiology at College of Pharmacy, Alfaisal University. MSc in Science in Cytotoxicity and Biotechnology, Flinders University, Australia.
Noura Hatim BinSaeed	Senior Laboratory Specialist, College of Pharmacy, Alfaisal University. BSc in Pharmaceutical Sciences, Riyadh Elm University, Riyadh, KSA.
Yusra Abdulkarim Alzahrani	Laboratory Specialist, College of Pharmacy, Alfaisal University. BSc in Chemistry, College of Sciences, Princess Noura University, Riyadh, KSA.

Pharmacy Practice Faculty members	
Ibrahim Muhammad Salman	Assistant Professor of Physiology and Pharmacology, College of Pharmacy, Alfaisal University. PhD in Advanced Medicine, The Australian School of Advanced Medicine, Macquarie University, Sydney, Australia; Graduate Certification in Advanced Pharmacy Practice, Pharmaceutical Society of Australia (PSA), Sydney, Australia; a board-certified pharmacist by the Australian Health Practitioner Regulation Agency (AHPRA), Sydney, Australia.
Abdullah Mohammed Alrajhi	Senior Lecturer of Pharmacy Practice, College of Pharmacy, Alfaisal University. PGY1 in General Pharmacy Practice, Massachusetts, USA and PGY2 Hematology and Oncology, King Fahad Specialist Hospital (KFSH), Riyadh, KSA.
Rakan Jamal Alanazi	Lecturer of Pharmacy Practice, College of Pharmacy, Alfaisal University. MSc in Pharmacy Practice, Purdue University, Indiana, USA.

teacher assistant	
Shaden Al-Khatib	Teaching assistant, College of Pharmacy, Alfaisal University Doctor of Pharmacy (PharmD), Alfaisal University, Riyadh, Saudi Arabia

Doaa Rashid	Teaching assistant, College of Pharmacy, Alfaisal University Doctor of Pharmacy (PharmD), Alfaisal University, Riyadh, Saudi Arabia

College of Pharmacy Admin Staff	
Abeer Aljahbali	Administrative. She has finished her bachelor's degree from Imam Mohammed Bin Saud University college of English Languages and Literature.
Deema Alluhayb	Accreditation,Quality Assurance Administrative and Finance Officer She has Master of Education, University of Canberra, Australia.

College of Pharmacy Degree Program

Pharm.D. curriculum (Doctor of Pharmacy)

- PharmD. Curriculum

The curriculum of the Doctor of Pharmacy (Pharm.D.) Program at Alfaisal University is designed to systemically provide a solid foundation in the basic sciences on which to build upon, and integrate the pharmaceutical sciences, social/administrative/ behavioural sciences, and clinical sciences. Consistent with the College of Medicine at Alfaisal University, the Pharm.D. curriculum uses the "SPICES" curriculum model as a guiding philosophy with these elements: Student-centred/active learning, Problem/practice based, Integrated, Community/systems-based, Electives, and Systematic approaches. In addition, the curriculum incorporates research and interprofessional experiences.

The integrated pharmacotherapy course sequences with case-based seminars that employ case-based collaborative learning (CBCL) approach; a hybrid of problem-based learning (PBL), and team-based learning (TBL) approaches. These courses will be offered in the early professional phase of the Pharm.D. curriculum to promote learning in both small groups to prepare for "case-based seminars" and in a tutorial setting with student-directed learning.

Distinguishing features of the program include state-of-the art practicum and simulation experiences, a pharmacy practicum training laboratory with inpatient ambulatory care, and community pharmacy components will be offered is a set of patient care and health system management laboratory courses. Introductory Pharmacy Practice Experience (IPPE) courses in a community setting, as well as in an inpatient and outpatient settings will expose the students to the various pharmacy practice opportunities. Students will learn the fundamental research principles and apply research skills by conducting a research project as a capstone experience prior to the Advanced Pharmacy Practice Experiences (APPE) phase.

The last phase of the Pharm.D. program will consist of state of the art APPE rotations in-patient (hospital/ health system) and out-patient (community/ ambulatory care) settings that expose students to diverse patient populations as part of an interprofessional team.

Program Structure

Year	Courses	Credit Hours
First year	University Preparatory Program	**23**
Second–fifth year	Didactic courses Practicum/simulation laboratory Introductory practice experiences	**135**
Sixth year	Advanced clinical/experiential education, via Advanced Pharmacy Practice Experience (APPE) rotations	**40**
	Total	**198**

Program Objectives

The Doctor of Pharmacy (Pharm.D.) program at Alfaisal University prepares clinical pharmacists to provide comprehensive medication management using a patient-centred approach within interprofessional health care teams. The entire program requires a total of six years; the first year as the University Preparatory Program (UPP), followed by 4 years of didactic, practicum/simulation and introductory practice experiences, and a final year of advanced clinical/ experiential education. Graduates of the program will be qualified practitioners with unique training in the appropriate use of medications and expertise in the provision of patient care services in a variety of different practice settings. The integration of research within the Pharm.D. program provides an optimal environment that promotes critical thinking, analytical

and lifelong learning, and prepares graduates for application of research.

At the conclusion of the Pharm.D. Program, all graduates will achieve the following outcomes:

1. Demonstrate a scientific foundation as related to the clinical, pharmaceutical, and social/ administrative/behavioural sciences.
2. Identify and evaluate research methods and demonstrate research skills relevant to the pharmacy profession that can be applied in different practice settings.
3. Integrate systems management concepts in the pharmacy profession, including the management of drug formulary systems (i.e., hospital, healthcare system, or national-based).
4. Practice evidence-based decision making and implement pharmaceutical care plans.
5. Provide comprehensive medication management to optimize medication use and health outcomes, reduce adverse drug events and improve patient safety.
6. Promote and implement public health, wellness, and disease prevention concepts.
7. Demonstrate effective oral and written communication skills to peers, other professionals, patients, and the public.
8. Demonstrate a commitment to continuous professional and leadership development.

College of Pharmacy Faculty and Staff

- **Faculty:**

- Dr. Manal Alem, Associate Professor of Clinical Pharmacology, Dean of the College of Pharmacy.

- Prof. Mohammed Khanfar, Professor of Drug Design and Medicinal Chemistry, Vice Dean of the College of Pharmacy.

- Dr. Omar Al Adhami, Assistant Professor of Pharmacology & Physiology, Head of the Department of Pharmaceutical Sciences, Chair of Accreditation and Quality Assurance Department.

- Dr. Ibrahim Salman, Assistant Professor of Pharmacology & Physiology, Head of Pharmacy Practice Department.

- Dr. Muthanna Albadawi Assistant Professor of Pharmaceutics, Cahir of Mentorship Program

- Dr. Adeola Kola Mustapha Assistant Professor of Pharmaceutics, Cahir of Curriculum Community.

- Dr. Nahlah Aldahian, Senior Lecturer of Pharmacology, Phase II Director.

- Dr. Aiman Alwadi, Lecturer of Biotechnology, Phase III Director.

- Dr. Rakan Alenazi, Lecturer of Clinical Pharmacy, Chair of Pharmacy Education Unit.

- Dr. Mariyam Alfagihe, Lecturer of Pharmacogenomics, Chair of Experiential Learning Unit.

- Dr. Yassen Boukhari, Lecturer of Biotechnology.

- Ms. Noura Hatim, Senior Lab Specialist.

- Ms. Yusra Alzahrani, Lab Specialist.

- Dr. Abdullah Alrajhi, Senior Lecturer of Clinical Pharmacy.

- Staff:

- Ms. Abeer Aljahbali, Administrative Assistant.

- Ms. Deema Al Luhayb, Accreditation, Quality Assurance Administrative and Finance Officer.

College of Pharmacy Study Plan

Program

College of Pharmacy

Doctor of Pharmacy-PharmD

Pharm.D. Curriculum

Year 1—Phase 1, Semester 1

Item #	Title	Credits
PCHE 101/ CHM 103	Chemistry I	3
PHSF 101/ PHY 103	Preparatory Human Structure and Function I	4
PAM 101/ MAT 103	Algebra	3
PENG 005	Preparatory English Level 5	4

PENG 006	Preparatory English Level 6	4

PENG 005, PENG 006: UPP criteria are available for exemption from English courses.

Year 1—Phase 1 Semester 2

Item #	Title	Credits
PCHE 112/ CHM 113	Chemistry II	3
PHSF 112/ PHY 113	Preparatory Human Structure and Function II	4
PPHYM 112/ PHU 113	Physics for medicine and health sciences	3
PBIO 112/ BIO 113	Principles of Biochemistry	3
PENG 007	Preparatory English Level 7	3
PENG 008	Preparatory English Level 8	3

PENG 007, PENG 008: UPP criteria are available for exemption from English courses.

Year-2—Phase 2, Semester 3

Item #	Title	Credits
ENG 231	Medical terminology	2
CHM 232	Organic chemistry	4
ANT 233	Anatomy and histology	4
PHY 234	Physiology	3
MAT 235	Calculus	3
ARB 102	Elective/ Arabic language I	2

Year 2—phase 2, Semester 4

Item #	Title	Credits
MCH 241	Medicinal chemistry	4
BCH 242	Biochemistry	4
MIC 243	Microbiology	3
IMM 244	Immunology	2
BST 245	Biostatistics and basic research methods	3
ISL 102	Elective/ Islamic studies I	2

Year 3—Phase 2, Semester 5

Item #	Title	Credits
CAL 351	Pharmacy calculations	1
KIN 352	Pharmacokinetics	3
PHC 353	Pharmaceutics I: Dosage Forms and Stability	3
MIC 354	Advanced Microbiology	2
IMM 355	Clinical Immunology	1
PRC 356	Pharmacy Practice and Health Care Systems	3
ARB 113	Arabic Language II	2
	Elective for Pharm.D	3

Year 3—Phase 2, Semester 6

Item #	Title	Credits
PHC 361	Pharmaceutics II: Drug Delivery	2
PTH 362	Parenteral Therapy	2
REG 363	Pharmacy Regulations and Health Ethics	2
SCR 364	Self-care and Non-Prescription Drugs	1
BPH 365	Basic pharmacotherapy	3
BPH 366	Basic Pharmacotherapy '93case-based seminars'94	1
BPH 367	Pharmacotherapy of antimicrobial agents	3
ISL 113	Islamic Studies II	2

Year 4—Phase 3, Semester 7

Item #	Title	Credits
MTM 471	Medication therapy management	2
DIT 472	Drug information and evidence-based practice	3
IPH 473	Integrated pharmacotherapy I: -CVS and renal I	-3
IPH 474	Integrated pharmacotherapy I: -CVS and renal I '93case-based seminars'94	1
IPH 475	Integrated pharmacotherapy II: - MSK and - RES	3
IPH 476	Integrated pharmacotherapy II: -MSK and - RES '93case-based seminars'94	1
PCL 477	Patient care and health system management laboratory I	2
PHG 478	Pharmacogenomics and personalized medicine	2

Year 4—Phase 3, Semester 8

Item #	Title	Credits
KIN 481	Clinical Pharmacokinetics	2
ECO 482	Pharmacoeconomics and health outcomes	3
IPH 483	Integrated pharmacotherapy IV: Endocrine and women'92s health	3

IPH 484	Integrated pharmacotherapy IV: Endocrine and women'92s health '93case-based seminars'94	1
IPH 485	Integrated pharmacotherapy III: - CNS -	3
IPH 486	Integrated pharmacotherapy III: - CNS - '93case-based seminars'94	1
PCL 487	Patient care and health system management laboratory II	2
CAM 488	Complementary and Alternative Medicine	2

Summer

Item #	Title	Credits
IPP 489	Introductory pharmacy practice experience I (IPPE)	3

Year 5—Phase 3, Semester 9

Item #	Title	Credits
IPH 591	Integrated pharmacotherapy V:- CVS and renal II	3
IPH 592	Integrated pharmacotherapy V: CVS and renal II '93case-based seminars'94	1
IPH 593	Integrated pharmacotherapy VI: Infectious diseases	3
IPH 594	Integrated pharmacotherapy VI: Infectious diseases '93case-based seminars'94	1
PCL 595	Patient care and health system management laboratory III	2
IPP 596	Introductory Pharmacy Practice Experience II	2
	RES 5X6	0
	Elective II for Pharm.D	3

Year 5—Phase 3, Semester 10

Item #	Title	Credits
IPH 5X1	Integrated pharmacotherapy VII: Haematology/ Oncology/ palliative care and GIT	3
IPH 5X2	Integrated pharmacotherapy VII: Haematology/ Oncology/ palliative care and GIT '93case-based seminars'94	1
MSF 5X3	Medication safety and health informatics	3
PCL 5X4	Patient care and health system management laboratory IV	2
IPP 5X5	Introductory Pharmacy Practice Experience III	2
RES 5X6 B	Research project	3

6th year—Advanced Pharmacy Practice Experience Rotations (APPE)

Item #	Title	Credits
APP 600	Advanced pharmacy practice experience rotations - sixth year	4

Pre-requisite for all rotations are IPP 489, IPP 596, IPP 5X5

All students after finishing phase 3, are expected to finish 10 rotations for 45 weeks of advanced pharmacy practice experience. 5 core rotations are mandatory for all. From the elective rotations, (3-5) can be chosen from the selective/ elective rotations, and the remaining ones (0-2) are freely chosen from the free elective list. This proposed structure is the make most of the rotations focused on direct patient care and communication.


DONORS
Alfaisal University Celebrating
15 Years of Excellence

College of Science & General Studies

Dean's Message COSGS

It gives me great pleasure to warmly welcome you all to the College of Science and General Studies (CoSGS), which sets itself the task of nurturing science, the "key to innovation and inventions," and the foundation for advancement in all other branches of knowledge. The Bachelor of Science in Life Sciences offers two tracks for students to choose from: *Biological Sciences & Nanotechnology*, and *Environmental Sciences & Sustainability*.

I am truly delighted to be part of this diverse, competent, and vibrant academic community. As outlined in the College's Strategic Plan 2020-2025 (https://cos.alfaisal.edu/pdf/Strategic-Plan-COSGS-2020-2025.pdf) our vision is to be *a student-centered college distinguished for its world-class education, research, and outreach services.* Our mission is *to create and disseminate knowledge by offering world-class academic programs, cutting-edge research, and outreach activities that serve national development and benefit humanity.*

As a performance indicator, Alfaisal University was placed 36th globally by *Times Higher Education Young Universities Rankings 2022* (i.e., institutions less than 50 years old), as well as ranking 1st in the Kingdom and 1st in the Arab World (https://www.timeshighereducation.com/world-university-rankings/2022/young-university-rankings#!/page/0/length/25/locations/SAU/sort_by/rank/sort_order/asc/cols/stats).

Equipped with state-of-the art physical infrastructure and amenities, the CoSGS brings together nationally and globally eminent scholars in disciplines at the center of scientific inquiry as researchers and educators who take to heart the college vision and mission of supporting its students to achieve their academic and professional goals. Our well-developed academic departments and programs encompass the spectrum of life sciences, including environmental science & sustainability, chemistry, physics, mathematics, nanoscience, and nanotechnology, in addition to humanities and social sciences.

Our students receive a robust and career-focused education, along with advising and guidance through the years of their study. As doing research is not just an assignment but a vital interest, we get our students earnestly involved in both field and lab research. As an example of the innovation, in 2020-2021, a total of seven international patents were awarded to faculty, students, and staff in the College. A substantial achievement. Furthermore, our programs significantly contribute to the Saudi knowledge-based economy. Indeed, we take great pride in our alumni who are either pursuing their higher education in highly reputed western universities or enjoying the positions for which they are eligible in the Saudi job market, and beyond.

We welcome you to join our science programs

College of Science & General Studies General Information

Dr. Hassan Sami Shaibah	Dean of College of Science and General Studies Ph: +966112157874 E: hshaibah@alfaisal.edu
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Dr. Edreese Alsharaeh	Vice Dean GSR&QAA Ph: +966 11 215 7739 E: ealsharaeh@alfaisal.edu
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Dr. Amjad Fataftah	AUPP Director Ph: +966 11 215 7952

	E: afataftah@alfaisal.edu

COSGS Faculty Members

Abdel-Salam Al-Drouby, Instructor, Department of Humanities and Social Sciences, College of Science & General Studies. PGCE, Swansea University, UK.

Abdulrahman Ibrahim Soliman, Assistant Professor, Department of Chemistry, College of Science & General Studies. Ph.D., Virginia Commonwealth University, USA.

Alanoud Mohammed Albugami, Instructor, Department of Life Sciences, College of Science & General Studies. M.Sc. King Abdullah University of Science and Technology, KSA.

Ali Hendaoui, Assistant Professor, Department of Physics, College of Science & General Studies. Ph.D., University of Paris13, France.

Amber Lee Ragland, Instructor, Department of English, College of Science & General Studies. M.A., The University of Memphis, USA.

Amjad Kayid Fataftah, Assistant Professor, Department of Chemistry, College of Science & General Studies. Ph.D., Northeastern University, USA.

Amy Katherine Jones, Instructor, Department of English, College of Science & General Studies. M.A., Colorado State University, USA.

Bandar Ahmed Al Sabt, Assistant Professor of Islamic Studies, Department of Humanities and Social Sciences, College of Science & General Studies. Ph.D., King Saud University, KSA.

Chandra Sekhar Bongu, Post-Doc/Instructor, Department of Chemistry, College of Science & General Studies. Ph.D., Academy of Scientific and Innovative Research, India.

Charles Hall, Associate Professor, Department of English, College of Science & General Studies. Ph.D., University of Florida, USA.

Danny Salgado Jr, Instructor, Department of English, College of Science & General Studies. M.A., Murray State University, USA.

Dominic Castello, Instructor, Department of English, College of Science & General Studies. M.A., University of Birmingham, UK.

Edreese Alsharaeh, Professor, Department of Chemistry, College of Science & General Studies. Ph.D., Virginia Commonwealth University, USA.

Elizabeth Marnell, Instructor, Department of English, College of Science & General Studies. M.A., Write State University, USA.

Emily Wilson, Assistant Professor, Department of English, College of Science & General Studies. Ph.D., University of Michigan, USA.

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College of Science & General Studies: The Setting

Historical Context

The King Faisal Foundation (KFF) which was established in 1976 by the heirs of the late King Faisal launched Alfaisal University as the premier coeducational institution for business, engineering, science, and medical education and research in the Kingdom and the region. The deeply held principle of KFF was that a well-educated population was the foundation for a strong nation. The Foundation has always promoted a pragmatic approach to furthering the opportunities for Saudi youth. The creation of a university that strives to achieve excellence in several fields is yet another important advance towards fulfilling its desire to enrich the country's enterprising individuals with the ability to compete on a global level. Financial support provided by the King Faisal Foundation has also produced the King Faisal School, Prince Sultan College for Tourism and Business, and Effat College (for women).

Alfaisal University & the College of Science & General Studies

Alfaisal was established with the aim of being a private not-for-profit world-class university that offers its students the latest knowledge in a state-of-the-art environment. Alfaisal espouses all the noble virtues that form the bedrock of the Foundation's educational activities: to promote learning, research, and the implementation of technology in a manner that promotes the Kingdom's employment and career objectives for its citizens. Education at Alfaisal is international in approach with instruction in the English language. The programs are student-centered, utilize problem-based learning and foster team-based skills. Alfaisal will enable its graduates to gain internationally recognized qualifications through an exclusive education imparted to them from within the Kingdom itself.

Plans for establishing Alfaisal University began in 1999. The first "Concept Paper" regarding the University was prepared in late 2000 with the support of the Carlyle Group. It was submitted to the Economic Offset Committee in February 2001 to qualify the University under the Economic Offset Program.

Approval was received in July 2001. Four non-Saudi multinational companies agreed to become co-founders along with six Saudi organizations. In April 2003 the Offset Committee granted a multiple of eight offset credits to the non-Saudi co-founders for cash contributions. The Board of Trustees negotiated with the Ministry of Higher Education to secure an acceptable Charter that assured the independence of the University. The Charter (#10905) was approved by the Ministry on 10 July 2004 and unanimously ratified by the Board of Trustees on 25 October 2004.

The campus is situated on the beautiful grounds of the late King Faisal's Palace at Al Maathur in the center of Riyadh, a historical location ideal for academic pursuits. The first two campus buildings (Science and Business) were completed in 2008 and 2009, respectively. Students began University studies in Engineering, Business, and Medicine in October, 2008 with majors in the College of Science and General Studies beginning in September 2011. An MBA was initiated in 2010 and other graduate degrees in Engineering and Medicine were launched in 2012. The first females were admitted in September 2011. Today, the colleges of business, engineering, science, and medicine offer graduate programs within their respective colleges.

The College of Science and General Studies is predominantly a service college providing instruction in the areas of science, humanities, and social sciences for all colleges within Alfaisal University. The College offers this service at three distinct, yet complementary levels: preparatory year and undergraduate & graduate levels. The College offers an undergraduate program in Life Science & a graduate program in Nanoscience & Nanotechnology. Furthermore, a University Preparatory Program (UPP) which started as a separate entity ten years ago is now part of the University and is situated in the College of Science and General Studies.

Vision

A student-centered college distinguished for its world-class education, research, and outreach services.

Mission

To create and disseminate knowledge by offering world-class academic programs, cutting-edge research, and outreach activities that serve national development and benefit humanity.

Themes

Four strategic themes have been derived and are shown in the Figure 1.

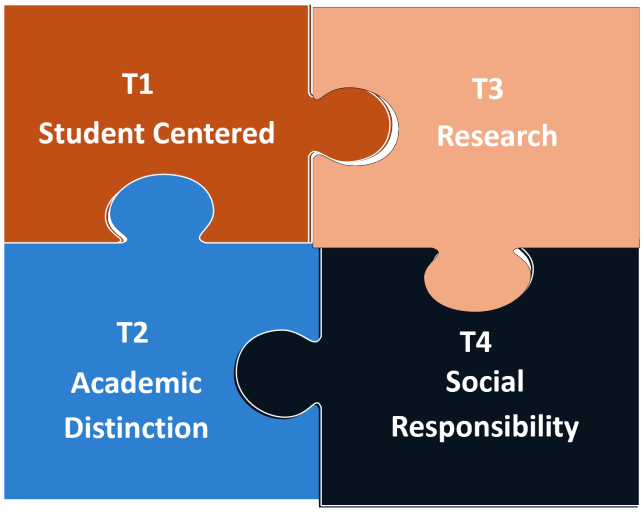

Figure 1: Four Themes of the Strategic Plan of COSGS

Accreditation

The Life Science Undergraduate Program is now fully accredited by *The Applied and Natural Science Accreditation Commission (ANSAC)* of ABET. This is with the formal approval of NCAAA in KSA. There are four Accreditation Commissions associated with ABET; Applied and Natural Science Accreditation Commission, Computing Accreditation Commission, Engineering Accreditation Commission, and Engineering Technology Accreditation Commission.. The formal decision will be announced in August 2024.

College of Science and General Studies Degree Programs

College of Science and General Studies Degree Programs

Bachelor of Science (B.Sc.) in Life Sciences

Vice Dean for Acaemic& Student Affairs: Ali Hendaoui, Assistant Professor, Department of Physics, College of Science & General Studies. Ph.D., University of Paris13, France.

Director of Life Science Program: Rashid Mehmood, Assistant Professor, Department of Life Sciences, College of Science & General Studies. Ph.D., Osaka University, Japan

Program History

The Life Sciences program at Alfaisal University is an interdisciplinary program at the interface of Biology, Chemistry, Environmental, and Biomedical Sciences. The program received the Ministry of Education's approval in 2013. The program aims to serve the national policy in developing a knowledge-based economy in key science areas such as biological, biomedical, chemical, environmental, and technology disciplines. The Kingdom has ample need for growth in basic science instruction to produce competent students who will contribute to sustainable development and economic growth. The program curriculum and training prepare the students to pursue further graduate studies in various fields, including biological sciences, biomedical sciences, environmental sciences, chemical sciences, and in biotechnology & nanotechnology fields.

Curriculum & Study Plan

The Bachelor of Science in Life Sciences offers two tracks for students to choose from: *Biological Sciences & Nanotechnology*, and *Environmental Sciences & Sustainability*. The first two years are common for all tracks, and in the 3rd year students start taking courses that are specific for the track of their choice. Student also have access to a variety of advanced electives courses to choose from including cancer biology, forensic science, medicinal chemistry, bioinformatics, and special topics. The Life Sciences Program requires a total of 134 credit hours for completing the program. This includes general education requirement & elective courses (23 credits), college requirement courses (25 credits), program requirement courses (53 credits), track requirement courses (18 credits), program electives (15 credits), and summer internship (0 credits). Student who meets requirement conditions may take one or more graduate courses to fulfill program graduation requirements (maximum of nine credit-hours).

	Course Code	Course Title	Credit Hours (CRHs)			Pre-Requisite Courses	Co-Requisite Courses
			Total	Lect.	Lab		
Gen. Edu. Requirements (14 Credit Hours)	ARB 101	Arabic Language I	2	2	0		
	ARB 112	Arabic Language II	2	2	0	ARB 101	
	ENG 101	Freshmen English I	3	3	0		
	ENG 112	Freshmen English II	3	3	0	ENG 101	
	ISL 101	Islamic Studies I	2	2	0		
	ISL 112	Islamic Studies II	2	2	0	ISL 101	
Free Electives	**Total Credit Hours = 6** * Any courses offered at Alfaisal * Transferred courses offered by other institutions (pre-approvals by CoS and SA are required)						
Hum. & Soc. Sci. Electives (1 course, 3 Credit Hours)	ANT 101	Anthropology	3	3	0		
	HIS 101	Islamic Civilization & Mediaeval Europe	3	3	0		
	PSY 101	Introduction to Psychology	3	3	0		
	SOC 101	Introduction to Sociology	3	3	0		
	*Any other Humanity & Social Sciences courses (FRE 101, GER 101, SPN 101, etc.)						
Science Core Courses (25 Credit Hours)	BIO 101	General Biology I	4	3	1		BIO 101L
	BIO 112	General Biology II	4	3	1	BIO 101	BIO 112L
	CHM 101	General Chemistry I	4	3	1		CHM 101L
	CHM 112	General Chemistry II	4	3	1	CHM 101/ or CHM 102	CHM 112L
	CSC 101	Introduction to Computer Science	3	3	0		

	Course Code	Course Title	Credit Hours (CRHs)			Pre-Requisite Courses	Co-Requisite Courses
			Total	Lect.	Lab		
	MAT 105	Calculus for Biomedical Sciences I	3	3	0		
	MAT 116	Calculus for Biomedical Sciences II	3	3	0	MAT 105	
Life Sciences Core Courses **(53 Credit Hours)**	BIO 223	Microbiology	4	3	1	BIO 112 CHM 112	BIO 223L
	BIO 224	Human Physio. & Anat.	4	3	1	BIO 112	BIO 224L
	BIO 346	Biochemistry I	4	3	1	BIO 224 CHM 212 PHU216 STA211	BIO 346L
	BIO 440	Biotechnology	3	3	0	BIO 223 ENV 205	
	CHM 211	Organic Chemistry I	4	3	1	CHM 112	CHM 211L
	CHM 212	Organic Chemistry II	4	3	1	CHM 211	CHM 212L
	CHM 310	Instrumental Analysis	4	3	1	CHM 212 PHU216 MAT116	CHM 310L
	ENV 205	Environ. Sci. & Sustainability	3	3	0	CHM 112	
	LSR 302	Research Methodology	3	3	0	ENG 112/ ENG 113	
	LSR 390	Life Sci. Summer Internship	0	0	0	LSR 302	
	LSR 421	Life Sci. Research Project I	3	0	3	LSR 302	
	LSR 422	Life Sci. Research Project II	3	0	3	LSR 421	
	LSR 423	Life Sci. Research Seminar	3	3	0	LSR 421	
	PHU 205	Mechanics & Waves for Life Sciences	4	3	1		PHU 205L
	PHU 216	Electromagnetism & Optics for Life Sciences	4	3	1	PHU 205	PHU 216L
	STA 211	Probability & Statistics	3	3	0	MAT 116	
BSN Track **(18 Credit Hours)**	**Biological Sciences & Nanotechnology (BSN) Track**						
	BIO 345	Molecular Biology I	4	3	1	BIO 223	BIO 345L
	BIO 357	Molecular Biology II	4	3	1	BIO 345	BIO 357L
	BIO 358	Biochemistry II	4	3	1	BIO 346	BIO 358L
	BIO 405	Human Genetics	3	3	0	BIO 345	
	BSN 430	Nanomaterials & Nanotechnology	3	3	0	CHM 310	
ESS Track **(18 Credit Hours)**	**Environmental Sciences & Sustainability (ESS) Track**						
	BIO 325	Conservation Biology	3	3	0	BIO 223	
	ENV 305	Environmental Health	3	3	0	BIO 223	
	ENV 330	Energy & Sustainability	3	3	0	ENV 205	
	ENV 410	Environmental Monitoring	3	3	0	CHM 310	
	ENV 420	Waste Management	3	3	0	ENV 205	
	ENV 425	Environ. Policy & Economics	3	3	0	ENV 205	
Program Electives **(5 Courses, 15 Credit Hours)**	CHM 213	Analytical Chemistry	3	3	0	CHM 112	
	CHM 232	Physical Chemistry	3	3	0	CHM 112	
	CHM 331	Medicinal Chemistry	3	3	0	CHM 212	
	CHM 332	Environmental Chemistry	3	3	0	CH M 211	
	ENV 310	Environ. Toxicology	3	3	0	ENV 205	
	ENV 315	Earth Systems	3	3	0	ENV 205	
	SCI 310	Forensic Science	3	3	0	ENG 112/ ENG 113	
	SCI 321	Immunology	3	3	0	BIO 224	
	SCI 322	Cancer Biology	3	3	0	BIO 224	
	SCI 323	Signal Transduction	3	3	0	BIO 224	
	SCI 325	Bioinformatics & Computational Genomics	3	3	0	BIO 224 STA 211	
	SCI 326	Virology	3	3	0	BIO 223	
	LST 421	Life Sci. Special Topics I	3	3	0	BIO 346	
	LST 422	Life Sci. Special Topics II	3	3	0	BIO 346	

	Course Code	Course Title	Credit Hours (CRHs)			Pre-Requisite Courses	Co-Requisite Courses
			Total	Lect.	Lab		
	* Student may take courses from other tracks or a graduate course with approval.						

Life Sciences 4-Year Study Plans

4-Year Curriculum: 134 Credit Hours (CRHs)

Study Plan: Biological Sciences & Nanotechnology						
	Fall (19 CRHs)			Spring (19 CRHs)		
1st Year	Course Code	Course Title	CRHs	Course Code	Course Title	CRHs
	BIO 101	General Biology I	(3+1)	BIO 112	General Biology II	(3+1)
	CHM 101	General Chemistry I	(3+1)	CHM 112	General Chemistry II	(3+1)
	CSC 101	Introduction to Computer Science	(3+0)	***	Humanity Course Elective	(3+0)
	MAT 105	Calculus for Biomedical Sciences I	(3+0)	MAT 116	Calculus for Biomedical Sciences II	(3+0)
	ENG 101	Freshmen English I	(3+0)	ENG 112	Freshmen English II	(3+0)
	ISL 101	Islamic Studies I	(2+0)	ISL 112	Islamic Studies II	(2+0)
	Fall (17 CRHs)			Spring (20 CRHs)		
2nd Year	Course Code	Course Title	CRHs	Course Code	Course Title	CRHs
	BIO 223	Microbiology	(3+1)	BIO 224	Human Physiology & Anatomy	(3+1)
	CHM 211	Organic Chemistry I	(3+1)	CHM 212	Organic Chemistry II	(3+1)
	PHU 205	Mech. & Waves for Life Science	(3+1)	PHU 216	Electro. & Optics for Life Science	(3+1)
	STA 211	Probability & Statistics	(3+0)	ENV 205	Environmental Science & Sustainability	(3+0)
	ARB 101	Arabic Language I	(2+0)	ARB 112	Arabic Language II	(2+0)
				***	Free Elective	(3+0)
	Fall (17 CRHs)			Spring (18 CRHs)		
3rd Year	Course Code	Course Title	CRHs	Course Code	Course Title	CRHs
	BIO 346	Biochemistry I	(3+1)	*BIO 358	Biochemistry II	(3+1)
	CHM 310	Instrumental Analysis	(3+1)	LSR 302	Research Methodology	(3+0)
	*BIO 345	Molecular Biology I	(3+1)	*BIO 357	Molecular Biology II	(3+1)
	***	Advanced Prog. Elective I	(3+0)	***	Advanced Prog. Elective III	(3+0)
	***	Advanced Prog. Elective II	(3+0)	***	Free Elective	(3+0)
	LSR 390	Life Sciences Summer Internship (0 CRHs)				
	Fall (12 CRHs)			Spring (12 CRHs)		
4th Year	Course Code	Course Title	CRHs	Course Code	Course Title	CRHs
	*BIO 405	Human Genetics	(3+0)	***	Advanced Sci. Elective IV	(3+0)
	*BSN 430	Nanomaterials & Nanotechnology	(3+0)	***	Advanced Sci. Elective V	(3+0)
	LSR 421	Life Science Research Project I	(0+3)	LSR 422	Life Science Research Project II	(0+3)
	BIO 440	Biotechnology	(3+0)	LSR 423	Integrative Life Science Research Seminar	(3+0)

*Track specific courses

*** Multiple courses to choose from (see program curriculum for the list of courses)

Study Plan: Environmental Sciences & Sustainability						
	Fall (19 CRHs)			Spring (19 CRHs)		
1st Year	Course Code	Course Title	CRHs	Course Code	Course Title	CRHs
	BIO 101	General Biology I	(3+1)	BIO 112	General Biology II	(3+1)
	CHM 101	General Chemistry I	(3+1)	CHM 112	General Chemistry II	(3+1)
	CSC 101	Introduction to Computer Science	(3+0)	***	Humanity Course Elective	(3+0)
	MAT 105	Calculus for Biomedical Sciences I	(3+0)	MAT 116	Calculus for Biomedical Sciences II	(3+0)
	ENG 101	Freshmen English I	(3+0)	ENG 112	Freshmen English II	(3+0)
	ISL 101	Islamic Studies I	(2+0)	ISL 112	Islamic Studies II	(2+0)
	Fall (17 CRHs)			Spring (20 CRHs)		
2nd Year	Course Code	Course Title	CRHs	Course Code	Course Title	CRHs
	BIO 223	Microbiology	(3+1)	BIO 224	Human Physiology & Anatomy	(3+1)
	CHM 211	Organic Chemistry I	(3+1)	CHM 212	Organic Chemistry II	(3+1)

	PHU 205	Mech. & Waves for Life Science	(3+1)	PHU 216	Electro. & Optics for Life Science	(3+1)
	STA 211	Probability & Statistics	(3+0)	ENV 205	Environmental Science & Sustainability	(3+0)
	ARB 101	Arabic Language I	(2+0)	ARB 112	Arabic Language II	(2+0)
				***	Free Elective	(3+0)
	Fall (19 CRHs)			**Spring (16 CRHs)**		
3rd Year	**Course Code**	**Course Title**	**CRHs**	**Course Code**	**Course Title**	**CRHs**
	BIO 346	Biochemistry I	(3+1)	*BIO 325	Conservation Biology	(3+0)
	CHM310	Instrumental Analysis	(3+1)	LSR302	Research Methodology	(3+0)
	*ENV 305	Environmental Health	(3+0)	*ENV 330	Energy & Sustainability	(3+0)
	***	Advanced Prog. Elective I	(3+0)	*ENV 410	Environmental Monitoring	(3+0)
	***	Advanced Prog. Elective II	(3+0)	***	Advanced Prog. Elective III	(3+0)
			(3+0)	***	Free Elective	
	LSR 390	**Life Sciences Summer Internship (0 CRHs)**				
	Fall (12 CRHs)			**Spring (12 CRHs)**		
4th Year	**Course Code**	**Course Title**	**CRHs**	**Course Code**	**Course Title**	**CRHs**
	*ENV 420	Waste Management	(3+0)	***	Advanced Prog. Elective IV	(3+0)
	*ENV 425	Environ. Policy & Economics	(3+0)	***	Advanced Sci. Elective V	(3+0)
	LSR 421	Life Science Research Project I	(0+3)	LSR 422	Life Science Research Project II	(0+3)
	BIO 440	Biotechnology	(3+0)	LSR 423	Integrative Life Science Research Seminar	(3+0)

*Track specific courses

*** Multiple courses to choose from (see program curriculum for the list of courses

College of Science & General Studies Academic Departments

DEPARTMENT OF CHEMISTRY

Chair

Dr. Amjad Fataftah

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General Department Information:

The Department of Chemistry seeks to be nationally and internationally recognized for its excellence in education, interdisciplinary research, and services. The department strives toward becoming a leading source of knowledge in the chemical and biochemical sciences and their multifaceted practical applications. We are committed to educating and preparing our students to excel and achieve their goals. Our faculty members are respected scholars in their fields, as well as dedicated teachers and mentors. Under the guidance of our faculty members, students have the opportunity to conduct cutting-edge research and to gain hands-on experience with modern instrumentations.

The Chemistry Department serves the local community and the Kingdom by offering world-class education, providing scientific leadership, training future leaders chemical and biochemical sciences, and by engaging in community services.

Chemistry Course Descriptions

CHM 101 General Chemistry I

Cr Hr: 3 Prerequisite: None Co-requisite: CHM 101 L

CHM 101 is the first-semester course of a two semesters General Chemistry sequence for students majoring in science or preparing for entry into health professional programs such as medicine, dentistry, pharmacy and veterinary science. CHM 101 provides a comprehensive introduction to the basic principles of chemistry, including atomic and molecular structure, properties of gases, liquids and solids, and chemical thermodynamics.

CHM 101 L General Chemistry I lab

Cr Hr: 1 Co-requisite: CHM 101

General Chemistry I Lab provides an introduction to the fundamentals of laboratory techniques in chemistry. Students will carry out measurements, prepare solutions, and perform qualitative and quantitative experiments.

CHM 102 Introduction to Chemistry

Cr Hr: 3 Prerequisite: None Co-requisite: CHM 102 L

CHM 102 is a single-semester, terminal course designed to provide engineering students with a foundation in the fundamental principles and concepts of chemistry. Topics covered include atomic structure, nomenclature, chemical equations, stoichiometry, thermochemistry, chemical bonding, solution properties, kinetics, equilibrium, electrochemistry, descriptive inorganic, nuclear chemistry, and bio/organic chemistry.

CHM 102 L Introduction to Chemistry lab

Cr Hr: 1 Co-requisite: CHM 102

Introduction to chemistry lab provides an introduction to the fundamentals of laboratory techniques in chemistry. Students will carry out measurements, prepare solutions, and perform qualitative and quantitative experiments.

CHM 107 Chemistry in the Environment and Everyday Living

Cr Hr: 3 Prerequisite: None

CHM 107 examines the role of chemistry in everyday life and the environment, and is intended for students not pursuing scientific or engineering majors. Chemical principles are introduced to the extent necessary for an understanding of issues.

CHM 112 General Chemistry II

Cr Hr: 3 Prerequisite: CHM 101 or CHM 102 Co-requisite: CHM 112 L

CHM 112 is the second of a two-semester chemistry course for science majors or those preparing for entry into health professional programs such as medicine, dentistry, pharmacy and veterinary science. CHM 112 builds on fundamental principles mastered in the first semester of the course.

CHM 112 General Chemistry II lab

Cr Hr: 1 Co-requisite: CHM 112 L

The general Chemistry II Lab (CHM 112 L) is designed to support and illustrate chemical concepts studied in the lecture portion of the course, as well as to introduce important laboratory techniques and encourage analytical thinking.

CHM 211 Organic Chemistry I

Cr Hr: 3 Prerequisite: CHM 112 Co-requisite: CHM 211 L

CHM 211 is the first semester of a two semester sequence for science majors and those preparing for entry into health professional programs such as medicine, dentistry, pharmacy and veterinary science. CHM 211 focus on bonding principles, functional groups, isomerism, stereochemistry, nomenclature, synthesis and reactions of alkanes, cycloalkanes, alkenes, alkynes, alcohols, and alkyl halides. Addition, elimination, rearrangement, and substitution mechanisms.

CHM 211 L Organic Chemistry I lab

Cr Hr: 1 Co-requisite: CHM 211

Organic chemistry I Lab provides an introduction to the fundamentals to laboratory techniques in organic

chemistry. This lab introduces students to chemical reactions and syntheses of aromatic, carbonyl, and amine compounds.

CHM 212 Organic Chemistry II

Cr Hr: 3 Prerequisite: CHM 211 Co-requisite: CHM 212 L

CHM 212 is a continuation of CHM 211. It covers nomenclature, properties, reactions and synthesis of conjugated dienes, aromatics, organometallics, alcohols, phenols, ethers, aldehydes and ketones, carboxylic acids and derivatives, and amines. Mechanisms include electrophilic aromatic substitution and nucleophilic addition. Carbohydrates, amino acids, proteins and nucleic acids

CHM 212 L Organic Chemistry II lab

Cr Hr: 1 Co-requisite: CHM 212

Organic chemistry II Lab (CHM 212 L) introduces students to chemical reactions and syntheses of aromatic, carbonyl, and amine compounds. Special topics in carbohydrate, amino acid, and lipid chemistry. Lab work includes simple and multi-step synthesis and spectral identification.

CHM 213 Analytical Chemistry

Cr Hr: 3 Prerequisite: CHM 112

Quantitative Analysis (CHM 213) provides a comprehensive introduction to the fundamental theory and laboratory techniques in analytical chemistry. This includes experimental errors and statistics, data analysis methods, chemical equilibria, titrations, spectrophotometry, and analytical separation methods.

CHM 232 Organic Chemistry

Cr Hr: 3 Co-requisite: CHM 232 L

CHM 232 provides the students with the essential knowledge required to define organic compounds and understand their properties, structures and actions. The students will determine the chemical structure using IR, NMR, and Mass Spectroscopy. The mechanisms of organic reactions, including addition, elimination, substitution, and rearrangement reactions will be discussed. Major organic chemical reactions covered in this course will help students understand subjects such as pharmacology and medicinal chemistry in the coming semesters.

CHM 232 L Organic Chemistry lab

Cr Hr: 1 Co-requisite: CHM 232

Organic chemistry Lab provides an introduction to the fundamentals to laboratory techniques in organic chemistry. This includes chemical reactions and syntheses of aromatic, carbonyl, and amine compounds discussed in CHM232 course.

CHM 310 Introduction to Instrumental Analysis

Cr Hr: 3 Prerequisite: CHM 212 Co-requisite: CHM 310 L

Introduction to the theories of analysis by instrumental methods. Basic electronics are applied to chemical measurements. Topics include an introduction to the theory of spectroscopy, ultraviolet, visible, infrared, and others. CHM 310 is an introduction to basic principles and the instrumental design of a variety of analytical techniques, including electrochemical, spectrochemical (molecular and atomic), chromatographical and mass spectrochemical techniques.

CHM 310 L Introduction to Instrumental Analysis lab

Cr Hr: 1 Co-requisite: CHM 310

Introduction to Instrumental Analysis lab (CHM 310 L) will introduce the basic analysis utilizing different instruments such as UV-visible spectrophotometer, IR, NMR, GC, HPLC, Potentiostat, and equipment relevant to the materials of CHM 310 course.

CHM 331 Medicinal Chemistry

Cr Hr: 3 Prerequisite: CHM 212

Medicinal Chemistry (CHM 331) will explore the role of chemistry in the design and action of drugs. Principles of drug discovery, drug development, drug interactions, and the structure-activity relationship of drugs will be discussed. Aspects of biochemistry and physical chemistry will be covered as required to

understand the chemistry of drug action and drug metabolism. Selected case studies from the major classes of drugs and literature will be used to illustrate concepts covered in the course.

CHM 320 Physical Chemistry

Cr Hr: 3 Prerequisite: CHM 212

Physical chemistr (CHM 320) focuses on the molecular approach of the fundamentals of physical chemistry for life science students. It will help to explain many scientific phenomena such as: molecular structures, molecular spectroscopy, the applications of statistical thermodynamics and the motion and dynamics of molecules.

CHM 332 Environmental Chemistry

Cr Hr: 3 Prerequisite: CHM 112 and CHM 211

The purpose of this course is to gain an understanding of the fundamental chemical and biochemical processes that are occurring in the environment. The course will reflect on major issues in the environment, including atmospheric chemistry, air pollution, climate change, energy, water chemistry and water pollution, toxic heavy metals, organic pollutants such as pesticides, herbicides, insecticides, and waste and recycling.

SCI 310 Forensic Science

Cr Hr: 3 Prerequisite: ENG112 (or ENG113)

This single-semester elective course is designed to provide students with a foundation in the fundamental principles and concepts of forensic sciences. This course introduces the theory, concepts and practices used in the analysis of physical evidence performed in forensic laboratories, the fundamentals of crime scene investigation, forensic DNA analysis, illicit drugs, and forensic toxicology, hair and textile analysis, firearms and ballistics, and counterfeiting and forgery. In addition, selected case studies in different forensic disciplines will be discussed.

ENV 205 Environmental Science & Sustainability

Cr Hr: 3 Prerequisite: CHM 112

This course is general in nature that provides a general introduction to environmental issues and sustainable development. It surveys the impacts that humans have on the environment such as pollution, climate changes, loss of agricultural land, etc. It reviews the principles of sustainability and their applications to energy, climate change, urban planning, transportation, water use, etc. The course will also address changes and steps that can be made to promote sustainability. Current environmental issues will be discussed to motivate students to be active members of society for enhancing environmental awareness and in taking action to address environmental issues and sustainability in KSA.

ENV 310 Environmental Toxicology

Cr Hr: 3 Prerequisite: ENV 205

Environmental toxicology is an elective course focusing on the study of toxic effects of environmental chemicals on living organisms (including humans). In this course, the basic concepts, methods, and approaches in environmental toxicology will be introduced. Natural and synthetic chemicals commonly encountered in the air, water, and soil will be discussed regarding their occurrence, fate and transport, and toxicological effects on ecological species and humans. Case studies will be used to illustrate the complexity of environmental toxicology issues. New trends in chemical toxicity testing will be discussed. Contaminants of emerging concerns such as pharmaceutical and personal care products and engineered nanomaterials will also be introduced.

ENV 315 Earth Systems

Cr Hr: 3 Prerequisite: ENV 205

This course focuses on the profound transformation of Earth's environment that is now apparent, a transformation owing not to the great forces of nature or to extraterrestrial sources but to the numbers and activities of people – the phenomenon of global change. This course sets out what is known about global change and the nature of the Earth System.

ENV 330 Energy & Sustainability

Cr Hr: 3 Prerequisite: ENV 205

This course will help students to understand the critical relationships of the environment, energy, and

sustainability. Leading experts provide comprehensive coverage of each topic, bringing together diverse subject matter by integrating theory with engaging insights. This course fills an information gap in energy, environment, and sustainability, presenting broad overviews of energy challenges and solutions along with the materials advances needed to enable rapid progress. The purpose of this course is to serve as a college-level that brings together the themes of environment and energy in the context of defining the issues, and subsequently focuses on the materials science and research challenges that need to be met.

ENV 410 Environmental Monitoring

Cr Hr: 3 Prerequisite: CHM 310

This course will cover introduction to environmental science, pollutants including chemical and biological and industrial hygiene. This will includes evaluating the various sampling techniques, pollutants and analytical techniques which can contaminate water, soil/surfaces and outdoor/indoor air. Furthermore, it will emphasize on environmental pollutants detection, hazards controlling, risk reduction, selection of the appropriate instrumentation techniques, calibration, quality control and reporting.

ENV 420 Waste Management

Cr Hr: 3 Prerequisite: ENV 205

This course covers the principles of waste management. It provides an overview of municipal waste, industrial waste, and hazardous waste management including design and economic analysis. Reviews physical, chemical, biological treatment of hazardous waste, and the innovative management practices associated with different waste. Students will be exposed to real world settings through worked examples, case studies, and field trips to water and solid waste management facilities. Case studies for specific industries like petrochemicals, fertilizers, desalination and petroleum refining, etc.

ENV 425 Environmental Policy & Economics

Cr Hr: 3 Prerequisite: ENV 205

This course explores the proper role of government in the regulation of the environment. It will help students develop the tools to estimate the costs and benefits of environmental regulations. These tools will be used to evaluate a series of current policy questions, including: Should air and water pollution regulations be tightened or loosened? What are the costs of climate change in the U.S. and abroad? Is there a "Race to the Bottom" in environmental regulation? What is "sustainable development"? How do environmental problems differ in developing countries? Are we running out of oil and other natural resources? Should we be more energy efficient? To gain real world experience, the course is scheduled to include a visit to the ministries and government institutions in KSA. We will also do an in-class simulation of discussions for and against specific case scenarios.

BSN 430 Nanomaterials & Nanotechnology

Cr Hr: 3 Prerequisite: CHM 310

The course is designed to introduce students to the emerging area of nanomaterials and nanotechnology. The course intends to prepare and train students in the evolving areas of nanoscience and nanotechnology which lies at the interfaces of chemistry, physics, and biology. It will cover the basic fundamentals of Nanoscience and Nanotechnology including properties of nanomaterials, nanoscale phenomena, synthesis and fabrication, and characterization of nanomaterials. In addition, the emerging and potential applications of nanomaterials will be reviewed with more focus on applications related to life sciences.

DEPARTMENT OF ENGLISH

Chair

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General Department Information

The English department exists to help Alfaisal students to be well-known for their dynamic critical thinking and communication skills as they interact across cultures and organizations. The first-year composition sequence takes a rhetorical approach to academic writing. Students begin by learning rhetorical analysis and then learn how to make effective choices as they compose their own arguments. The second semester emphasizes research, and students compose a full-length research report. This first year of reading, writing, analyzing, and researching prepares students for success in higher-level English electives as well as

academic writing assignments across the curriculum. For second-year students, there are ESP courses designed to match their specific needs as they begin more advanced work in their chosen fields.

ENG 101 Freshman English I

Cr Hr: 3 Prerequisites: none

A skills-based, writing-intensive course, English 101 develops the student's abilities to organize, visualize and write effective essays that use advanced rhetorical strategies needed for success in academic pathways. The course covers the writing process, oral and written rhetorical techniques, and grammatical elements specific to a variety of genres. Students will explore and analyze how language is used to achieve communicative goals common to academic writing in various genres through in-class writing activities, lectures, and homework assignments. This English course is a prerequisite to English 112 and counts toward partial fulfillment of the General Education requirements at Alfaisal University.

ENG 102 Freshman English I

Cr Hr: 2 Prerequisites: none

A skills-based, writing-intensive course, English 102 develops the student's abilities to organize, visualize and write effective essays that use advanced rhetorical strategies needed for success in academic pathways. The course covers the writing process, oral and written rhetorical techniques, and grammatical elements specific to a variety of genres. Students will explore and analyze how language is used to achieve communicative goals common to academic writing in various genres through in-class writing activities, lectures, and homework assignments. This English course is a prerequisite to English 113 and counts toward partial fulfillment of the General Education requirements at Alfaisal University.

ENG 112 Freshman English II

Cr Hr: 3 Prerequisites: ENG 101

As a continuation of ENG 101, ENG 112 focuses on developing the student's abilities to develop, organize, and effectively support arguments by incorporating primary and secondary research. The course continues to strengthen the writing process and the oral and written rhetorical moves and grammatical elements relevant to research genres. Students will explore and analyze how language is used to achieve communicative goals common to academic writing in these papers, through in-class writing activities, lectures, discussions, digital fora, and homework assignments. This English course is a prerequisite to ENG 222, and counts as a General Education requirement at Alfaisal University.

ENG 113 Freshman English II

Cr Hr: 2 Prerequisites: ENG 102

As a continuation of ENG 102, ENG 113 focuses on developing the student's abilities to develop, organize, and effectively support arguments by incorporating primary and secondary research. The course continues to strengthen the writing process and the oral and written rhetorical moves and grammatical elements relevant to research genres. Students will explore and analyze how language is used to achieve communicative goals common to academic writing in these papers, through in-class writing activities, lectures, discussions, digital fora, and homework assignments. This English course is a prerequisite to ENG 224, and counts as a General Education requirement at Alfaisal University. It is for medical students only.

ENG 222 Technical Writing

Cr Hr: 3 Prerequisites: ENG 101 and 112

In 21st century professional settings, writers are expected to produce a wide range of texts using different media. Because every technical writing situation is unique, this course will help students adapt their communication for different audiences, purposes, and environments. Creating a shared critical vocabulary will allow students to make well-informed choices in the technical writing they produce in their own pathway studies. While this course emphasizes writing, it also helps students develop the reading, listening, and speaking skills necessary to communicate effectively in a variety of workplaces, and it balances a theoretical approach with practical and extra-curricular means of learning. This course counts for a Humanities course in the University's General Education Requirements.

ENG 224 English for Medical Students

Cr Hr: 2 Prerequisites: ENG 102 and 113

ENG 224 (English for Medical Students) aims to develop fluency and confidence in using English in medical contexts. It also aims to increase EFL medical students' familiarity with medical written language and discourse in different medical contexts. The focus is on carrying out specialized activities in English, but attention is given to reading comprehension skills.

ENG 231 Medical Terminology

Cr Hr: 2 Prerequisites: none

Medical terminology is the study of the principles of building clinical terms used in health care professions. Students will be guided through this with a study of the roots, suffixes, and prefixes. Etymologies of words will also be emphasized. The course will cover the basic anatomy and function of the body's systems. There will be limited attention to pathology of disease.

ENG 301 Communication for Leaders

Cr Hr: 3 Prerequisites: a 200-level ENG course

This course explores the connection between language and effective leadership. Students will explore how leaders can use language to inspire, persuade, and influence their employees and followers, as well as how language can shape the image of leadership. Through analysis of various communication strategies and case studies of successful leaders, students will develop an understanding of the importance of discourse in leadership. Topics covered include rhetoric, communication styles, negotiation strategies, cultural differences in communication, and the use of language in crisis management. The course includes both theoretical and practical components, with opportunities for students to apply concepts through role-plays and group activities.

ENG 302 Artificial Intelligence and Digital Media

Cr Hr: 3 Prerequisites: a 200-level ENG course

New technologies are constantly making our communication tasks both easier and more complicated. Students will learn about a variety of digital media resources for communication. They will become familiar with AI-driven communication tools, including ChatGPT, social media algorithms, speech analysis, chatbots, and many other tools. Interactive class discussions as well as firsthand exploration of these tools will help students understand the incredible power as well as the challenges and limitations of using digital media and artificial intelligence for communication.

ENG 401 UX Research: Bridging Audience and Design

Cr Hr: 3 Prerequisites: a 300 level ENG course

Companies are increasingly using ethnographic methods as a cutting-edge way to collect information about user experience. This course introduces students to ethnographic methods as applied to business and industry. Students will develop tools necessary to collect, analyze, and interpret user data in a way that empowers companies to deliver better products and experiences to their target audiences.

ENG 402 Advanced Seminar in Communication

Cr Hr: 3 Prerequisites: a 300 level ENG course

This seminar will be a rotating list of topics, but will place a strong emphasis on oral communication, including presentations, meetings, and interviews. In an EdWeek article, "good oral communication skills got the #1 slot among the 15 job skills that executives and hiring managers identified as very important in new hires." Public speaking is an essential element of success in most jobs; yet it is often people's greatest fear. This course focuses on reducing fear by helping students learn, step by step, how to prepare and deliver engaging and persuasive presentations in both small and large group settings. Students also learn how to integrate audiovisual components effectively for maximum audience impact. The course's primary focus will be the preparation and delivery of presentations.

DEPARTMENT OF HUMANITIES & SOCIAL SCIENCES

Chair

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General Department Information:

The Department of Humanities and Social Sciences is the backbone of the different university colleges. It offers both General Educational Requirements, including Arabic, Islamic studies, and a wide range of free elective courses in anthropology, philosophy, psychology, history and foreign languages. In addition, the Department contributes to humanities and social sciences research and supports the college and university mission in serving the community.

Humanities and Social Sciences Course Descriptions

ISL 101 Islamic Studies I

Cr Hr: 2 Prerequisite: None

Introduces Islamic culture and stresses its importance and contribution to humanity. It presents Sharia Law in terms of sources, underpinnings, and objectives. It also enhances students' faith in the viability of Sharia Law and its all-inclusiveness. The course counts as a social science component of the university General Education Requirements.

ISL 102 Islamic Studies I

Cr Hr: 2 Prerequisite: None

Introduces Islamic culture and stresses its importance and contribution to humanity. It presents Sharia Law in terms of sources, underpinnings, and objectives. It also enhances students' faith in the viability of Sharia Law and its all-inclusiveness. The course counts as a social science component of the university General Education Requirements.

ISL 112 Islamic Studies II

Cr Hr: 2 Prerequisite: ISL 101

Introduces the community and family systems in Islam, their underpinnings and reform mechanisms. It examines the problems these systems encounter and shatters misconceptions about them. It also presents the application of Sharia Law in pertinent contexts. The course counts as a social science component of the university General Education Requirements.

ISL 113 Islamic Studies II

Cr Hr: 2 Prerequisite: ISL 102

Islamic Medical Jurisprudence introduces the importance of learning medicine in Islam and presents

the Islamic legislative rulings related to various medical issues. It also includes the principles of jurisprudence and their legislative objectives. It offers contemporary medical issues and Islamic legislative stances. The course counts as a social science component of the university General Education Requirements.

ARB 101 Arabic Language I

Cr Hr: 2 Prerequisite: None

Concentrates on developing Arabic language skills in paragraph writing, orthography, punctuation, style, vocabulary, and conversation in Standard Arabic. It also enhances students' literary appreciation and provides morphological and syntactic insight into text analysis. This course counts as a humanities course in the university General Education Requirements.

ARB 101 IN Arabic language I Intermediate Level

Cr Hr: 2 Pre-requisites: None

Offered to students who have studied 4-6 years of Arabic at school or students who have not studied Arabic after the sixth grade. It focuses on dictation rules, basic grammar, literary appreciation, lexicon search, and paragraph writing.

ARB 101NN Arabic language I for Non-natives

Cr Hr: 2 Pre-requisites: None

Offered to students whose native language is not Arabic or students who have studied three years or less of Arabic at school. The course introduces the fundamental elements of the Arabic language within a cultural context. Emphasis is placed on the development of the basic language skills, vis., listening, speaking, reading, and writing, in addition to grammar and contextual vocabulary.

ARB 102 Arabic Language I

Cr Hr: 2 Prerequisite: None

Concentrates on developing Arabic language skills in paragraph writing, orthography, punctuation, style,

vocabulary, and conversation in Standard Arabic. It also enhances students' literary appreciation and provides morphological and syntactic insight into text analysis. This course counts as a humanities course in the university General Education Requirements.

ARB 112 Arabic Language II

Cr Hr: 2 Prerequisite: ARB 101

Focuses on developing students' Arabic language skills to higher proficiency levels in various domains, including essay writing and conversation in Standard Arabic. The course also introduces the different literary schools and their characteristics. It counts as a humanities course in the university General Education Requirements.

ARB 112 IN Arabic language II Intermediate Level

Cr Hr: 2 Pre-requisites: ARB 101 IN

As a continuation of ARB 101 IN, ARB 112 IN focuses on Arabic syntax, semantics, report and essay writing, and literary appreciation and evaluation.

ARB 112NN Arabic language II for Non-natives

Cr Hr: 2 Pre-requisites: ARB 101 NN

Continues and builds upon the fundamental elements of Arabic within a cultural context. Continued emphasis on the development of basic language skills, vis., listening, speaking, reading and writing in addition to grammar and contextual vocabulary.

ARB 113 Arabic Language II

Cr Hr: 2 Prerequisite: ARB 102

Focuses on developing students' Arabic language skills to higher proficiency levels in various domains, including essay writing and conversation in Standard Arabic. The course also introduces the different literary schools and their characteristics. It counts as a humanities course in the university General Education Requirements.

ANT 101 Introduction to Sociocultural Anthropology

Cr Hr: 3 Prerequisite: None

The course explores anthropology and its four major sub-branches. It focuses on the significance of sociocultural anthropology for appreciating the diversity of contemporary and past human cultures and creating an awareness of ethnographic research methods and diverse anthropological perspectives. It enhances students' understanding of the similarities and differences among human cultures and their appreciation of cultural constructions of realities.

ANT 102 Entrepreneurial Multiculturalism

Cr Hr: 3 Prerequisite: None

Presents interdisciplinary knowledge on how business cultures evolve in various societies around the world. It also explores why some individuals/social groups are more successful in entrepreneurship than others within the same societies and cross-culturally.

FRE 101 French I

Cr Hr: 3 Prerequisite: None

It introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of the basic language skills, vis. listening, speaking, reading, and writing, in addition to grammar and vocabulary skills.

FRE 112 French II

Cr Hr: 3 Prerequisite: FRE 101

It builds upon the fundamental elements of the French language within a cultural context. Continued emphasis is placed on the development of basic language skills, vis. listening, speaking, reading and writing in addition to grammar and vocabulary skills.

GER 101 German I

Cr Hr: 3 Prerequisite: None

It introduces the fundamental elements of the German language within a cultural context. Emphasis is placed on the development of the basic language skills, vis. listening, speaking, reading, and writing, in addition to grammar and vocabulary skills.

GER103 German I for CoM Students

Cr Hr: 3 Prerequisite: None

The course introduces the fundamental elements of the German language within a medical context. Emphasis is placed on the development of the basic language skills such as listening, speaking, reading, and writing, in addition to grammar and vocabulary skills that aim to prepare for basic communication in a working environment at German clinics and hospitals.

GER 112 German II

Cr Hr: 3 Prerequisite: GER 101

It builds upon the fundamental elements of the German language within a cultural context. Continued emphasis is placed on the development of basic language skills, vis. listening, speaking, reading and writing in addition to grammar and vocabulary skills.

GER 113 – German II for CoM Students

Cr Hr: 3 Prerequisite: GER 103

The course builds upon the fundamental elements of the German language within a medical context. Continued emphasis is placed on the development of basic language skills such as listening, speaking, reading, and writing, in addition to grammar and vocabulary skills that aim to prepare for basic communication in a working environment at German clinics and hospitals

HIS 101 Islamic Civilization and Mediaeval Europe

Cr Hr: 3 Prerequisite: None

The course introduces the foundations of Islamic civilization, its development and prosperity, places of contact between Europeans and Muslims, and means of influence, such as direct contact and the translation of Islamic books in science, medicine, philosophy, literature and the arts.

PSY 101 Introduction to Psychology

Cr Hr: 3 Prerequisite: None

The course introduces psychology and its key concepts, theories, research methods, and contributions to the understanding of human behavior. Topics include the nervous system, perception, motivation, learning and memory, social behavior, personality, developmental, and clinical psychology. The course also introduces past and current theories and contributions of eminent psychologists.

SOC 101 Introduction to Sociology

Cr Hr: 3 Prerequisite: None

Introduces the basic concepts in the field, research methods, and theories. It addresses the interrelations among human societies, individuals, groups and organizations. Topics include social interaction, social institutions, social stratification, community, and social change strategies. This course elaborates on the social structure of Saudi Arabian society, its social institutions and stages of social transformation.

DEPARTMENT OF LIFE SCIENCE

Chair

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General Department Information:

The mission of the Department of Life Sciences is to promote understanding of the function of molecules, cells, tissues and organs with a concentration on hereditary factors and genetic mechanisms controlling fundamental biological processes, particularly in relation to the human body; and to contribute to the training of the next generation of research scientists, biotechnological entrepreneurs, educators, biomedical and allied health professionals.

The Department of Life Sciences envisions becoming a recognized national and international center of academic excellence by providing of high quality education in a broad spectrum of modern interdisciplinary life sciences to produce competent biomedical and biotech professionals responsive to the needs of the society.

Life Sciences Course Descriptions

BIO 101 General Biology I

Cr Hr: 3 +1 Lab Prerequisite: None

The course covers major fields and fundamental principles of modern biology and provides a foundation for more in-depth and specialized studies during the following years. The course concentrates on the core concepts of modern biology and provides knowledge about the role of various biological macromolecules in cell physiology; how different types of cells are integrated into multicellular systems; molecular and chromosomal mechanism of heredity.

BIO 103 Introduction to Human Biology

Cr Hr: 3 Prerequisite: None

The course concentrates on the basic aspects of human biology and provides knowledge about the role of various biological macromolecules in the human body, how different types of cells are integrated into multicellular systems, and how organs and organisms develop and function. The course satisfies the General Education Requirements in Science.

BIO 112 General Biology II

Cr Hr: 3 +1 Lab Prerequisite: BIO 101

This is the second module of the general biology introductory course designed for the Life Science Major curriculum. It concentrates on the fundamental aspects of animal physiology with an emphasis on the human body. The course is focused on the evolution, development, structure, function, health and disease of major physiological systems and regulatory mechanisms coordinating their function in the human organism.

BIO 223 Microbiology

Cr Hr: 3 +1 Lab Prerequisite: BIO 112, CHM112

The course provides a basic understanding of modern medical microbiology with emphasis on the contribution microorganisms make to human health and welfare and intensive study of the processes by which microorganisms cause human disease, how the pathogens can be recognized (identified) and what steps can be taken for the prevention and treatment of infections. The emphasis will be placed on the development of observational, practical and analytical skills through supervised laboratory work and demonstrations.

BIO 224 Human Physiology and Anatomy

Cr Hr: 3 +1 Lab Prerequisite: BIO 112

The course covers human anatomy and physiology from a systems-based perspective, stressing the ways in which different physiological systems interact. Emphasis is on understanding the integration of human anatomy through biological function, development, evolutionary history and genetics. Several clinical examples are given to illustrate how human variation, including congenital defects, emerges from the interaction of development, form, and function.

BIO 345 Molecular Biology I

Cr Hr: 3 +1 Lab Prerequisite: BIO223

As the first module of the Molecular Biology course, BIO 345 concentrates on molecular mechanisms of genetic processes. This module explains how the flow of biological information from DNA to RNA to protein gives rise to the recognizable, inherited attributes of living organisms. It uses seminal experiments to introduce the students to basic classical and molecular genetics, and then expands on these themes to include genetic engineering and genomic approaches to these phenomena.

BIO 357 Molecular Biology II

Cr Hr: 3 +1 Lab Prerequisite: BIO 345

As the second module of the Molecular Biology course, BIO 357 concentrates on molecular mechanisms of cellular physiology and interactions. This module provides detailed knowledge of the structural organization and differentiation of eukaryotic cells as well as key processes in development that are based on cell-cell communication and cell movement. It introduces fundamental properties of the cytoplasm and the roles of the cytoskeleton in fundamental biological processes, including chromosome separation, cell motility and intracellular transport processes, as well as the evolution, function and biogenesis of cell organelles.

BIO 346 Biochemistry I

Cr Hr: 3 +1 Lab Prerequisite: BIO 224, CHM 212, PHU 216, STA 211

The two-module Biochemistry course concentrates on the chemical properties of biological macromolecules with particular attention to the relationship between structure and biological function. The first module specifically covers amino acids, the fundamentals of protein structure, the basics of enzyme catalysis and kinetics, lipids, and membrane structures, transport proteins, the physicochemical basis of signal transduction, vitamins and their functional role in the body.

BIO 358 Biochemistry II

Cr Hr: 3 +1 Lab Prerequisite: BIO 346

The second module of the Biochemistry course concentrates on the complexity of metabolic pathways and their regulation. It reviews the inter-linked metabolic processes involved in nutrient handling and homeostasis.

BIO 325 Conservation Biology

Cr Hr: 3 Prerequisite: BIO 223

This course is general in nature that provides a general introduction to conservation biology. Conservation Biology is the scientific study of the phenomena that affect the maintenance, loss, and restoration of biological diversity. Topics covered include: 1) the impacts of global warming, species invasions, and habitat destruction on biodiversity, 2) strategies developed to combat these threats, and 3) a consideration of key economic and ethical tradeoffs. Special attention will be paid to current debate and controversy within this rapidly emerging field of study.

ENV 305 Environmental Health

Cr Hr: 3 Prerequisite: BIO 223

The course examines the physical, biological and chemical factors affecting human health. The course also explores approaches to control the major environmental health problems in industrialized and developing countries. A range of topics are covered including how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; the scientific basis for policy decisions; and emerging global environmental health problems.

SCI 321 Immunology

Cr Hr: 3 Prerequisite: BIO 224

SCI 321 aims to provide students with an understanding of immunology and the immunological basis of some common and well-known diseases. The course will balance basic knowledge of the underlying complexity of the immune system, such as T and B cell receptor genes, the MHC and antigen presentation, with the application of immunological aspects to infectious diseases, cancer, inflammation and autoimmunity.

SCI 322 Cancer Biology

Cr Hr: 3 Prerequisite: BIO 224

This course will introduce the core aspects of cancer biology. Emphasis will be placed on molecular mechanisms of cancer pathophysiology - such as signal transduction, DNA damage and repair and regulation of cell division, death and senescence as well as on system biology, microevolution of tumors, interaction between tumor and organism. Existing and novel strategies of cancer prevention, diagnosis and treatment will be discussed.

SCI 323 Signal Transduction

Cr Hr: 3 Prerequisite: BIO 224

The concept of "signal transduction pathway" is one of the major advancement in our understanding of how living cell – a unit of life – is functioning: how it adapts to changing environment and communicates with neighbours in multicellular organisms. The perspective of "signal transduction" is essential to understand complex biological processes and diseases ranging from memory formation to diabetes and cancer. The course makes sense of the dizzying array of pathways used by the cell to communicate.

BIO 405 Human Genetics

Cr Hr: 3 Prerequisite: BIO345

BIO 405 will cover: 1) the genetic and molecular basis of heredity and inherited traits, 2) how genetics and genomics help to understand the human condition, including genetic diseases, cancer, and human evolution, 3) how basic and translational genetics

research is leading to improvements to human health, and 4) current ethical discussions related to human genetics.

SCI 325 Bioinformatics and Computational Genomics

Cr Hr: 3 Prerequisite: BIO112, STA211

The course is a combination of lectures and instructor-guided practical sessions. SCI325 will cover: 1) the theoretical basis of various comparative analyses of DNA and protein sequences, 2) how bioinformatics, genetics and genomics help to understand the population and evolutionary processes, 3) how computational genomic analyses generate testable hypotheses, and 4) a role of bioinformatics in conservation biology, current human genetics and medicine.

LST 421 Life Science Special Topics I

Cr Hr: 3 Prerequisite: BIO 346

LST courses introduces special topics relevant to Biomedical Science. The course subjects can be modified according to faculty availability, students' preferences and pathways.

LST 421 Epigenetics

The course will first review recent progress in understanding fundamental epigenetic mechanisms and events controlling normal human development and physiology, such as growth, metabolism and ageing processes together with environmental factors affecting the human epigenome. This will follow with reviews of the recent discovering of epigenetic etiology of some most significant human disorders.

BIO 440 Biotechnology

Cr Hr: 3 Prerequisite: BIO 223, ENV 205

The aim of this course is to provide a basic understanding of modern biotechnology and its applications. This course is focused on the molecular and genetic tools used to analyze and modify organisms to produce desired small molecules and proteins; discuss established and cutting-edge manipulation techniques in the field of synthetic biology. We will also cover the production of biofuels, bioplastics, amino acids, food additives, various bulk chemicals, and biopharmaceuticals.

LSR 302 Research Methodology

Cr Hr: 3 Prerequisite: ENG112

The course aims to provide students with the basic concepts of research, types of research and the research method. The ultimate aim of this course is to equip students with skills on how to formulate a research hypothesis, review literature, design research projects, acquire & analyze data and report the research findings. The students will also be introduced to research writing and ethical issues associated with research.

LSR 421~422 Life Science Research Project I&II

Cr Hr: 6 Prerequisite: LSR 302

The courses represent a two-semester-term individually guided investigation project involving laboratory work and/or computational investigation in some aspect of Biomedical Science. The background, results and conclusions of the study to be reported in the form of an oral presentation and progress report by the end of Fall semester, and a thesis and final defense at the end of the course.

LSR 423 Integrative Life Science Research Seminar

Cr Hr: 3 Prerequisite: LSR 421

LSR423 course is designed to train students to summarize results obtained during student research project courses, built up scientific hypotheses and discuss their merits in group seminars with an assessment of the subsequent self-directed learning in oral presentations, coursework or undergraduate thesis writing and defence. This course develops transferable skills associated with analysis and presentation of laboratory-based experimental research in Life Sciences in the form of poster and podium presentation.

SCI 326 Virology

Cr Hr: 3 Prerequisite: BIO 223

The course focuses on the principles of virus structure, replication and genetics. It will help the students appreciate the relevance of virology in the modern world, including the fields of vaccines, anti-viral drugs and cancer. Other acellular biological particles like prions are also discussed. The course reflects many recent developments in virology and offers deeper insights into the subject. Newly-discovered and emerging viruses are discussed.

DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCES

Chair

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General Department Information:

Mathematics are critical to understanding scientific and engineering concepts. Nature laws are described in a mathematical language, and engineering concepts are modeled and achieved through mathematical tools. The Department of Mathematics & Computer Science is endeavoring to become a world-class leader in mathematics and computer science by designing advanced programs and a vibrant environment for developing graduates with the solid academic and technical backgrounds. To achieve this challenging objective, the department is offering world-class education for our students and maintain high quality research programs. The department offers a wide selection of courses that allow students to acquire a solid base in mathematics and computer science. Our teaching is aimed at developing the students' analytical skills and critical thinking capacities, and to give the students the opportunity to discover the intellectual depth of mathematics & computer science, and their relations to other disciplines.

Mathematics and computer science play an ever-increasing role in many emerging fields of study, most notably in Engineering, Life Science and Physical Sciences. As the Kingdom moves towards knowledge-based industries, applied mathematics and computer science are considered strategic fields of national importance. As a support for the emergence and the rapid growth of the cited fields, the department offers a wide range of courses for Engineering, Life science, Medicine and Business programs.

Mathematics & Computer Science Course Descriptions

CSC 101 Introduction to Computer Science

Cr Hr: 3 Prerequisite: None

This course provides an introduction to a disciplined approach to computer programming and problem solving, utilizing a block-structured high-level language, with an emphasis on procedural abstraction and good programming style. Students will apply programming skills in solving a variety of problems. Algorithmic concepts are also introduced. This course also provides a survey study of data structures and data abstraction, and an introduction to complexity considerations and program verification.

MAT 100 Pre-calculus

Cr Hr: 3 Prerequisite: None

This course builds sound and strong basic mathematics that are required for studying undergraduate mathematics. This course is particularly important to students whose mathematical skills are not sufficiently developed at the high school level. The course covers materials that include algebraic operations, radical and rational expression, equalities and in-equalities, functions and analytic geometry, special types of functions (linear, quadratic, inverse, polynomial, rational, exponential, logarithmic and trigonometric), solution to equations, and identities involving some types of functions.

MAT 101 Calculus I

Cr Hr: 3 Prerequisite: None

This course introduces the basic concepts of mathematical analysis used in science and engineering. The course teaches an introduction to differential and integral calculus. Topics include limits; the derivative; rates; Newton's method; the mean-value theorem; max-min problems; the integral and the fundamental theorem of integral calculus; areas, volumes, and average values.

MAT 105 Calculus for Biomedical Sciences I

Cr Hr: 3 Prerequisite: None

This course offers a solid introduction to differential and integral calculus and is designed for students in the biomedical sciences. The course begins with an intensive review of important topics from pre-calculus and an introduction to discrete time and population models. Then it proceeds to cover limits, continuity, differentiation, derivative rules, curve sketching, optimization, difference equations, anti-derivatives, Riemann sums, definite integral, fundamental theorem of calculus, applications of integration.

MAT 111 Business Calculus

Cr Hr: 3 Prerequisite: MAT 100

The main objective of this course is to help the student in understanding the basic concepts of calculus on the one hand, and to develop the skills needed for using calculus as a viable tool to solve problems that arise in the study of business and economics. Topic covered include, limits, types of functions (polynomial, rational, exponential and logarithmic), their derivatives, anti-derivatives and their various applications.

MAT 112 Calculus II

Cr Hr: 3 Prerequisite: MAT 101

This course is a continuation to Calculus I. The course covers basic mathematical analysis and mathematical tools that are widely used and are essential for mathematical analysis and applications. Topics include sequences; infinite series; power series; conics; polar, cylindrical, and spherical coordinates; vectors and the geometry of space; and vector valued functions.

MAT 116 Calculus for Biomedical Science II

Cr Hr: 3 Prerequisite: MAT 105

This course is a continuation of MAT 105. The course covers further integration techniques, such as integration by parts, by substitution and by partial fractions. Other topics include improper integrals, sequences and series, convergence tests, power and Taylor series, solving differential equations, limits and continuity of functions of two variables, partial derivatives, the double integral.

MAT 211 Calculus III

Cr Hr: 3 Prerequisite: MAT 112

This course deals with multi-dimensional calculus. It is designed primarily for engineering majors and is taken by other technical majors. The student will develop an understanding of limits and continuity of functions of several variables; compute partial derivatives and apply to optimization problems; set up and compute iterated integrals to compute areas, volumes of solids; understand and apply Green's Theorem, the Divergence Theorem and Stoke's Theorem.

MAT 212 Linear Algebra

Cr Hr: 3 Prerequisite: MAT 112

The course teaches an introduction to linear algebra. Topics include complex numbers, geometric vectors in two and three dimensions and their linear transformations, the algebra of matrices, determinants, and solutions of systems of equations, vector space, eigenvalues and eigenvectors.

MAT 213 Differential Equations

Cr Hr: 3 Prerequisite: MAT 112

This course is an introduction to the theory and application of ordinary differential equations and the Laplace transform. The main objective is for the student to develop competency in the basic concepts and master certain solution methods. Topics covered include linear and nonlinear first order equations; higher order linear differential equations; undetermined coefficients method; variation of parameters method; Cauchy-Euler equation; Laplace transform; linear systems solution; solution by series method.

MAT 224 Numerical Methods

Cr Hr: 3 Prerequisite: MAT 212, MAT 213

This course introduces the basic concepts of numerical analysis that are employed in science and engineering. It includes a solid introduction to the basic methods and approximation techniques in use, and to the reliability and accuracy of the approximations. Applications of the methods to simplified/model problems that represent real-life problems are also included. Programming skills (based on MATLAB/ OCTAVE) needed to implement the methods on a computer are also covered.

STA 211 Probability and Statistics

Cr Hr: 3 Prerequisite: MAT 116

STA 211 introduces the basics of probability and statistics as used in sciences. It covers introduction to probability, random variables, some common probability distributions, random vectors, sample statistics, regression, and applications in experimental sciences.

STA 212 Probability and Statistics for Engineers

Cr Hr: 3 Prerequisite: MAT 112

The course is designed to teach students the basics of probability and statistics as used in engineering and the sciences. The course covers introduction to probability theory, random variables, statistics, and regression.

DEPARTMENT OF PHYSICS

Chair

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General Department Information:

As a part of the College of Science and General Studies (COSGS) at Alfaisal University, the Department of Physics seeks to become a nationally and internationally recognized model in training of the next generation of Highly Qualified Personnel (HQP) in strategic sectors of a high relevance to the Kingdom of Saudi Arabia and worldwide, such as Energy (Alternative Energies), Nanotechnology and Health (Medical physics). This can be achieved by offering world-class education and training of students in Applied Physics. Capitalizing on high-caliber faculty, this objective will be strongly supported by cutting-edge research activities exploiting the exceptional local infrastructure. The ultimate goal is to serve the Kingdom of Saudi Arabia through contributing to the development of knowledge-based economy.

Physics is also valuable in different areas of biology, engineering, business and medicine. As such, the Physics Department of Alfaisal University is currently offering physics courses for life sciences, engineering, business and preparatory year medicine-pathway students.

Physics Course Descriptions

PHU 101 Astronomy

Cr Hr: 3 Prerequisite: None

This elective course is designed for College of Business students to fulfil part of their science requirements. The material of the course is presented in a survey manner using only pre-calculus mathematics. The covered material includes spectroscopy, telescopes, the solar system and its formation theories, the life cycle of stars, galaxies and the general structure of the universe, and an introduction to cosmology.

PHU 102 Science of Energy and the Environment

Cr Hr: 3 Prerequisite: None

This elective course is designed for College of Business students to fulfil part of their science requirements. The material of the course is presented in an interactive manner with the students with minimum use of mathematics. The course material covers topics ranging from basic energy concepts to fossil fuels, including oil and gas, renewable and nuclear energy sources and usage. The course also covers the environmental issues as they pertain to the Kingdom of Saudi Arabia, the Gulf region and globally.

PHU 103 Mechanics and Waves for Engineers

Cr Hr: 3 Co-requisite: MAT 101 (if not completed previously)

The material of this course requires knowledge of differential and integral calculus. The covered material is based on Newtonian Mechanics and includes the study of 1-, 2- and 3- Dimensional translational Motion and Rotation Motion kinematics and Dynamics, energy, power, momentum, impulse, Gravitation, periodic motion and mechanical waves.

PHU 103 L Mechanics and Waves for Engineers Labs

Cr Hr: 1 Co-requisite: PHU 103 (if not completed previously)

This material constitutes the laboratory related to the course PHU 103.

PHU 124 Electromagnetism and Waves for Engineers

Cr Hr: 3 Prerequisite: PHU 103 & MAT 101

The material of this course requires knowledge of differential and integral calculus. The covered material includes the basics of electricity and magnetism, electromagnetic radiation, and optics.

PHU 124 L Electromagnetism and Waves for Engineers Labs

Cr Hr: 1 Co-requisite: PHU 124 (if not completed previously)

This material constitutes the laboratory related to the course PHU 124.

PHU 205 Mechanics for Life Sciences

Cr Hr: 3 Prerequisite: None

This course is the first of a two-semester sequence that introduces the basic concepts of algebra-based physics. It deals in essence with classical mechanics. The topics covered include particle kinematics and dynamics; conservation of energy and linear momentum; rotational kinematics and angular momentum; simple harmonic motion and fluids.

PHU 205 L Mechanics for Life Sciences

Cr Hr: 1 Co-requisite: PHU 205 (if not completed previously)

This constitutes the laboratory related to the course PHU 205.

PHU 216 Electromagnetism and Optics for Life Sciences

Cr Hr: 3 Prerequisite: PHU 205

The material of the course is Algebra based. The covered material includes the basics of electricity and magnetism, electromagnetic radiation, and optics.

PHU 216 L Electromagnetism and Optics for Life Sciences Labs

Cr Hr: 1 Co-requisite: PHU 216 (if not completed previously)

This material constitutes the laboratory related to the course PHU 216.

Alfaisal University Preparatory Program General Information

Program Director, Dr. Amjad Kayed Fataftah, Assistant Professor of Chemistry

Website: https://cos.alfaisal.edu/en/upp

College of Science and General Studies/ University Preparatory Program (UPP)
Alfaisal University, P.O. Box 50927, Takhasusi Road
Riyadh-Kingdom of Saudi Arabia
Tel: + 966 11 2158901
Email: cos@alfaisal.edu

Welcome Message:

Welcome to the Alfaisal University Preparatory Program (AUPP). The AUPP is the launch of your academic journey and your bridge to your future major here at Alfaisal University. Our academic program is rigorous and challenging and your success in the program will require your best effort.

The AUPP is a center of excellence for both English and science instruction. As teachers and mentors, our experienced instructors are here to facilitate your learning as well as your transition to the college of your choice. They will challenge you and demand your best effort; you are advised to take advantage of their expertise and wisdom.

The AUPP will impart upon you lessons for life as well as the skills that you will need to succeed in your chosen career. We are confident that your experience here will be memorable and rewarding. Please know that your positive input and shared experiences are always appreciated and valued.

We invite you to visit our website for information on the course offerings, faculty, and academic resources as well as guidance on AUPP policies and procedures.

UPP Faculty Members

Abdulrahman Solima	Assistant Professor, University Preparatory Program, College of Science & General Studies Ph.D., Virginia Commonwealth University, USA
Amber Ragland	Instructor, University Preparatory Program, College of Science & General Studies M.Ed., The University of Memphis, USA
Amjad Fataftah	Assistant Professor, University Preparatory Program, College of Science & General Studies Ph.D., Northeastern University, USA
Amy Jones	Instructor, University Preparatory Program, College of Science & General Studies M.A., Colorado State University, USA
Danny Salgado	Instructor, University Preparatory Program, College of Science & General Studies M.A., Murray State University, USA
Dominic Castello	Instructor, University Preparatory Program, College of Science & General Studies M.A., University of Birmingham, UK
Elizabeth Marnell	Instructor, University Preparatory Program, College of Science & General Studies M.A., Wright State University, USA
Farid Amalou	Assistant Professor, University Preparatory Program, College of Science & General Studies Ph.D., École Polytechnique Fédérale de Lausanne, Switzerland
John Fulghum	Instructor, University Preparatory Program, College of Science & Genera Studies, M.A., The University of Memphis, USA
Justin Abel	Instructor, University Preparatory Program, College of Science & General Studies M.Ed., Eastern Washington University, USA
Lyndsey DeBoard	Instructor, University Preparatory Program, College of Science & General Studies M.A., Tennessee Technological University, USA M.Sc., Bangalore University, India
Mateen Khan	Associate Professor, University Preparatory Program, College of Science & General Studies Ph.D., Aligarh Muslim University, India
Michelle Vyncke	Instructor, University Preparatory Program, College of Science & General Studies M.A., Kings College, UK
Mohamed Kariapper	Assistant Professor, University Preparatory Program, College of Science & General Studies Ph.D., University of Warwick, UK
Roman Delgado	Instructor, University Preparatory Program, College of Science & General Studies M.A., Columbia University, USA
Saabia Qazi	Instructor, University Preparatory Program, College of Science & General Studies, M.Sc. Bangalore University, India.
Salem Abaalhareth	Instructor, University Preparatory Program, College of Science & General Studies M.Sc., California State University-East Bay, USA
Shauna Alkhatib	Instructor, University Preparatory Program, College of Science & General Studies M.S., Hamilton College & American Intercontinental University, Los Angeles, USA
Siddiq Abdullah	Lecturer, University Preparatory Program, College of Science & General Studies M.Sc., North Carolina Agricultural and Technical State University, USA
Steven Gomez	Instructor, University Preparatory Program, College of Science & General Studies M.A., California State University, USA
Tezra Jackson	Instructor, University Preparatory Program, College of Science & General Studies M.A., Pepperdine University, USA
Zain Musa	Instructor, University Preparatory Program, College of Science & General Studies B. Sc., University of Khartoum, Sudan

AUPP Curriculum and Exit Criteria

- Instructors will follow a unified syllabus and major assessment schedule for each course.
- Students registered for the same course, i.e., English, science, math, business, or engineering, but enrolled in different sections of the same course, will use the same textbooks, have the same syllabus, and take the same unified exams.
- The minimum passing grade for any AUPP English language course is C for all pathways. Any student earning a C- or below in an AUPP English language course must repeat the course. Under certain circumstances, a student may advance to the subsequent level based on the recommendation of the AUPP English department chair.
- To successfully exit the program and to enter Alfaisal University, students must score a minimum TOEFL ITP of 500+ (TOEFL iBT = 60+ or IELTS = 6.0+) for the following pathways: business, engineering, and science.
- Upon successful completion of PENG08, and to successfully exit the program and to enter Alfaisal University, students must score a minimum TOEFL ITP of 500+ (TOEFL iBT = 60+ or IELTS = 6.0+) for the following pathways: medicine and pharmacy; otherwise, to successfully exit the program and to enter Alfaisal University, students must score a minimum TOEFL ITP 550+ (TOEFL iBT = 79+ or IELTS = 6.5+).
- UPP students are not allowed to take any college level courses.
- All students who are repeating the UPP must repeat all the courses with no exception including

the ones that they passed. For repeated passed courses, UPP administration and SA will consider the highest grade.

The following pages contain detailed pathway-specific curriculum requirements for each of the AUPP pathway programs: medicine, pharmacy, science, engineering, and business.

- Medicine Pathway
- Pharmacy Pathway
- Science Pathway
- Engineering Pathway
- Business Pathway

Spring Direct Admission Criteria for Current UPP Business or Engineering Students

Current UPP business or engineering students must meet the following requirements in order to be eligible for spring direct admissions.

College of Engineering:

Requirement Type	Description
English Level	Students must score TOEFL ITP 500+ (or TOEFL iBT = 60+, IELTS = 6.0+, OOPT =C1), Complete English Level 7 with a minimum grade of B+
Required Grades	No course grade of "F"
Cumulative GPA	Students must pass all the required courses with a minimum Cumulative GPA 3.5/4.0
If the students were exempted from UPP-English:	
English Level	Exempted from English
Required Grades	No course grade of "F"
Cumulative GPA	Students must pass all UPP and Direct courses with a minimum Cumulative GPA 3.5/4.0

College of Business:

Requirement Type	Description
English Level	English Level Students must score TOEFL ITP 500+ (or TOEFL iBT = 60+, IELTS = 6.0+, OOPT =C1) or Complete English Level 7 with a minimum grade of B+.
Required Grades	No course grade of "F"
Cumulative GPA	Students must pass all the required courses with a minimum Cumulative GPA 3.00/4.0
If the students were exempted from UPP-English:	
English Level	Exempted from English
Required Grades	No course grade of "F"
Cumulative GPA	Students must pass all UPP and Direct courses with a minimum Cumulative GPA 3.0/4.0
NOTE: Oxford Online Placement Test (OOPT) cannot be used for AUPP English exemption.	

Bachelor of Science in Life Sciences

Program

College of Science and General Studies

Bachelor

Bachelor of Science (B.Sc.) in Life Sciences

The Bachelor of Science in Life Sciences offers two tracks for students to choose from: Biological Sciences & Nanotechnology, and Environmental Sciences & Sustainability. The first two years are common for all tracks, and in the 3rd year students start taking courses that are specific for the track of their choice. Student also have access to a variety of advanced electives courses to choose from including cancer biology, forensic science, medicinal chemistry, bioinformatics, and special topics. The Life Sciences Program requires a total of 134 credit hours for completing the program. This includes general education requirement & elective courses (23 credits), college requirement courses (25 credits), program requirement courses (53 credits), track requirement courses (18 credits), program electives (15 credits), and summer internship (0 credits). Student who meets requirement conditions may take one or more graduate courses to fulfill program graduation requirements (maximum of nine credit-hours).

General Education Requirements

Item #	Title	Credits
ARB 101	Arabic Language I	2
ARB 112	Arabic Language II	2
ENG 101	Freshman English 1	3
ENG 112	Freshman English II	3
ISL 101	Islamic Studies I	2
ISL 112	Islamic Studies II	2

Free Electives

- Any courses offered at Alfaisal
- Transferred courses offered by other institutions (pre-approvals by CoS and SA are required)

Humanities & Social Science Electives

1 course, 3 Credit Hours

Item #	Title	Credits
ANT 101	Introduction to Sociocultural Anthropology	3
HIS 101	Islamic Civilization and Mediaeval Europe	3
PSY 101	Introduction to Psychology	3
SOC 101	Introduction to Sociology	3

*Any other Humanity & Social Sciences courses (FRE 101, GER 101, SPN 101, etc.)

Science Core Courses

Item #	Title	Credits
BIO 101	General Biology I	4
BIO 112	General Biology II	4
CHM 101	General Chemistry I	4
CHM 112	General Chemistry II	4
CSC 101	Introduction to Computer Science	3
MAT 105	Calculus for Biomedical Sciences I	3
MAT 116	Calculus for Biomedical Science II	3

Life Science Core Courses

Item #	Title	Credits
BIO 223	Microbiology	4
BIO 224	Human Physiology and Anatomy	4
BIO 346	Biochemistry I	4
BIO 440	Biotechnology	3
CHM 211	Organic Chemistry I	4
CHM 212	Organic Chemistry II	4
CHM 310	Introduction to Instrumental Analysis	4
ENV 205	Environmental Science & Sustainability	3
LSR 302	Research Methodology	3
LSR 390	Life Science Summer Internship	0
LSR 421	Life Science Research Project I	3
LSR 422	Life Science Research Project II	3
LSR 423	Integrative Life Science Research Seminar	3
PHU 205	Mechanics for Life Sciences	4
PHU 216	Electromagnetism and Optics for Life Sciences	4
STA 211	Probability and Statistics	3

Biological Sciences & Nanotechnology (BSN) Track

Item #	Title	Credits
BIO 345	Molecular Biology I	4
BIO 357	Molecular Biology II	4
BIO 358	Biochemistry II	4
BIO 405	Human Genetics	3
BSN 430	Nanomaterials & Nanotechnology	3

Environmental Sciences & Sustainability (ESS) Track

Item #	Title	Credits
BIO 325	Conservation Biology	3
ENV 305	Environmental Health	3
ENV 330	Energy & Sustainability	3
ENV 410	Environmental Monitoring	3
ENV 420	Waste Management	3
ENV 425	Environmental Policy & Economics	3

Program Electives

5 Courses, 15 Credit Hours

Item #	Title	Credits
CHM 213	Analytical Chemistry	3
CHM 232	Organic chemistry	4
CHM 331	Medicinal Chemistry	3
CHM 332	Environmental Chemistry	3
ENV 310	Environmental Toxicology	3
ENV 315	Earth Systems	3
SCI 310	Forensic Science	3
SCI 321	Immunology	3
SCI 322	Cancer Biology	3
SCI 323	Signal Transduction	3
SCI 325	Bioinformatics and Computational Genomics	
SCI 326	Virology	3
LST 421	Life Science Special Topics I	3
LST 422	Life Sciences Special Topics II	3

*Student may take courses from other tracks or a graduate course with approval.

Life Sciences 4-Year Study Plans

Choose one track:

Study Plan: Biological Sciences & Nanotechnology

Fall (Year 1)

Item #	Title	Credits
BIO 101	General Biology I	4
CHM 101	General Chemistry I	4
CSC 101	Introduction to Computer Science	3
MAT 105	Calculus for Biomedical Sciences I	3
ENG 101	Freshman English 1	3
ISL 101	Islamic Studies I	2

Spring (Year 1)

Item #	Title	Credits
BIO 112	General Biology II	4
CHM 112	General Chemistry II	4
	Humanity Course Elective	3
MAT 116	Calculus for Biomedical Science II	3
ENG 112	Freshman English II	3
ISL 112	Islamic Studies II	2

Fall (Year 2)

Item #	Title	Credits
BIO 223	Microbiology	4
CHM 211	Organic Chemistry I	4
PHU 205	Mechanics for Life Sciences	4
STA 211	Probability and Statistics	3
ARB 101	Arabic Language I	2

Spring (Year 2)

Item #	Title	Credits
BIO 224	Human Physiology and Anatomy	4
CHM 212	Organic Chemistry II	4
PHU 216	Electromagnetism and Optics for Life Sciences	4
ENV 205	Environmental Science & Sustainability	3
ARB 112	Arabic Language II	2
	Free Elective	3

Fall (Year 3)

Item #	Title	Credits
BIO 346	Biochemistry I	4
LSR 302	Research Methodology	3
BIO 345	Molecular Biology I	4
	Advanced Prog. Elective I	3
	Advanced Prog. Elective II	3

BIO 345: Track specific course

Spring (Year 3)

Item #	Title	Credits
BIO 358	Biochemistry II	4
CHM 310	Introduction to Instrumental Analysis	4
BIO 357	Molecular Biology II	4
	Advanced Prog. Elective III	3
	Advanced Prog. Elective IV	3

BIO 358, BIO 357: Track specific courses

Summer (Year 3)

Item #	Title	Credits
LSR 390	Life Science Summer Internship	0

Fall (Year 4)

Item #	Title	Credits
BIO 405	Human Genetics	3
BSN 430	Nanomaterials & Nanotechnology	3
LSR 421	Life Science Research Project I	3
LST 421	Life Science Special Topics I	3

BIO 405, BSN 430: Track specific courses

Spring (Year 4)

Item #	Title	Credits
BIO 440	Biotechnology	3
	Free Elective	3
LSR 422	Life Science Research Project II	3
LSR 423	Integrative Life Science Research Seminar	3

Study Plan: Environmental Sciences & Sustainability

Fall (Year 1)

Item #	Title	Credits
BIO 101	General Biology I	4
CHM 101	General Chemistry I	4
CSC 101	Introduction to Computer Science	3
MAT 105	Calculus for Biomedical Sciences I	3
ENG 101	Freshman English 1	3
ISL 101	Islamic Studies I	2

Spring (Year 1)

Item #	Title	Credits
BIO 112	General Biology II	4
CHM 112	General Chemistry II	4
	Humanity Course Elective	3
MAT 116	Calculus for Biomedical Science II	3
ENG 112	Freshman English II	3
ISL 112	Islamic Studies II	2

Fall (Year 2)

Item #	Title	Credits
BIO 223	Microbiology	4
CHM 211	Organic Chemistry I	4
PHU 205	Mechanics for Life Sciences	4
STA 211	Probability and Statistics	3
ARB 101	Arabic Language I	2

Spring (Year 2)

Item #	Title	Credits
BIO 224	Human Physiology and Anatomy	4
CHM 212	Organic Chemistry II	4
PHU 216	Electromagnetism and Optics for Life Sciences	4
ENV 205	Environmental Science & Sustainability	3
ARB 112	Arabic Language II	2
	Free Elective	3

Year 3 (Fall)

Item #	Title	Credits
BIO 346	Biochemistry I	4
LSR 302	Research Methodology	3
ENV 305	Environmental Health	3
	Advanced Prog. Elective I	3
	Advanced Prog. Elective II	3
	Free Elective	3

ENV 305: Track specific course

Spring (Year 3)

Item #	Title	Credits
BIO 325	Conservation Biology	3
CHM 310	Introduction to Instrumental Analysis	4
ENV 330	Energy & Sustainability	3
	Advanced Prog. Elective III	3
	Advanced Prog. Elective IV	3

BIO 325, ENV 330: Track specific courses

Summer (Year 3)

Item #	Title	Credits
LSR 390	Life Science Summer Internship	0

Fall (Year 3)

Item #	Title	Credits
ENV 310	Environmental Toxicology	3
ENV 420	Waste Management	3
LSR 421	Life Science Research Project I	3
LST 421	Life Science Special Topics I	3

ENV 310, ENV 420: Track specific courses

Spring (Year 4)

Item #	Title	Credits
BIO 440	Biotechnology	3
ENV 425	Environmental Policy & Economics	3
LSR 422	Life Science Research Project II	3
LSR 423	Integrative Life Science Research Seminar	3

ENV 425: Track specific courses

Business Pathway

Program

Alfaisal University Preparatory Program

Track

Business Pathway

Semester I

Item #	Title	Credits
PENG 005	Preparatory English Level 5	4
PENG 006	Preparatory English Level 6	4
PTECH 101	Preparatory Technical Writing I	3
PAB 101	Preparatory Algebra for Business I	3
PBUS 101	Introduction to Business	4
PSCS 101	Study and Communication Skills	2

Semester II

Item #	Title	Credits
PENG 007	Preparatory English Level 7	3
PENG 008	Preparatory English Level 8	3
PTECH 112	Preparatory Technical Writing II	3
PAB 112	Preparatory Algebra for Business II	3
PBS 112	Business Statistics	3
PCS 112	Basic Computer Skills	3

1. Students must pass Algebra I and Introduction to Business with a minimum grade of **C.**
2. Students must score a minimum TOEFL ITP of 500+ (TOEFL iBT = 60+ or IELTS = 6.0+).
3. Students must pass all the required courses with a cumulative GPA of 2.5/4.0.
4. Students must pass all courses; a grade of **F** in any course will invalidate a pending exit.
5. Students must successfully complete the AUPP within one academic year, i.e., both the fall and spring semesters of an academic calendar year to exit the program.
6. *All PENG-exempt business pathway students are required to take PTECH101 and PTECH112.
7. **Note: *** = For students enrolled in PTECH101 and PTECH112, adjusted credit hours and contact hours are denoted by the asterisk as shown above in “Total no. of Hours.”
8. Students who fail Algebra I (PAB101) and/or Introduction to Business (PBUS101) in first semester, can repeat it in the second semester, and will take Algebra II (PAB112) and Business Statistics (PBS112) on the following summer course

Engineering Pathway

Program

Alfaisal University Preparatory Program

Track

Engineering Pathway

Semester I

Item #	Title	Credits
PENG 005	Preparatory English Level 5	4
PENG 006	Preparatory English Level 6	4
PTECH 101	Preparatory Technical Writing I	3
PPC 101	Preparatory Pre-Calculus for Engineering and Science I	3
PCHE 101	Preparatory Chemistry I	3
PPHYE 101	Preparatory Physics for Engineering and Science I	3
PSCS 101	Study and Communication Skills	2

Semester II

Item #	Title	Credits
PENG 007	Preparatory English Level 7	3
PENG 008	Preparatory English Level 8	3
PTECH 112	Preparatory Technical Writing II	3
PPC 112	Preparatory Pre-Calculus for Engineering and Science II	3
PCHE 112	Preparatory Chemistry II	3
PPHYE 112	Preparatory Physics for Engineering and Science II	3
PIE 112	Introduction to Engineering Innovation	3

1. Students must pass Pre-calculus II, Physics II, Chemistry II and Introduction to Engineering Innovation with a minimum grade of **C.**
2. Students must score a minimum TOEFL ITP 500+ (or TOEFL iBT = 60+ or IELTS = 6.0+).
3. Students must pass all required courses with a cumulative GPA of 2.5/4.0.
4. Students must pass all courses; a grade of **F** in any course will invalidate a pending exit.
5. Students must successfully complete the AUPP within one academic year, i.e., both the fall and spring semesters of an academic calendar year to exit the program.
6. *All PENG-exempt engineering pathway students are required to take PTECH101 and PTECH112.
7. **Note: *** = For students enrolled in PTECH101/ PTECH112, adjusted credit hours and contact hours are denoted by the asterisk as shown above in “Total no. of Hours.”

Medicine Pathway

Program

Alfaisal University Preparatory Program

Track

Medicine Pathway

Semester I

Item #	Title	Credits
PENG 005	Preparatory English Level 5	4
PENG 006	Preparatory English Level 6	4
PAM 101	Preparatory Algebra for Medicine	3
PCHE 101	Preparatory Chemistry I	3
PHSF 101/ PHY 103	Preparatory Human Structure and Function I	4
PSCS 101	Study and Communication Skills	2

Semester 2

Item #	Title	Credits
PENG 007	Preparatory English Level 7	3
PENG 008	Preparatory English Level 8	3
PPHYM 112	Preparatory Physics for Medicine	3
PCHE 112	Preparatory Chemistry II	3
PHSF 112/ PHY 113	Preparatory Human Structure and Function II	4
PBIO 112	Preparatory Biochemistry	3

1. Students must pass Chemistry II, Human Structure & Functions II, and Introduction to Biochemistry with a minimum grade of **B.**
2. Minimum passing grade for all other courses is **C.**
3. Students must pass all required courses with a cumulative GPA of 3.2/4.0.
4. Students must pass PENG08.
5. Students must score a minimum TOEFL ITP of 500+ (TOEFL iBT = 60+ or IELTS = 6.0+); in addition, to passing PENG08.
6. Students must pass all courses; a grade of **F** in any course will invalidate a pending exit.
7. Students must successfully complete the AUPP within one academic year, i.e., both the fall and spring semesters of an academic calendar year to exit the program.
8. **Note:** * = If English exempt, adjusted credit hours and contact hours are denoted by the asterisk as shown above in “Total no. of Hours.”

Pharmacy Pathway

Program

Alfaisal University Preparatory Program

Track

Pharmacy Pathway

Semester I

Item #	Title	Credits
PENG 005	Preparatory English Level 5	4
PENG 006	Preparatory English Level 6	4
PAM 101	Preparatory Algebra for Medicine	3
PCHE 101/ CHM 103	Chemistry I	3
PHSF 101/ PHY 103	Preparatory Human Structure and Function I	4
PSCS 101	Study and Communication Skills	2

Semester II

Item #	Title	Credits
PENG 007	Preparatory English Level 7	3
PENG 008	Preparatory English Level 8	3
PPHYM 112	Preparatory Physics for Medicine	3
PCHE 112	Preparatory Chemistry II	3
PHSF 112/ PHY 113	Preparatory Human Structure and Function II	4
PBIO 112	Preparatory Biochemistry	3

1. Students must pass Chemistry II, Human Structure & Functions II, and Introduction to Biochemistry with a minimum grade of **B.**
2. Minimum passing grade for all other courses is **C.**
3. Students must pass all required courses with a cumulative GPA of 3.2/4.0.
4. Students must pass PENG08.
5. Students must score a minimum TOEFL ITP of 500+ (TOEFL iBT = 60+ or IELTS = 6.0+); in addition, to passing PENG08.
6. Students must pass all courses; a grade of **F** in any course will invalidate a pending exit.
7. Students must successfully complete the AUPP within one academic year, i.e., both the fall and spring semesters of an academic calendar year to exit the program.
8. **Note:** * = If English exempt, adjusted credit hours and contact hours are denoted by the asterisk as shown above in “Total no. of Hours.”

Sciences Pathway

Program

Alfaisal University Preparatory Program

Track

Sciences Pathway

Semester I

Item #	Title	Credits
PENG 005	Preparatory English Level 5	4
PENG 006	Preparatory English Level 6	4
PTECH 101	Preparatory Technical Writing I	3
PPC 101	Preparatory Pre-Calculus for Engineering and Science I	3
PCHE 101	Preparatory Chemistry I	3
PPHYE 101	Preparatory Physics for Engineering and Science I	3
PSCS 101	Study and Communication Skills	2

Semester II

Item #	Title	Credits
PENG 007	Preparatory English Level 7	3
PENG 008	Preparatory English Level 8	3
PTECH 112	Preparatory Technical Writing II	3
PPC 112	Preparatory Pre-Calculus for Engineering and Science II	3
PCHE 112	Preparatory Chemistry II	3
PPHYE 112	Preparatory Physics for Engineering and Science II	3

1. Students must pass Chemistry II, Pre-calculus II, and Physics II, with a minimum grade of **C**.
2. Students must score a minimum TOEFL ITP of 500+ (or TOEFL iBT = 60+ or IELTS = 6.0+).
3. Students must pass all required courses with a cumulative GPA of 2.5/4.0.
4. Students must pass all courses; a grade of **F** in any course will invalidate a pending exit.
5. Students must successfully complete the AUPP within one academic year, i.e., both the fall and spring semesters of an academic calendar year to exit the program.
6. *All PENG-exempt Life Sciences pathway students are required to take PTECH101 and PTECH112.
7. **Note:** * = For students enrolled in PTECH101/ PTECH112, adjusted credit hours and contact hours are denoted by the asterisk as shown above in “Total no. of Hours.”

Courses

English for Specific Purposes

ESP 224 : English for Specific Purposes
This course is concerned with developing fluency and confidence in using English in medical contexts. It increases EFL medical students' familiarity with medical written language and discourse in different medical contexts. The focus is on carrying out specialized activities in English, but attention is given to reading comprehension skills (expanding the English general and medical vocabulary repertoire through extensive readings), academic and scientific writing skills, and technical medical terms as required.
Credits 3
Prerequisite Courses
ENG 102
ENG 113

Accounting

ACC 201 : Introduction to Financial Accounting
The course introduces students to the accounting equation, accounting cycle and preparation of financial statements, the framework within which financial statements are prepared, Generally Accepted Accounting Principles (GAAP), and users of such financial statements. As well, the course will cover inventory and accounts receivables.
Credits 3
Core Requirement
BCC
Prerequisites
ECO 101, MAT 100, ENG 101

ACC 202 : Introduction to Management Accounting
The course introduces students to the role of accounting information in business and investment decisions. It covers Job Order Costing, Process Costing, and Activity Based Costing methods used in manufacturing and service operations. The course explores the cost volume profit relationship, cost classifications: variable and fixed costs, standard costing, and budgeting; it also introduces the Balanced Scorecard as a performance measure.
Credits 3
Core Requirement
BCC
Prerequisite Courses
ACC 201
OPM 230

ACC 301 : Intermediate Financial Accounting I
The course provides students with depth knowledge and applied skills about the fundamentals of financial reporting, financial statements and their components, revenue recognition, cash control, recognition and measurement of accounts receivable, accounting for perpetual and periodic inventory systems, inventory costing methods, long-term asset recognition and measurement and their depreciation/amortization.
Credits 3
Core Requirement
MCC
Prerequisite Courses
ACC 201

ACC 302 : Intermediate Financial Accounting II
This is the second half of intermediate accounting. It focuses on the liability and equity side of the balance sheet. The topics covered include liabilities, contingencies, stockholders' equity, and earnings per share: both basic and dilutive EPS (dilutive securities), complex financial instruments, income taxes, pensions, post-retirement benefits, leases, accounting changes and error correction, and statement of cash flows.
Credits 3
Core Requirement
MCC
Prerequisite Courses
ACC 301

ACC 320 : Cost Accounting

The course provides students with a practical set of tools related to the use of accounting information in making business and investment decisions. It focuses on master budgets, inventory costing and capacity analysis, pricing decisions and cost management, cost allocation and customer profitability, spoilage & scrap, balanced scorecard, inventory management, and capital budgeting and cost analysis.

Credits 3

Core Requirement

MCC

Prerequisite Courses

ACC 202

ACC 330 : Zakat and Income Taxes

The course provides students with knowledge, skills, and theory of Zakat and Income Taxes. It introduces students to rules and regulations governing Zakat and Income Taxes in Saudi Arabia. Students learn the incomes that are subjected to Zakat and Income Taxes. As well, students learn how to determine taxable and Zakatable income and what income components should be included in both income taxes and zakat.

Credits 3

Core Requirement

MCC

Prerequisite Courses

ACC 202

ACC 390 : Financial Statement Analysis and Valuation

Valuation and performance are an important part of investment decisions which heavily relies on the information in financial statements. This course will familiarize students with the framework of analysis and valuation using financial statements and focus on how to extract information from financial statements and use that data for valuation.

Credits 3

Core Requirement

MCC

Prerequisites

FIN 201, ACC 301

ACC 410 : Advanced Financial Accounting

The course involves a detailed examination of equity investments, mergers, acquisitions, and consolidation of financial statements as well as intercompany transactions of depreciable and non-depreciable assets, intercompany bondholding, and other consolidation reporting issues, foreign currency transactions, and translation and consolidation of the financial statements of foreign operations.

Credits 3

Core Requirement

MCC

Prerequisite Courses

ACC 302

ACC 415 : Financial Statement Analysis & Valuation

Valuation and performance are an important part of investment decisions which heavily relies on the information in financial statements. This course will familiarize students with the framework of analysis and valuation using financial statements and focus on how to extract information from financial statements and use that data for valuation.

Credits 3

Prerequisite Courses

FIN 201
ACC 301

ACC 420 : Auditing and Assurance Services

Students learn how to assess the effectiveness of a company's accounting, internal control system, and risk management. It covers theory, concepts, professional and legal standards and procedures underlying audits of financial statements as well as techniques for gathering, summarizing, analyzing, and interpreting information reported in financial statements and procedures used in verifying this information.

Credits 3

Core Requirement

MCC

Prerequisites

ACC 302, OPM 230

ACC 425 : Special Topics in Taxation
This course will cover special topics in taxation which are relevant to the decent and expected developments in Saudi Arabia. The course will cover tax policy, system design, and technical issues involved in taxation which are not covered in the regular curriculum. One issue of immediate importance in the context of Saudi Arabia, for example, is indirect taxation. The course will therefore start with a particular emphasis on value-added and goods and services tax regimes. It will include local and cross-border taxation regimes, including the construction of the tax base, tax rates, and the operation of VAT/GST regimes. The course will also look at customs duties and other indirect taxes. The list of these topics will be changed and updated based on developments in the Kingdome'92s policies and needs.
Credits 3
Core Requirement
MCC
Prerequisite Courses
ACC 330

ACC 495 : Accounting Theory and contemporary Issues
This course introduces students to the general nature of accounting theory and its function in relation to problems confronting the accounting profession. Accounting practices including accounting rules, principles and processes are examined within the context of contemporary theoretical perspectives and socio-political behaviors of market participants.
Credits 3
Core Requirement
BEC
Prerequisite Courses
ACC 302

ACC 498 : COOP Training Internship
This course requires students to complete a four month placement as an internee in various local and international organizations across various sectors and industries in KSA. This is an important part of the BBA degree requirements which bridges the gap between theory and practice. Students will get a chance to get hands-on experience in a variety of areas related to Accounting including the application of the principles of financial and management accounting in decision making; diagnosing the financial health of companies and identifying drivers of performance; and be involved in the auditing process and know its impractical importance and implications.
Credits 12
Core Requirement
MCC
Prerequisites
MGT 490

Finance

FIN 201 : Principles of Finance
This is a core second-year course for all students in the College of Business. The course introduces students to the role of financial markets. Basic principles of ratio analysis, the time value of money, valuing fundamentals for financial assets such as bonds and shares will be explained.
Credits 3
Core Requirement
BCC
Prerequisites
OPM 101, MAT 111, ECO 102, ENG 112

FIN 310 : Financial Modelling
This is a third-year core unit for Finance major students. This course uses spreadsheets for financial analysis, risk analysis, valuations, investment management, credit analysis, scenario analysis, budgeting, sales forecast, financial projections, and project evaluation. The use of Excel as a tool for modeling, basic skills in recording, writing, and using Macros in Excel is also covered.
Credits 3
Core Requirement
MCC
Prerequisite Courses
FIN 201

FIN 320 : Corporate Finance

Corporate finance involves the financial management and value of business entities. In this course, the students investigate how managers make investment, financing, and dividend decisions. Investment decisions are based on discounted cash flow techniques and their extensions.

Credits 3

Core Requirement

MCC

Prerequisite Courses

FIN 201

FIN 330 : Financial Planning

This course is about making sure that values line up with how people spend and save. This course presents the basic theory and structure of individual financial planning and will analyze managing assets, credit, insurance needs, and investments, focusing on investments in stocks, bonds mutual funds, ETFs, and real estate. The course will also focus on insurance needs analyzing income and tax issues as they relate to investments. It will cover the development of lifelong financial, retirement, and estate planning. Students are required to develop an automated financial plan in MS Excel.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201

FIN 340 : Contemporary Financial Issues

This course examines current financial issues that are shaping the global financial environment. This course discusses and debates the relevance of traditional financial models in contemporary financial events. The unit further includes the analysis of business cycles from a finance perspective.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201

FIN 350 : Financial Markets and Institutions

The course explores the structure and activities of various financial institutions in the global financial system. The course examines the growing importance of Central Banking actions and policies on achieving macroeconomic objectives. The changing regulatory environment facing commercial banks since the global financial crisis of 2008 as well as the Saudi Mortgage Law are also covered in detail.

Credits 3

Core Requirement

MCC

Prerequisite Courses

FIN 201

FIN 377 : Fixed Income Securities

This is a basic course in the analysis of fixed income securities. The course focuses on the modern valuation techniques for a variety of fixed income securities based on an observed term structure of interest rates. Recognized topics include bond pricing, the Treasury Market, bond portfolio and risk management based on duration and convexity, yield-curve trading strategies, term structure estimation, and credit risk modelling.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201

FIN 380 : Corporate Governance:

This course examines the relationships between corporate managers, the boards of directors, and investors. The course reviews the responsibilities of the board, including financial statement approval, CEO performance assessment, executive compensation, and succession planning. With global brands at risk and mistakes instantly transmitted via the internet and social media, the reputational stakes are very high.

Credits 3

Core Requirement

BEC

Prerequisites

FIN 201, ACC 202, MGT 210

FIN 410 : Investments
This is a final year support class for students majoring in Finance. The course examines the theory and practice of portfolio management and security analysis through the implementation of advanced regression and Excel tools for empirical research and quantitative problem-solving. Students are required to develop an automated trading model in MS Excel.
Credits 3
Core Requirement
MCC
Prerequisites
ACC 301, OR FIN 350, OR FIN 320.

FIN 420 : International Finance
This course examines international financial markets, and the opportunities they present for achieving risk management and asset allocation objectives. The principal focus will be on assets traded in liquid markets: currencies, equities, bonds, swaps, and other derivatives. Analytical tools for risk and return measurement, portfolio management, and hedging will be examined.
Credits 3
Core Requirement
MCC
Prerequisite Courses
FIN 320

FIN 450 : Financial Trading Strategies
This course aims to introduce students to the global markets including international stock markets and indices, commodities, and currencies in the spot market. Students will learn the difference between fundamental and technical analysis and be able to make trading decisions. Moreover, the course provides the students with basic chart reading and analysis.
Credits 3
Core Requirement
BEC
Prerequisite Courses
FIN 201

FIN 467 : Banking Management
The course aims to introduce students to the banks and their services. Topics cover issues such as organization and structure of banks; financial statements of a bank; measuring and evaluation of bank performance; asset and liability management, hedging against interest rate risk, duration gap. Basel Agreement on International Capital Standards and regulations and reform will be introduced.
Credits 3
Core Requirement
MCC
Prerequisite Courses
FIN 320

FIN 498 : COOP Training Internship
This course requires students to complete a four month placement as an internee in various local and international organizations across various sectors and industries in KSA. This is an important part of the BBA degree requirements which bridges the gap between theory and practice. Students have the opportunity to get hands-on experience in a variety of areas related to mutual funds, alternative investment, asset allocations, portfolio management, risk management, corporate banking, Investing banking, venture capital, financial statement analysis and corporate valuation among many other finance applications.
Credits 12
Core Requirement
MCC
Prerequisites
MGT 490

Management

MGT 201 : Business Communication
This course introduces basic communication theory and its application to business functions. It covers a wide range of business communication concepts including business correspondence, presentations, report writing, messaging and emails, providing and receiving feedback, international business etiquette, effective use of the English language, and communicating across languages and cultures.
Credits 3
Core Requirement
BCC
Prerequisites
ECO 102, ENG 112

MGT 210 : Business Ethics

This course introduces students to ethical concepts and imparts the necessary analytical skills needed to solve moral dilemmas in business. It provides an assessment of the local and global trends within the area of corporate social responsibility, and an introduction to the moral principles guiding business practice.

Credits 3

Core Requirement

BCC

Prerequisites

ISL 112, ENG 101

MGT 230 : Organizational Behavior

This course provides a comprehensive overview of the applied behavioral sciences to the study of people at work in organizations. It covers the fundamentals of individual and group behavior and topics such as motivation, power and politics, and conflict and negotiations. It will also provide students with some experiential opportunities to develop leadership skills.

Credits 3

Core Requirement

BCC

Prerequisites

MGT 210, MAT 111, ENG 112

MGT 300 : Executive Lecture

This course focuses on the discussion of contemporary business and management issues by local and international leading executives from a wide range of organizations and industries. These seminars are intended to bridge the gap between the practical world of business and leadership and business education. All lectures are free and open to the public.

Credits 1

Core Requirement

BCC

Prerequisite Courses

ACC 202

MGT 301 : Business Law

This course focuses on the essential international principles of business law including contracts, negotiable instruments, banking law, insurance, agency and powers of attorney, forms of business organization, employment, criminal law and torts, intellectual property, and tax. These concepts will be introduced in assigned readings and in brief lectures by the instructor, and then explored by students in general discussion and other formats.

Credits 3

Core Requirement

BCC

Prerequisite Courses

MGT 201
MGT 210
MGT 230

MGT 350 : Human Resources Management

This course overviews the functions carried out by the Human Resource Management (HRM) departments and specialists. It addresses a wide range of topics such as personnel planning, recruitment and selection, performance assessment, training and development, and ethics in HRM.

Credits 3

Core Requirement

MCC in HRM and EFB

Prerequisite Courses

MGT 210

MGT 360 : Employee learning and development

This course aims at helping students understand the various steps needed to develop training and development programs. It demonstrates the importance of training in advancing organizational learning and overall motivation. Topics covered include needs analysis, learning theories, training design, methods, and delivery, transfer of learning, and training evaluation, costs, and benefits.

Credits 3

Core Requirement

MCC in HRM

Prerequisite Courses

MGT 230

MGT 370 : Human Resource Planning, Recruitment and Selection

This course presents the key organizational and managerial practices involved in Human Resource (HR) planning, recruitment, and selection. Topics covered include HR strategy, labor demand and supply, job analysis, methods and processes of recruitment, valid and reliable selection methods, and processes.

Credits 3

Core Requirement

MCC in HRM

Prerequisite Courses

MGT 230

MGT 373 : Negotiation

This course introduces the students, using role-playing simulations, to a wide range of negotiation concepts such as conflict management as a first party and as a third party, mediation, investigation, arbitration, and dispute resolution.

Credits 3

Core Requirement

MCC in HRM and EFB

Prerequisite Courses

MGT 230

MGT 374 : Real Estate

The course will provide an introduction to real estate with a broad overview of real property concepts and characteristics, legal considerations, influences on real estate values, types of value, economic principles, market area analysis, investment and financing issues, brokerage, development, and management.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201

MGT 375 : Introduction to Entrepreneurship

This course provides deeper insights into entrepreneurship and establishes entrepreneurial links with innovation. It maps out the practical steps of forming a brand-new company and addresses the strategic considerations for creating companies. The students will be exposed to various themes including entrepreneurial perspectives, launching entrepreneurial ventures, and formulation of the entrepreneurial plan.

Credits 3

Core Requirement

MCC in EFB

Prerequisite Courses

FIN 201

MGT 376 : Entrepreneurial Finance

This course is intended to empower students to be successful in developing and financing the ideas they bring to the market. The overriding orientation is to apply theory and methods of finance and economics to incubating and growing new ventures. The course focuses on value creation as the objective for all entrepreneurial strategic and financial decisions.

Credits 3

Core Requirement

MCC in EFB

Prerequisites

FIN 201, MKT 201

MGT 380 : Employee Relations & Engagement

This course introduces students to the various issues involved in the creation of productive and meaningful employee-employer relationships. It covers a wide range of concepts including employee relationship principles and models, local and regional labor law, employee engagement and participation, conflict management, grievance handling, and disciplinary procedures.

Credits 3

Core Requirement

BEC

Prerequisite Courses

MGT 230

MGT 383 : Organizational Leadership

This course serves as an introduction to leadership theory and practice. It examines different approaches toward leadership: traits, skills, behavioral and situational. It also analyzes different types of leadership, such as transformational leadership, adaptive leadership, servant leadership and authentic leadership. This course helps students to develop their leadership skills.

Credits 3

Core Requirement

MCC in HRM

Prerequisite Courses

MGT 230

MGT 390 : Total Reward Management

This course in the HRM portfolio explores the principles and practices of compensation and benefits in organizations from the holistic and comprehensive view of total reward management. Topics may include total reward strategy, job evaluation, reward systems, pay, and grade structures, benefits management, reward system auditing.

Credits 3

Core Requirement

MCC in HRM

Prerequisite Courses

MGT 230

MGT 393 : Managing Organizational Change

This course introduces the students to the challenges of managing change inside the organization. It helps them establish an in-depth understanding of how to manage organizational change as a systematic approach and equips them with tools for implementing strategic change across the organization. Students will also learn about challenges and opportunities associated with change.

Credits 3

Core Requirement

MCC in HRM and EFB

Prerequisite Courses

MGT 230

MGT 395 : Design Thinking

This course presents an introduction to the design thinking approach and mindset using highly interactive exercises that give the participants an understanding of techniques and methods of design thinking and awaken their innovative and problem-solving abilities. Design thinking is an iterative approach to solving problems. Through this course, students will be introduced to design management, strategic design, product/service design, and experience design.

Credits 3

Core Requirement

MCC in EFB

MGT 401 : Family Business Management

This course examines the business, personal and family issues found in family-owned and family-managed companies. We will discuss and propose solutions to the managerial, strategic, financial, and behavioural issues arising in family firms. We will analyse the subjects of ownership, succession, conflict resolution, sibling rivalry, compensation, attracting and retaining family and nonfamily talent, estate planning, and financing of the family firm.

Credits 3

Prerequisite Courses

MGT 230

MGT 420 : Human Performance Improvement

This is a senior course that focuses on managing people's performance in the workplace, contributing to organizational performance, and the essential skills that HRM practitioners and line managers need for internal consulting to design, facilitate, implement and evaluate performance interventions at a group (e.g. departmental) and organizational level.

Credits 3

Core Requirement

BEC

Prerequisite Courses

MGT 350

MGT 440 : Comparative HRM
This course explores the cultural relevance of HRM. The implementation of HRM theories across cultures is explored in-depth, along with various relevant topics including people management across cultures, cultural diversity, and other selected International HRM topics.
Credits 3
Core Requirement
BEC
Prerequisite Courses
MGT 360
MGT 390

MGT 443 : Comparative Management
This course provides a comprehensive foundation for understanding, interacting, and successfully managing today'92s multinational and multicultural organizations. It covers a wide range of issues ranging from assessing the international environment, exploring various cultures and communication methods, international negotiations and decision making to the creation of a global management team and international strategy formulation and execution.
Credits 3
Core Requirement
MCC in HRM
Prerequisite Courses
MGT 230

MGT 490 : Strategic Management
This course is a capstone that integrates the functional areas of marketing, accounting, finance, management, and operations into developing business strategies. It addresses a wide range of concepts such as internal and external factor analysis, business and corporate planning, strategic implementation, control, and evaluation.
Credits 3
Core Requirement
BCC
Prerequisites
MGT 230, OPM 340

MGT 499/HRM 498 : COOP Training Internship
This course requires students to complete a four months placement as an internee in various local and international organizations across various sectors and industries in KSA. This is an important part of the BBA degree requirements which bridges the gap between theory and practice. Students will get a chance to get hands-on experience in a variety of areas related to Human Resource Management including workforce planning, recruiting, training and development, compensation, and performance management as well as leadership development in the various local and international organizations across the various sectors and industries in KSA.
Credits 12
Core Requirement
MCC in HRM and EFB
Prerequisites
MGT 480, MGT 490

Marketing

MKT 201 : Principles of Marketing
This course presents a broad overview of the main marketing concepts and activities while also providing in-depth knowledge of key marketing issues such as segmentation, targeting, positioning, marketing environment, marketing information system, branding, customer relationship management, and the elements of the marketing mix. Case studies, client presentations will be used.
Credits 3
Core Requirement
BCC
Prerequisites
OPM 101, ECO 102, MAT 111, ENG 112

MKT 301 : E-Marketing

The E-marketing course provides a framework for understanding how the Internet and related technologies affect marketing. The course covers basic aspects of the technological part of Internet marketing (e.g. Internet development and applications). But the main focus will be on the business part. More specifically, the courses address marketing mix over the Internet, online consumer behavior, online market research, mobile marketing, E-CRM, Legal/ethical issues, and social media revolution.

Credits 3

Core Requirement

MCC

Prerequisite Courses

MKT 201

MKT 310 : Consumer Behavior

It covers major influences on the buying process, including affect, cognition, situational and cultural factors. Specific topics include attitudes, learning, intentions, product knowledge, involvement, attention, comprehension, social class, consumer decision-making, and behavioral change strategies among others. Key consumer behavior concepts and processes are emphasized using case studies, client presentations, and projects.

Credits 3

Core Requirement

MCC

Prerequisite Courses

MKT 201

MKT 315 : Services Marketing

It is designed to help students understand the unique characteristics of services and the marketing decisions related to them. The main objective of this course is to provide an in-depth understanding of marketing services with cases featuring a wide array of industries and organizations. Students will also be introduced to a customer service-oriented mindset. A range of assessment tools is used to facilitate learning in this course.

Credits 3

Core Requirement

MCC

Prerequisite Courses

MKT 201

MKT 320 : International Marketing

The course provides a comprehensive understanding of the issues and challenges inherent in the formulation and implementation of international marketing strategies. Key emphasis is placed on environmental forces affecting international marketing decisions, the selection of international target markets and the design of international marketing plans.

Credits 3

Core Requirement

MCC

Prerequisite Courses

MKT 201

MKT 330 : Marketing Research

The course covers current techniques and tools necessary for conducting marketing research. Exposition of these techniques will be offered along two dimensions: theoretical and practical. Marketing research emphasize topics such as problem definition, research design, secondary and primary data, questionnaire design, sampling, and measurement.

Credits 3

Core Requirement

MCC

Prerequisites

MKT 201, OPM 211

MKT 401 : Brand Strategy

This course provides a comprehensive and up-to-date treatment of the subjects of brands, brand equity, and strategic brand management'97the design and implementation of marketing programs and activities to build, measure, and manage brand equity. One of the book'92s important goals is to provide managers with concepts and techniques to improve the long-term profitability of their brand strategies. The course incorporates current thinking and developments on these topics from both academics and industry participants and combines a comprehensive theoretical foundation with enough practical insights to assist managers in their day-to-day and long-term brand decisions. Finally, illustrative examples and case studies of brands marketed all over the world will be discussed.

Credits 3

Core Requirement

MCC

Prerequisite Courses

MKT 201

MKT 410 : Integrated Marketing Communications
The course presents a comprehensive approach to creating and implementing advertising and sales promotions activities. Issues related to event sponsorships, direct marketing, public relations, and business/store image will also be covered. Relevant social, cultural, and ethical issues are emphasized. A range of assessment tools is used to facilitate learning.
Credits 3
Core Requirement
MCC
Prerequisites
MKT 310, OPM 230

MKT 420 : Marketing Strategy
The course covers the design and implementation of marketing strategies through linking marketing concepts and theories to real-life cases. It aims at understanding the entire marketing mix in light of the strategy of the firm. The ,main emphasis is placed on problem and opportunity recognition, decision making, segmentation, targeting, positioning, branding, competitive dynamics, and administering marketing programs.
Credits 3
Core Requirement
MCC
Prerequisite Courses
MKT 330

MKT 498 : COOP Training Internship
This course requires students to complete a four month placement as an internee in various local and international organizations across various sectors and industries in KSA. This is an important part of the BBA degree requirements which bridges the gap between theory and practice. Students will get a chance to get hands-on experience in a variety of areas related to Marketing including generating, analyzing, interpreting, and presenting marketing information using marketing research and innovative marketing tools related to consumer behavior, e-marketing, services marketing integrated marketing communications and marketing strategies.
Credits 12
Prerequisite Courses
MGT 490

Operations & Project Management

OPM 101 : Introduction to Computing
This course introduces the concepts of computer applications and their roles in managing business operations. It introduces students to the understanding of computer hardware, software, essential computer and Internet-based systems, and the latest MS Office applications. A substantial portion of the course will be dedicated to hands-on and excel based exercises.
Credits 3
Core Requirement
GER

OPM 211 : Business Statistics
This introductory course provides the student with an advanced overview of descriptive and inferential statistical methods. This course'92s topics include descriptive statistics, probability, probability distributions, sampling and sampling distributions, interval estimation, hypothesis testing, simple linear regression and correlation, and multiple regression analysis. In addition to relevant statistical theories, the course focuses on exercises and applications.
Credits 3
Core Requirement
GER
Prerequisites
OPM 101, MAT 111

OPM 230 : Management Information Systems
This course covers the use of ICT in managing activities and how MIS can be best integrated into the day-to-day operations of organizations. It will provide knowledge of primary methodologies and approaches that can be used to deal with business and operational needs in alignment with corporate business objectives. Some key topics covered in this course are the roles of MIS in organizations, management and the networked enterprise, and advanced excel features.
Credits 3
Core Requirement
BCC
Prerequisite Courses
OPM 101
ECO 102

OPM 310 : Introduction to Project Management and Tools

The course introduces the concepts and methodology of the project management and their usage by project manager to successfully complete the projects. A key aspect of the course is to manage project stakeholders and environment within the business context with due consideration to balancing the scope, cost, and time and quality constraints. The course explores and applies various tools and techniques such as Microsoft Project 2016 to effectively manage the projects.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 211

OPM 315 : E-Commerce (BE)

The course provides an overview of the basic elements of the technology infrastructure used to conduct Electronic Commerce. It examines the processes for business strategies that incorporate various forms of Electronic Commerce including business-to-business, business-to-consumer, and the business processes that support selling/purchasing activities. It reviews the designing and managing of online storefronts, Payment Systems, Security, and Privacy.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201
OPM 230

OPM 330 : Quantitative Methods for Business

This course covers deterministic models and techniques to optimally solve complex managerial problems. Topics include linear programming, networks, integer programming, decision trees, and sensitivity analysis. It also shows how to practically apply these techniques in different areas of an organization, such as marketing, production scheduling, financial planning, and make-or-buy decision.

Credits 3

Core Requirement

BCC

Prerequisite Courses

OPM 211

OPM 340 : Operations Management

The course studies the fundamental process for the production of goods and services in organizations with emphasis on understanding its relationship to other business areas. The course uses quantitative tools in production/operations for effective decision-making. It covers concepts such as operations strategy, process design, forecasting, capacity planning, scheduling, inventory management, and resource management. Filed trips are used to enhance the learning experience.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 330

OPM 360 : Principles of Logistics and Supply Chain Management

This course covers principles of supply chain management and provides techniques used to analyze various aspects of logistics systems. Key concepts such as procurement, sourcing, supply chain management, communication, warehousing, packaging, materials handling, demand management, distribution, and facility location are examined as an integral part of modern business. Field trips and business simulations are used to enhance the learning experience.

Credits 3

Core Requirement

MCC

Prerequisite Courses

ACC 202
OPM 230

OPM 370 : Quality Management

The course introduces analytical concepts and tools to accomplish business performance excellence. It exposes students to quality knowledge and quality improvement methods. It addresses the key issues of quality standards, principles, and practices. It also covers techniques of total quality including benchmarking, statistical process control, and continuous improvement.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 330

OPM 380 : Advanced Project Management

The course builds on OPM 310 with a focus on understanding and managing the business changes through the adoption and implementation of effective project management approaches to successfully achieve targeted business and project objectives. Additional contemporary project management concepts such as project management office and agile project management are taught. The course provides an advanced foundation on studying and maintaining the alignment between business strategic objectives and various operational and project management knowledge areas.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 310

OPM 390 : Special Topics in Operations Management

A survey course of selected topics in operations management in order to supplement available offerings. In this course, important concepts, and the state-of-the-art analytical techniques essential for managing the operations of any organization are covered. Topics such as MRP and ERP, scheduling, management of waiting lines, location planning and analysis.

Credits 3

Prerequisite Courses

OPM 340

OPM 425 : Special Topis in Operations Management

A survey course of selected topics in operations management in order to supplement available offerings. In this course, important concepts and the state-of-the-art analytical techniques essential for managing the operations of any organization are covered. In particular, topics such as MRP and ERP, scheduling, management of waiting lines, location planning, and analysis.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 340

OPM 450 : Management of Innovation

The course empowers students to deliver breakthrough innovations successfully into the world of business. The students explore techniques that seek major growth through innovations in products, services, and business models and develop the skills and gain the knowledge required to bring these innovations successfully to market. Business cases and projects are used to enhance the learning experience.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 330

OPM 485 : Project Risk Management

This course introduces essential analytical techniques to manage business management issues with focus on project risk management. The concepts and the theories of risks management are discussed together with management models and their adoption. The course will present the full life cycle of risk management including risks planning, identification, analysis (qualitative and quantitative), response strategies, monitor and control, and overall risk governance approach. Business cases and tailored exorcises are used for hands-on exercises to enhance students'92 learning and experience.

Credits 3

Core Requirement

MCC

Prerequisite Courses

OPM 310

OPM 498 : Operations and Project Management Internship

This course requires students to complete a four months placement as an internee in either a private or government organization. This is an important part of the BBA degree requirements which bridges the gap between theory and practice. Students have the opportunity to get hands-on experience in Operations and Project Management related areas, including planning, tracking, reporting, managing projects, and operations; overseeing supply chain management and logistics functions; assessing processes quality and risk.

Credits 12

Core Requirement

MCC

Prerequisite Courses

MGT 490

Architectural Engineering

ARE 110 : Architectural History and Theories
This course presents a survey of architectural styles of the past to the present time on the comparative methods. Emphasis includes the geographical, geological, climatic, religious, social and political influences.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
none
Corequisites
none

ARE 120 : Drafting and Drawing
The course is designed for students with little drafting background. Course content includes careers in drafting/engineering, use of drafting equipment, drafting techniques, lettering, geometric construction, multi-view and isometric drawings, sectional and auxiliary views, and basic dimensioning.
Credits 1
Lab Hours 0
Lecture Hours 1
Tutoring Hours 0
Prerequisites
none
Corequisites
none

ARE 120-S : Drafting and Drawing Lab
The course is designed for students with little drafting background. Course content includes careers in drafting/engineering, use of drafting equipment, drafting techniques, lettering, geometric construction, multi-view and isometric drawings, sectional and auxiliary views, and basic dimensioning.
Credits 2
Lab Hours 4
Lecture Hours 0
Tutoring Hours 0
Prerequisites
none
Co-Requisite Courses
ARE 120

ARE 201 : Architectural Design I
Students will study all the elements of architectural design and develop a sensitivity and awareness required for valid interpretations of design concepts. Students will design a small-scale architectural projects focusing on the notions of time and transformation in conceptual, structural, organizational and spatial terms. This distinct emphasis supports a unifying analytical and creative framework for increasingly complex architectural interventions. Analytical and experimental drawing techniques, including drawing plans, sections, elevations and perspectives, and model-making to inform and represent the transition from simple concepts into sophisticated and developed spatial designs.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ARE 120
Corequisites
none

ARE 202 : Architectural Design II
Students will complete commercial design study and advanced architectural design projects utilizing computer-aided design as well as traditional methods. Emphasis is placed on three-dimensional conceptualization, elements of design, site development, architectural history, color in design, computer generated 3D rendering, basic and advanced model building and time management skills.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ARE 201
Corequisites
none

ARE 220 : Construction Drawing (CAD)
The course teaches drawing and drafting and computer-aided design of architectural systems, and includes the preliminary design, analysis, and documentation of these systems. This will include first and third angle projections, solid modeling and the use of commercially available CAD software.
Credits 2
Lab Hours 0
Lecture Hours 2
Tutoring Hours 0
Prerequisites
ARE 120, ARE 232
Corequisites
none

ARE 220 S : Construction Drawing (CAD) Studio
The course teaches drawing and drafting and computer-aided design of architectural systems, and includes the preliminary design, analysis, and documentation of these systems. This will include first and third angle projections, solid modeling and the use of commercially available CAD software.
Credits 2
Lab Hours 4
Lecture Hours 0
Tutoring Hours 0
Prerequisites
ARE 120, ARE 232
Co-Requisite Courses
ARE 220

ARE 231 : Building Materials and Construction Technology
This course introduces construction materials and construction technology. Topics include construction terminology, materials and their properties, manufacturing processes, construction techniques and technologies, and other related topics. Upon completion, students should be able to detail construction assemblies and identify construction materials and properties.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 201
Corequisites
none

ARE 231 L : Building Materials and Construction Technology Lab
This course provides an understanding of the basic properties of construction materials and presents current field and laboratory standards and testing requirements for these materials such as Normal Consistency & Setting Time of Cement Past; Fresh and hardened properties of Mortar; Sieve Analysis of Aggregate; Specific Gravity of Aggregate; Unit Weight of Aggregate; Fresh and Mechanical Properties of Concrete; Mechanical Properties of Steel; Tests on wood.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
ME 201
Corequisites
ARE 231.

ARE 232 : Building Construction
This course introduces the student to the basics of building construction methods and techniques. It deals with the main elements and components of the building such as; site conditions, foundation systems, retaining walls, load bearing & masonry walls, skeleton R.C. structures, R.C. Footings, R.C. columns, R.C. floors & roofs, building insulation and protection, and staircases design, finishes and construction sequence.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 201
Corequisites
none

ARE 297 : Architecture and Buildings
This course presents an introductory study of the theory, history, principles and practice of architecture. It includes the basic principles of architectural analysis, criticism and aesthetic principles. It discusses the roles and responsibilities of the design professions, including interior design, landscape architecture, urban planning and engineering and how they relate to each other.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 110

ARE 302 : Indoor Air Quality Engineering
This course is designed to provide a fundamental knowledge about Indoor Air Quality (IAQ) and provide information about IAQ standards and laws. Participants will also learn the basics about how to implement the IAQ solution and perform IAQ audit in buildings.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 206
Corequisites
none

ARE 303 : Interior Design
The student will learn about design fundamentals as applied to the study and practice of interior design. Topics include color, space, form, light, furniture, windows, floors, and accessories. Class format includes illustrated lectures, discussions, and projects.
Credits 2
Lab Hours 0
Lecture Hours 2
Tutoring Hours 0
Prerequisite Courses
ARE 202
Corequisites
none

ARE 303 S : Interior Design Studio
The student will learn about design fundamentals as applied to the study and practice of interior design. Topics include color, space, form, light, furniture, windows, floors, and accessories. Class format includes illustrated lectures, discussions, and projects.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ARE 202
Co-Requisite Courses
ARE 303

ARE 311 : Building Acoustics
In this course, students will study the acoustical environment of buildings, including basic theory with an emphasis on room acoustics and mechanical system noise and vibration. Principles and their applications to sound insulation and testing will also be presented and discussed together with relevant standards and regulations.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 206
Corequisites
none

ARE 313 : Electrical Installations
Electrical Installations abound in any building. The Architecture Engineer is expected to have knowledge of the design, variety and maintenance of these Electrical Installations. This course will give the student a foundation course in power generation, distribution and control with respect to electrical installations in buildings.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 207
Corequisites
none

ARE 314 : Architectural Design III

In Architectural Design III, students will be introduced to the dynamic relationship between buildings, streets, and public open spaces, which can create a functional, attractive and sustainable built environment. This course emphasizes sustainability through forms and functions, the integration between various arrangement of buildings and spaces, and the utilization of new technologies and systems in designing and constructing buildings. It is an interactive course that accentuates evidence-based design and research. Students will complete design proposals and schemes to redevelop an urban site in the city of Riyadh; involving different factors: economic, social, and environmental. The emphasis will be placed on fitting architectural forms into historical, and cultural contexts; enabling desirable activity patterns; conceptualizing built form; providing necessary infrastructure and service systems.

Credits 2
Lab Hours 0
Lecture Hours 2
Tutoring Hours 0
Prerequisite Courses
ARE 202
Corequisites
none

ARE 314 S : Architectural Design III Studio

The emphasis of this design component is to utilize hands-on analysis and problem solving techniques to create a better arrangement and design of the site under investigation. You will have the opportunity to apply what you have learned through lectures and field research into your design. The design of your final project should meet the requirements of the site, and the aspirations of its users.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ARE 202
Co-Requisite Courses
ARE 314

ARE 315 : Lighting Systems and Applications

This is an introductory course to lighting systems, their designs and applications in buildings, for students who aspire to be architects, interior designers and building service engineers. It covers day-lighting, electric lighting and introduces the use of color.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
PHU 124
Corequisites
none

ARE 321 : Structural Mechanics

This course covers the analysis of construction materials and structural components in buildings: uniform and non-uniform torsion of structural shapes, analysis of determinate and indeterminate beams (including elastic foundation conditions) by classical methods, finite difference equations, numerical integrations, series approximation, elastic stability of beams and frames, lateral stability of beams, beams-columns, analysis of frames including the effect of axial compression. It also introduces the concepts, theories and methodologies for structural design for buildings.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 231
Corequisites
none

ARE 321 L : Structural Mechanics Lab

This course covers the analysis of construction materials and structural components in buildings: uniform and non-uniform torsion of structural shapes, analysis of determinate and indeterminate beams (including elastic foundation conditions) by classical methods, finite difference equations, numerical integrations, series approximation, elastic stability of beams and frames, lateral stability of beams, beams-columns, analysis of frames including the effect of axial compression. It also introduces the concepts, theories and methodologies for structural design for buildings.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ARE 231
Co-Requisite Courses
ARE 321

ARE 332 : Building Services Engineering

This course will cover the principles of building services engineering, which consists of three major modules: fire safety engineering, piped and gas services engineering and vertical transportation systems in buildings.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 206
Corequisites
none

ARE 332 L : Building Services Engineering Lab

This course will cover the principles of building services engineering, which consists of three major modules: fire safety engineering, piped and gas services engineering and vertical transportation systems in buildings.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
ME 206
Co-Requisite Courses
ARE 332

ARE 341 : The Built Environment

Through a series of modules dealing with different architectural issues and building types (Representation; Landscape; Dwelling; Commerce and Industry; Public Institutions; Sacred Spaces), students will be introduced to ideas and problems that affect the way in which the built environment has been and continues to be shaped in a variety of historical and cultural contexts. We will think broadly about how the spaces that people move through and inhabit in their daily lives shape and are shaped by human behavior, cultural identity, political experience, and the currents of historical circumstance. Contemporary buildings and projects will figure prominently as examples of how designers currently approach architectural, structural and urban problems. Local sites will serve as case-studies for the analysis of different aspects of the built environment. This class is taught in a seminar format with students evaluated on their class participation and assigned projects. Readings and projects will introduce students to a variety of techniques for analyzing and representing the built environment, providing the basic tools for subsequent architectural research and studies.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 297
Corequisites
none

ARE 355 : Quantity Surveying

Students will acquire knowledge of and understand basic concepts of: accepted drawing conventions and formats; how to read and interpret architectural and engineering drawings; what constitutes a set of drawings and how to locate cross-references, etc; how building specifications are prepared and structured; the purpose of measurement and estimating in the construction industry; how to measure simple architectural and engineering structures using basic measurement techniques; how to effectively describe items that have been measured; what the purpose of Standard Method of Measurement of Building Work is and how to use it; what are the standard building trades and why they have been identified; the definitions of building elements; how common construction rates are built-up including the constituents of material, labor, plant, overheads and profit; the inclusiveness and/or exclusiveness of rates and prices.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 220
Corequisites
none

ARE 400 : Special Topics in Architectural Engineering

This course provides instruction and experience in timely topics related to the Architectural Engineering field.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
Department Approval
Corequisites
none

ARE 405 : Structural Analysis

In this course students will study the methods of analysis for determinate and indeterminate structures under stationary and moving loads which include stability and determinacy of structures. They will also apply the basics of structural mechanics and design to analyze and optimize practical building structures using finite element analysis (FEA) software under various loading conditions.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 321
Corequisites
none

ARE 406 : Fundamentals of Reinforced Concrete Design

In this course, students will gain the ability to design and proportion structural concrete members including slabs, beams, and columns for strength as well as serviceability and economy.'a0'a0A practical understanding of the structural design process will be developed along with a theoretical understanding of the mechanics and behavior of reinforced concrete. Additionally, different types of reinforced concrete systems will be introduced.'a0 Students will develop a thorough understanding of the behavior and design of reinforced concrete members and systems and will be able to apply and effectively use the latest industry standard of formulas, tables, design aids, and/or computer software in the design of reinforced concrete members.'a0

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 203, ARE 405
Corequisites
none

ARE 409 : Project Management and Economics

In this course students will learn to solve economic problems related to construction and engineering, through studying construction project management theories and techniques, characteristics of construction organizations, equipment, and methods. Using project management software and the project life-cycle model from construction project simulations, or real life projects, students will organize, plan, monitor and control a construction project. Students learn to delineate the unique cost control methods for construction productivity, job cost, labor records, and material and equipment purchases. Construction site safety is emphasized throughout the course.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 355
Corequisites
none

ARE 410 : Contracts and Liabilities for Buildings and Construction

This course presents and discusses the legal aspects of engineering and construction contracts; contract formation, interpretation, rights and duties, and changes; legal liabilities and professional ethics of architects, engineers, and contractors. Upon completion of this course, students will be able to: (1) identify the elements of contract formation; (2) interpret contract clauses; (3) explain the rights and duties of the parties involved in design and construction; and (4) evaluate changes and their root causes. Students will also be able to objectively identify and analyze legal liabilities, ethical dilemmas, and the expected professional standard of architects, engineers, and contractors.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 355
Corequisites
none

ARE 412 : Environmental Management and Policy

The objective of this course is to develop an understanding of rational analysis, as well as decision making in issues concerning environmental economics and policy, taking into account the environmental impacts. Concept of externality of environmental impacts, market failure, social cost and benefit analysis, concept of environmental protection and policy instruments related to energy supply and consumption, environmental pollution control and abatement, case studies. Contemporary issues of environment at domestic, regional and international level: public participation and environmental concerns, acid rain, Montreal Protocol, UNFCCC and Kyoto Protocol.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 341
Corequisites
none

ARE 435 : Undergraduate Research in Architectural Engineering

In this course students will learn how to produce highly quality research about a novel topic mutually agreed between the instructor and the student related to the broad field of Architectural Engineering. The student and the faculty supervisor will complete and sign a research contract which includes a plan for the semester before the research begins. Students receive guidance and are mentored throughout the whole process. Students' progress is periodically assessed by the instructor and ultimately the students will produce a final report detailing their research results.

Credits 0
Lab Hours 0
Lecture Hours 0
Tutoring Hours 0
Prerequisites
Department Approval.
Corequisites
none

ARE 435 S : Undergraduate Research in Architectural Engineering Studio

In this course students will learn how to produce highly quality research about a novel topic mutually agreed between the instructor and the student related to the broad field of Architectural Engineering. The student and the faculty supervisor will complete and sign a research contract which includes a plan for the semester before the research begins. Students receive guidance and are mentored throughout the whole process. Students'92 progress is periodically assessed by the instructor and ultimately the students will produce a final report detailing their research results.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisites
Department Approval
Co-Requisite Courses
ARE 435

ARE 452 : Soil Mechanics and Foundations

The main objective of the course is to introduce students to the basic concepts of design and engineering of earth materials. After completion of the course, students should have a fundamental conceptual understanding of the mechanical behaviors of soils and rocks, which will provide them with the basic tools required in the solution of most geotechnical engineering problems.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 231
Corequisites
none

ARE 455 : Sustainable Buildings

This course presents the practice of creating building structures and using processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and deconstruction. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort. It addresses the full range of issues associated with sustainable buildings, including energy consumption, use of materials, health, assessment methods and environment concerns. It discusses the issues through lectures, tutorials and case study reviews that identify how they are integrated into the design of buildings.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 341

ARE 460 : Waste Management in Buildings

The course is designed to furnish the technical skills of future engineers responsible for the design, installation, operation and monitoring of public health and waste management systems required for the safe, comfortable and environmentally friendly operation of modern buildings.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 201
Corequisites
none

ARE 465 : Management Principles in Building Engineering

This course presents the management principles for building engineering, which include financial management, human resources management and organization of business.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 409
Corequisites
none

ARE 470 : Building Automation and Control

This course provides an integrated system approach to understanding building automation and control systems and their applications to building services. It covers the architecture, communication methods, and application software of modern building automation and control systems, and provides good working knowledge of how to specify, design, install, commission, operate, and maintain building automation and control systems. Application areas will include air-conditioning systems, fire detection and suppression systems, security systems, lighting systems, vertical transport systems and other essential building services. The lectures will be complemented by hands-on training sessions in labs.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 313

ARE 475 : Building Energy Management

This course gives a rigorous treatment of issues related to the judicious use of energy in the design and use of buildings is provided. Energy-efficient building services systems and system control, energy-conscious building design, building energy analysis, auditing, building envelope, energy-efficient lighting design, energy management programs, energy sources and conservation, rate schedules, waste-heat recovery, passive solar heating/cooling and day-lighting.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 313

ARE 477 : Smart Buildings

This course explores how a building'92s operational efficiency as well as occupants'92 productivity and safety can be improved through the use of advanced and smart technologies. Students will be introduced to principles of smart systems and green building systems, in addition to how these principles integrate and interact. Students will also learn the possibility and feasibility of utilizing the Internet of Things (IoT), especially in evaluating and transforming existing buildings into sustainable ones. Finally, students will work on a technical, hands-on projects where IoT and other technologies are used in monitoring and managing a building'92s sustainability variables.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 341
Corequisites
none

ARE 480 : Construction Economics and Finance

The course provides a framework for understanding and interpreting the economic and financial issues in relation to the construction industry, construction firms, and construction projects. The course covers the economic theories of development and construction of built facilities and infrastructure and the roles of these processes in the general economy. Participants will benefit by gaining a better understanding of the conceptual frameworks of economic analysis that underly a variety of approaches to practical problems encountered in the construction process.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 355
Corequisites
none

ARE 482 : Operation Analysis in Building Construction

The course provides students with an introduction to how to approach a construction project covering site set up, planning including the provision of different types of construction equipment and their application, equipment economics, productivity measures, probability theory and statistics, and performance improvement. This task will be linked to the master schedule and the financial planning too . The outcome will be a comprehensive plan for driving projects through completion based on scientific approach and optimum planning. The course primarily focuses on modeling and simulation of field operations using discrete event simulation, including the use of specialized software. Activity cycle diagrams will be used extensively to describe processes and their elements, activities, and resources. Verification and validation of simulation models will be discussed. Analytical skills gained from this course will allow students to better understand and design construction operations. Students will have the opportunity to meet construction managers and visit construction projects to get hands on experience.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 355
Corequisites
none

ARE 484 : Construction Professional Practice

This course examines practice management and project management in the built environment professions, particularly in engineering and construction. Topics in practice management include: ethical practice; the character and operation of practices; legal requirements; cash flow and profitability; running a business; professional memberships and registration; risk and professional liability; and personal career planning. Topics in project management include: project stages; procurement and feasibility; statutory requirements; management of time, cost and quality; and contracts and contract administration in private and public realms. Alternative and innovative pathways through the profession are also considered.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ARE 409
Corequisites
none

ARE 491 : Architectural Engineering Capstone Project I

The Capstone project is a two-semesters-long design project, undertaken individually or in a small team, under a staff mentor. The project involves an introduction to the life cycle of a project from a technical and management perspective, and is based on extensive oral and written communication. The capstone project is typically the foundation of the student'92s engineering portfolio for application to industry or graduate school. Students will apply the engineering concepts covered in the courses learned so far to architectural engineering problems, including the design of building structural and services systems, with an emphasis on teamwork. The projects are also used to introduce the students to various practical aspects of construction and professional ethics.

Credits 2
Lab Hours 4
Lecture Hours 0
Tutoring Hours 0
Prerequisites
ARE 202, ARE 332, ARE 313, ARE 315, ME 407
Corequisites
none

ARE 492 : Architectural Engineering Capstone Project II

The Capstone project is a two-semesters-long design project, undertaken individually or in a small team, under a staff mentor. The project involves an introduction to the life cycle of a project from a technical and management perspective, and is based on extensive oral and written communication. The capstone project is typically the foundation of the student'92s engineering portfolio for application to industry or graduate school. Students will apply the engineering concepts covered in the courses learned so far to architectural engineering problems, including the design of building structural and services systems, with an emphasis on teamwork. The projects are also used to introduce the students to various practical aspects of construction and professional ethics.
Credits 2
Lab Hours 4
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ARE 491
Corequisites
none

Electrical Engineering

EE 207 : Foundation of Electrical Engineering

The course teaches fundamental concepts of electrical circuits, students will be familiarized with the essential principles of electrical circuit analysis composition of components into systems and networks, and understanding the trade-offs and limits imposed by energy and noise. Students learn to apply the concepts during laboratory design.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 1
Prerequisites
PHU 124
Corequisites
MAT 213

EE 207 L : Foundation of Electrical Engineering Lab

Laboratory experiments dealing with Foundation of Electrical Engineering.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 207

EE 208 : Electric Circuits

The course teaches the design and analysis of interconnected networks of lumped circuit elements.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 207
Corequisites
None

EE 209 : Applied Electromagnetics

The course teaches the application of electromagnetic principles to classical and modern devices. The concepts of work and energy and electromagnetic fields are addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 207, MAT 211
Corequisites
None

EE 210 : Digital Logic Systems

The course teaches theoretical foundations and concepts of digital systems and applies these concepts with design problems and projects. Students are exposed to the design and engineering of digital computers and subsystems.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
None
Corequisites
None

EE 210 L : Digital Logic Systems Lab
Laboratory experiments dealing with Digital Logic Systems.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 210

EE 301 : Signals and Systems
The course teaches fundamental concepts of signals and systems analysis, with applications drawn from filtering, audio and image processing, communications, and automatic control. The objective of the course is to allow students to develop a thorough understanding of time-domain and frequency domain approaches to the analysis of continuous and discrete systems. To provide students with necessary tools and techniques to analyze electrical networks and systems.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 208, MAT 224
Corequisites
None

EE 302 : Communications Theory
The course teaches communication systems and information theory. Topics covered include the classification of signals and systems, Fourier series and transform applications, power spectra and spectral density, band-limited signals and noise, sampling theory and digital transmission, modulation techniques and pulse code modulation.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 301, STA 212
Corequisites
None

EE 302 L : Communications Theory Lab
Laboratory experiments dealing with Communications Theory.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 302

EE 303 : Introduction to Electronics
The course teaches the fundamentals of electronic circuits, including diode characteristics and diode circuits, transistors and applications, switches and MOS transistors, amplifiers, energy storage elements, digital circuits and applications. Design and laboratory exercises are also significant components of the course.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 208
Corequisites
None

EE 303 L : Introduction to Electronics Lab
Laboratory experiments dealing with Introduction to Electronics.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 303

EE 304 : Microelectronics
This course teaches analog circuit analysis and design, including an introduction to the tools and methods necessary for the creative design of practical circuits using active devices.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 303
Corequisites
None

EE 304 L : Microelectronics Lab
Laboratory experiments dealing with Microelectronics.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 304

EE 305 : Computer Networks
The course teaches the fundamental concepts of communication networks, and is concerned specifically with network architectures and protocols. The objective of the course is to allow students to develop a thorough understanding of the architectures of networks and the basic principles that allow the transmission of data over networks.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
SE 100, STA 212, EE 210 (or SE 223)
Corequisites
None

EE 305 L : Computer Networks Lab
Laboratory experiments dealing with Computer Networks.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 305

EE 306 : Control and Feedback System Design
The course teaches the analysis and synthesis of continuous and sampled-data linear feedback control systems, and its application to a variety of physical systems
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 301
Corequisites
None

EE 306 L : Control and Feedback System Design Lab
Laboratory experiments dealing with Control and Feedback System Design.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 306

EE 307 : Computer Architecture
The course introduces the architecture of digital systems, with an emphasis on the structural principles common to a wide range of computer technologies. Multilevel implementation strategies, the definition of new primitives (e.g., gates, instructions, procedures, and processes) and their mechanization using lower-level elements, the organization and operation of digital computers and the hardware/software interface are addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
SE 100, EE 210 (or SE 223)
Corequisites
None

EE 307 L : Computer Architecture Lab
Laboratory experiments dealing with Computer Architecture.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 307

EE 308 : Electrical Energy Conversion
The course teaches the basic concepts of electrical machines and power semiconductor converters and their application within modern power systems.
Credits 3
Lab Hours 2
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 209
Corequisites
None

EE 308 L : Electrical Energy Conversion Lab
Laboratory experiments dealing with Electrical Energy Conversion.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 308

EE 401 : Special Topics in Electrical Engineering
This course provides instruction and experience in timely topics related to Electrical Engineering major.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 390
Corequisites
None

EE 401 L : Special Topics in Electrical Engineering Lab
Laboratory experiments dealing with the special topics course. This will be offered if the special topics course has an applied side and is scheduled to be offered with a lab.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 401

EE 402 : Introduction to Wireless Networks
The course surveys the various types of wireless communications, the protocols involved and the design issues that nature and engineering impose upon the telecommunications engineer. Specifically, the course covers wireless network architectures including cellular networks, local area networks, multi-hop wireless networks such as ad hoc networks, mesh networks, and sensor networks; capacity of wireless networks; medium access control, routing protocols, and transport protocols for wireless networks; mechanisms to improve performance and security in wireless networks; energy-efficient protocols for sensor networks.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 305
Corequisites
None

EE 403 : Wireless Communications
The course teaches wireless communications for voice, data, and multimedia. Topics include wireless systems and standards, characteristics of the wireless channel, including path loss for different environments, random log-normal shadowing due to signal attenuation, and the flat and frequency-selective properties of multipath fading.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 413
Corequisites
None

EE 403 L : Wireless Communications Lab
Laboratory experiments dealing with Wireless Communications.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 403

EE 404 : Data Engineering in Electrical Systems
The course introduces students to data engineering and science (DES) techniques, with a focus on application to substantive (i.e. "applied") engineering problems. Students will gain experience in identifying which problems can be tackled by DES methods, and learn to identify which speciuc0u64257 c DES methods are applicable to a problem at hand.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 301
Corequisites
None

EE 404 L : Data Engineering in Electrical Systems Lab
Laboratory experiments dealing with Data Engineering in Electrical Systems.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 404

EE 405 : Electric Power Systems

The course teaches the components, analysis, and modeling of large scale electric power systems. This includes the review of single and three phase circuit variables and parameters and the per unit system. The components of the system are studied including the transformers and the transmission line parameters. In addition, the operation in terms of modeling and analysis of electric power systems is studied in steady state and transient state, with a particular focus on power flow solution methods. Case studies are introduced to prepare for more advanced topics. A project accompanies the course to introduce practical aspects of measurements and operation, with simulations addressing large scale problems.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 308, MAT 224
Corequisites
None

EE 406 : Digital Electronics

This course aims to familiarize students with the basic concepts and mechanisms of operation and design of digital electronic circuits, both discrete and integrated. Topics covered include an overview of MOS and BJT types, structures and operation, digital logic inverters (voltage transfer characteristic, digital integrated circuit technologies and logic-circuit families), CMOS inverters (dynamic operation of the CMOS inverter, inverter sizing, power dissipation), logic-gate circuits (NOR, NAND, XOR), propagation delay analysis, pseudo-NMOS logic circuits, gate circuits, pass-transistor logic circuits (NMOS transistors as switches, CMOS transmission gates as switches), dynamic MOS logic circuits (Emitter-coupled logic (ECL) and families), BiCMOS inverters and logic gates, latches, flip-flop circuits, multivibrators, and an overview of memory circuits types and architectures, and A/D and D/A converters.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 304
Corequisites
None

EE 406 L : Digital Electronics Lab

Laboratory experiments dealing with Digital Electronics.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 406

EE 408 : Communication Electronics

This course is designed for senior-level undergraduate students in Electrical Engineering. It builds upon perquisite courses on signal and systems, communications, control systems, and electronics to further enhance the understanding of communication circuits operation and physical implementation. The course focuses on the field of communication electronics at levels from block diagram to circuit analysis for physical implementation. It aims to cover topics as radio frequency amplifiers, oscillators, signal spectra, noise, modulation and AM systems, transmitter and receiver circuits, sideband systems, frequency and phase modulation, phase-locked loops, and pulse and digital modulation.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 304
Corequisites
None

EE 410 : Cyber Physical Systems
This course takes on an updated view of electrical engineering systems, especially in light of the their increasing predominant cyber-physical nature. It offers a review of modeling physical systems, including electrical, mechanical, thermal and fluid. It also covers notions such as hybrid (continuous-discrete) and applied control theory. Modeling computational (cyber) aspects of modern systems is then discussed, along with relevant considerations including communications, aggregate control, and connected sensing and actuation.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 306
Corequisites
None

EE 410 L : Cyber Physical Systems Lab
Laboratory experiments dealing with Cyber Physical Systems.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 410

EE 411 : Internet of Things
This course introduces the principles, technologies, challenges, and required expertise needed for building the Internet of Things (IoT) solutions. It provides a big picture of what is involved in IoT. Topics covered in this course include analog and digital sensing, interfacing sensors with microcontrollers, digital communication protocols, microcontroller choices and capabilities, gateways, fog computing, networking, cloud computing, need and challenges for cryptography and compression, security issues, and low power/energy challenges. The course involves a hands-on-experience that culminates in an implementation project.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 390
Corequisites
None

EE 412 : Nanoelectronics
The course teaches an introduction to the electronic properties of molecules, carbon nanotubes, crystals and other nanodevices.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 304
Corequisites
None

EE 412 L : Nanoelectronics Lab
Laboratory experiments dealing with Nanoelectronics.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 412

EE 413 : Digital Communications
The course teaches the principles of digital communication systems. Topics include sampling, quantization and encoding of analog signals, pulse code modulation (PCM), delta modulation (DM), noise analysis in PCM and DM systems, base-band digital systems (matched filter, probability of error, inter-symbol interference, equalization, distortionless transmission, and M-ary transmission), line codes and their power spectra, pass-band digital systems (ASK, FSK PSK, DPSK, and M-ary), bandwidth and power requirements of modulation schemes, coherent and non-coherent detection, error rate analysis, and introduction to information theory.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 302
Corequisites
None

EE 413 L : Digital Communications Lab
Laboratory experiments dealing with Digital Communications.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 413

EE 417 : Digital Signal Processing
This course presents an introduction to the techniques and algorithms of digital processing for signals and information data. It is designed for senior-level undergraduate students in electrical and computer engineering. The theory and practice covered in this course can be applied in wide range of science fields, such as image processing, communications, satellite systems, biomedical, power and electronic devices, and programmable units. The proposed content covers a review of discrete-time sequences and systems, sampling of continuous-time signals and aliasing effect, discrete Fourier transform: properties and applications; fast Fourier transform (FFT): implementation and computations, finite impulse response (FIR) filters design and analysis: low-pass, band pass, high pass, phase response etc., and infinite impulse response (IIR) filters design methods and cascaded structures. The course involves extensive software and programming experience to enrich the understanding of the covered material.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 301
Corequisites
None

EE 417 L : Digital Signal Processing Lab
Laboratory experiments dealing with Digital Signal Processing.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 417

EE 418 : Digital Image Processing
The course teaches an introduction to image processing and its applications, including the fundamental concepts of visual perception and image acquisition, the basic techniques of image manipulation, segmentation and coding, and a preliminary understanding of pattern recognition and computer vision.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 301
Corequisites
None

EE 418 L : Digital Image Processing Lab
Laboratory experiments dealing with Digital Image Processing.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 418

EE 420 : Power Electronics
The course teaches the principles of designing power electronic circuits. Power electronics design has applications in several fields from motor drives to consumer electronics to electric power transmission over HVDC lines. Therefore, the course reviews the fundamentals before covering generic power electronic circuit topologies. This entails a review of the switching devices, e.g., diodes, thyristors, BJTs, and the review of the fundamentals of electric circuit design and magnetism. Building on the fundamentals, the course covers AC to DC, DC to DC, DC to AC, and AC to AC electric power conversion topologies. The lab component is simultaneously administered to offer a practical perspective including the selection of components vis-'e0-vis the application, the instrumentation. In addition, the lab goes over the prototyping and testing aspects of power electronic circuit design.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 304
Corequisites
None

EE 420 L : Power Electronics Lab
Laboratory experiments dealing with Power Electronics.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 420

EE 422 : Antennas and Wave Propagation
This course introduces the characteristics of electromagnetic waves and their behavior during the propagation through different media. The wave equation is derived using the Maxwell'92s equations for time varying fields. The electromagnetic wave propagation in different media as well as their reflection at normal and oblique angle of incidence is discussed. The concept of transmission line theory and its parameters, smith chart and its application are introduced. Waveguide and TM & TE modes are discussed. In addition the course includes Antenna characteristics, antenna types such as dipole, loop and antenna array.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 209
Corequisites
None

EE 423 : Optical Fiber Communication Systems
The course teaches the introduction to the optical fiber communications. Topics discusses dielectric slab waveguide, step-index and graded-index optical fibers, single mode and multimode fiber, attenuation and dispersion, light sources (LED and Laser diode), optical modulation and detection, noise modeling in optical receivers, and error rate analysis.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 422
Corequisites
None

EE 424 : Optoelectronics
The course teaches semiconductor light sources, such as different types of LEDs, Lasers (both gas and solid states), modulation techniques, photodetectors, PIN diode, avalanche Photo Diode (APD), the basics of optical waveguides and the principles of fiber optics
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 304
Corequisites
None

EE 424 L : Optoelectronics Lab
Laboratory experiments dealing with Optoelectronics.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 424

EE 425 : Microwave Engineering
The course teaches the fundamentals of Microwave Engineering. Topics include a review of electromagnetics theory, and discuss transmission lines and waveguides, microwave network analysis, impedance matching, passive microwave devices (power dividers and directional couplers), strip-line and micro-strip line circuits, microwave filters, and introduction to ferrimagnetic materials and components.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 422
Corequisites
None

EE 426 : Renewable Energy

This course covers fundamentals of renewable energy systems, Solar energy, Bio-energy, Wind energy, Hydro-power, Tidal power, Wave energy and Geothermal energy. Also integration of renewable energy systems will be covered in the course. The students will be exposed to technical aspects of mentioned topics; How to utilize renewable energy for domestic and industrial applications; requirements and obstacles of applications; how to integrate renewable energy systems.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 405
Corequisites
None

EE 426 L : Renewable Energy Lab

Laboratory experiments dealing with Renewable Energy.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Co-Requisite Courses
EE 426

EE 427 : Digital Control

The course discusses digital control designs and methodologies for dynamic systems. It describes classical and state-space control methods, and applies them to selected applications. The course explores the advantages and limitations of each method, offers an overview of feedback control systems, and proposes to cover selected topics on multivariable and optimal control methods. The course involves Matlab experience to improve the understanding of the covered design methods. The topics include a review of continuous control (feedback, root locus, frequency response design, compensation, state-space design), basic digital control (digitization, sampling, PID), discrete systems (linear difference equations, z-transform, spectrum, block diagrams), discrete equivalents (design via numerical integration, zero-pole matching), transform techniques (root locus in z-plane, frequency response), state-space approaches (regulator design, integral control and disturbance estimation, controllability and observability), and an introduction to multivariable and optimal control (time-varying and LQR steady-state optimal control, multivariable design)

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 306

EE 428 : Modern Control Theory

The course covers the fundamentals of Matrix Theory including eigenvalues and eigenvectors, and the matrix representations of the Diagonal, Jordan, Controllable, and Observable forms. The student learns to represent systems in terms of their state variables and state diagrams, and then solve for their response in the time domain. The focus of the course is on linear time invariant or LTI systems. Furthermore, the controllability and observability of the LTI system is studied, before covering the design of state feedback and output feedback control techniques. In addition, observer design is covered, with the separation principle, to construct observer-based control systems.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 306

EE 435 : Undergraduate Research in Electrical Engineering

Students participate in supervised research with a faculty member. Supervised research can be: 1) independent research undertaken by the student (thesis, independent study), or 2) assistance on a faculty member'92s research project. Students must find a faculty member who is willing to supervise him/her as an assistant on an existing project or as the author of an individual project. The student and the faculty supervisor will complete and sign a research contract which will be turned in to the chair of the Electrical Engineering Department. Drafting the contract will allow the student to develop ideas about what should be accomplished and what the faculty supervisor'92s expectations are. All academic requirements are at the discretion of the supervising faculty member. Students should agree on a plan for the semester with the faculty mentor before the research begins. The plan should include academic requirements, the basis for grading the experience, and a plan for student/professor meetings for the semester. It is the student'92s responsibility to report progress and seek guidance when needed. Students are expected to be active and reliable participants in the research experience.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisites
Department Chair approval, a GPA of at least 3.0/4.0, and a signed research contract.

EE 440 : Machine Learning

This course introduces machine learning and its applications in electrical engineering systems. It offers a review of relevant background in probability and background, and introduces general machine learning methods including supervised learning, unsupervised learning, and reinforcement learning. Applications instances in electrical engineering systems are discussed.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 390
Corequisites
None

EE 440 L : Machine Learning Lab

Laboratory experiments dealing with Machine Learning.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
EE 440

EE 444 : Artificial Intelligence

The course teaches the theory and implementation of Artificial Intelligence through several state-of-the-art methods. It is also cross listed with SE 444 Artificial Intelligence

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 390
Corequisites
None

EE 481 : Innovations and Entrepreneurship in Engineering

This course guides engineers and scientists who want to create new products that that could become income-producing businesses for themselves and for investors. Students will learn to sharpen an idea and turn it into a product, conduct patent searches, complete a provisional patent application, and prepare a business plan from a business model.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
EE 390
Corequisites
None

EE 495 : Electrical Engineering Capstone Project I
Students work in teams as professional engineering consultants on an independent engineering project under the supervision of a project advisor. The design process is emphasized, encompassing project definition, feasibility analysis, evaluation of alternative designs, and design computations. For each project, the scope of work is developed and negotiated between client and student consultants. The scope of work may also include fabrication, device testing, and field-testing. Projects are arranged by the students with approval of the instructor. The design and methodology are emphasized in part 1. Progress reports and an end of term report are submitted to the project advisor with an oral presentation of the design and methodology of the project.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisites
EE 390
Corequisites
None

EE 496 : Electrical Engineering Capstone Project II
The students work on the implementation and validation of the designs developed in part 1. A demonstration is presented, and a final written report is submitted to the project advisor. Oral presentations of reports are made before the faculty and students. A student who selects a project suggested by the industry has the opportunity of working with an industry sponsor.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
EE 495
Corequisites
None

Industrial Engineering

IE 301 : Operations Research I
The course includes deterministic operations research modelling concepts; linear programming modelling, simplex theory, duality and sensitivity analysis with economic interpretation; transportation and assignment problems; integer programming; branch and bound techniques; nonlinear optimization problems; multi-criteria decision making.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
MAT 212
Corequisites
none

IE 302 : Operations Research II
This course introduces probability models used to investigate the behaviour of industrial systems. It teaches decision making under uncertainty, elementary counting processes, Markov chains and Markov processes. Stochastic programming and applications. Stochastic models in queuing systems, inventories, and equipment reliability are also addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
IE 301, STA 212
Corequisites
none

IE 304 : Production and Service Systems Planning I
The course teaches theory and concepts involved in model formulation for the analysis and control of production processes, including systems for planning and controlling production and service systems to achieve productivity and efficiency. The course addresses the basic issues in production planning, including aggregate production planning, master production schedule, materials requirement planning, and capacity planning. Flexible manufacturing systems, lean manufacturing, Just-in-time (JIT), and new concepts in manufacturing are addressed. Various production systems are described, including job shops, flow shop, cellular manufacturing covering scheduling and optimization.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
STA 212
Co-Requisite Courses
IE 301

IE 305 : Production and Service Systems Planning II
The course teaches aspects of planning and design of logistics and inventory management in production and service systems. Optimization issues in supply chain management, distribution systems and routing, inventory control and warehousing, distributed networks, centralized and decentralized networks, facility location and layout, supply chain and strategic partnerships are addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 304
Corequisites
none

IE 307 : Work Systems Analysis and Design
The course teaches survey of methods for assessing and improving performance of individuals and groups in organizations. Techniques include various basic industrial engineering tools, work analysis, data acquisition and application, performance evaluation and appraisal, work measurement procedures and motion study. Layout design of work environments will include material handling systems and warehousing.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
STA 212
Corequisites
none

IE 307 L : Work Systems Analysis and Design Lab
Laboratory experiments dealing with work systems analysis and design.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
none
Co-Requisite Courses
IE 307

IE 309 : Human Factors and Ergonomics
The course teaches analysis of tools, work spaces and activities to achieve efficiency in modern work environments are introduced. The effects of vibration, noise, illumination, control display design, age and shift work on the performance of workers are discussed. Physiological and psychological capabilities and limitations in human factors, ergonomic measurement methods and analytical techniques, design of tools and the working ergonomic environment are addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
STA 212
Co-Requisite Courses
IE 307

IE 309 L : Human Factors and Ergonomics Lab
Laboratory experiments dealing with human factors and ergonomics.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
none
Co-Requisite Courses
IE 309

IE 315 : Engineering Economy and Cost Analysis
The course teaches economic analysis in an engineering environment considering the time value of money. Methods for evaluation of alternatives: present worth, annual equivalent worth, rate of return, payback method and benefit-cost ratio method. Replacement analysis, depreciation, inflation and cost estimation. Sensitivity and risk analysis are also considered.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
STA 212
Corequisites
none

IE 330 : Simulation
This course teaches simulation modelling and analysis of production and service systems, including simulation methodology, model building in a computer environment, analysing performance measures and assessment of different policies. It also teaches simulation languages, basic and advanced modules, and statistical aspects of simulation such as fitting of input and output distributions. Validation and verification of simulation models are also covered.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
SE 100, STA 212
Corequisites
none

IE 330 L : Simulation Lab
Laboratory experiments dealing with the implantation of discrete-event simulation models.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
none
Co-Requisite Courses
IE 330

IE 400 : Special Topics in Industrial Engineering
This course provides instruction and experience in timely topics related to Industrial Engineering major.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 305
Corequisites
none

IE 401 : Network Models and Project Management
The course teaches the terminology of graphs and networks, network flow problems, algorithms and solutions. Project management, defining the project, scheduling issues in projects, project duration optimization, resources planning, evaluation and progress, estimating times and costs, critical processes in the projects, applications of project-planning and software in the strategy of projects, integration of organization with projects and probability issues in project planning are addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 301
Corequisites
none

IE 406 : Quality Engineering
The course teaches Quality Assurance in an industrial system and compares it with the existing standards and protocols, including an introduction to quality engineering, quality standards ISO 9000 and QS 9000, TQM, quality cost analysis, process modeling and hypothesis testing, statistical process control for long and short production runs, process capability analysis, capability indexes, Weibull analysis, Six sigma acceptance sampling and design of experiments.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 305
Corequisites
none

IE 415 : Production Information Systems
The course teaches the design and analysis of production information systems, critical success factors for companies, effectiveness and efficiency through information systems usage in production and service systems, success cases in industry. Investigation of data modelling, storage, acquisition and utilization in Industrial Engineering via manual and computerized methods. Development of effective spreadsheet applications, design and implementation of relational databases via E-R modelling, relational schema, normalization, SQL (Standard Query Language), web-based database applications, interface design, the system development life cycle applied to data management applications, ERP (Enterprise Resource Planning) software and decision support systems are addressed.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 305
Corequisites
none

IE 420 : Reliability and Maintenance Engineering
This course provides an introduction to the life-cycle costing concept for equipment maintenance and replacement. Emphasis will be on the development of mathematical and simulation models for determining optimal maintenance and replacement policies for both capital equipment and components.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 305
Corequisites
none

IE 421 : Product Design and Development
Product Design and Development is a project-based course that covers modern tools and methods for product design and development. The cornerstone is a project in which teams of management, engineering, and industrial design students conceive, design, and prototype a physical product.
Credits 3
Prerequisites
IE 308

IE 430 : New Product Development
This course presents state-of-the-art Product Development techniques focusing on the interdisciplinary nature of the product design activities.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 309
Corequisites
none

IE 435 : Undergraduate Research in Industrial Engineering

Students participate in supervised research with a faculty member. Supervised research can be: 1) independent research undertaken by the student (thesis, independent study), or 2) assistance on a faculty member'92s research project. Students must find a faculty member who is willing to supervise him/her as an assistant on an existing project or as the author of an individual project. The student and the faculty supervisor will complete and sign a research contract which will be turned in to the chair of the Industrial and Mechanical Engineering Department. Drafting the contract will allow the student to develop ideas about what should be accomplished and what the faculty supervisor'92s expectations are. All academic requirements are at the discretion of the supervising faculty member. Students should agree on a plan for the semester with the faculty mentor before the research begins. The plan should include academic requirements, the basis for grading the experience, and a plan for student/professor meetings for the semester. It is the student'92s responsibility to report progress and seek guidance when needed. Students are expected to be active and reliable participants in the research experience.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisites
GPA of at least 3.0/4.0, a signed research contract, and consent of the departmental chair.
Corequisites
none

IE 440 : Heuristic Methods for Optimization

Introduction, simulated annealing, tabu search, genetic algorithm, ant colony optimization, ant colony, variable neighborhood search and particle swarm optimization.

Credits 3
Prerequisite Courses
IE 302

IE 450 : Management for Engineers

The course focuses on learning to see and understand the fundamental activities of businesses as practiced worldwide and how to manage them. Successfully performing these activities requires vision, passion, leadership, teamwork, and integrating the many functional disciplines of business.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
IE 305
Corequisites
none

IE 455 : Cognitive Ergonomics

This course provides basic knowledge about cognitive ergonomics and Human Computer Interaction and to provide insights about those peculiar aspects that link design to ergonomics. Special attention will be given to the “communicative” aspects of user-centered design, both in reference to usability and aesthetic pleasantness, and to the methods developed to evaluate the User Experience.

Credits 3
Prerequisite Courses
IE 309

IE 460 : Industrial IoT

In this course, students will be introduced to the concept of the Industrial Internet of Things, or IIoT, learn how it is applied in manufacturing, and what businesses should consider as they decide to implement this technology. Considerations include information technology infrastructure, the business value of implementing IIoT, and what needs to happen across the organization to ensure successful implementation.

Credits 3
Prerequisite Courses
IE 330

IE 495 : Industrial Engineering Capstone Project I
Students work in teams as professional engineering consultants on an independent engineering project under the supervision of a project advisor. The design process is emphasized, encompassing project definition, feasibility analysis, evaluation of alternative designs, and design computations. For each project, the scope of work is developed and negotiated between client and student consultants. The scope of work may also include fabrication, device testing, and field-testing. Projects are arranged by the students with approval of the instructor. Progress reports and a final written report are submitted to the student'92s project advisor. Oral presentations of reports are made before the faculty and students. A student who selects a project suggested by industry has the opportunity of working with an industry sponsor in an actual engineering experience.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
IE 302
IE 305
Corequisites
none

IE 496 : Industrial Engineering Capstone Project II
Students work in teams as professional engineering consultants on an independent engineering project under the supervision of a project advisor. The design process is emphasized, encompassing project definition, feasibility analysis, evaluation of alternative designs, and design computations. For each project, the scope of work is developed and negotiated between client and student consultants. The scope of work may also include fabrication, device testing, and field-testing. Projects are arranged by the students with approval of the instructor. Progress reports and a final written report are submitted to the student'92s project advisor. Oral presentations of reports are made before the faculty and students. A student who selects a project suggested by industry has the opportunity of working with an industry sponsor in an actual engineering experience.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
IE 495

Mechanical Engineering

ME 201 : Materials Science and Engineering
This course provides an overview of the fundamental principles of materials science and engineering that are essential to an engineer. The broad areas covered are structure of crystalline solids, mechanical behavior of commonly encountered engineering materials and phase transformations. Students will encounter the inter-relationship between processing, structure and performance and how this affects design and materials selection in engineering practice.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
CHM 102
Corequisites
none

ME 201 L : Materials Science and Engineering Lab
Laboratory experiments reinforcing concepts of materials science and engineering such as microstructure, structure-property relationships, and mechanical properties.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
CHM 102
Co-Requisite Courses
ME 201

ME 203 : Applied Mechanics I: Statics
The course teaches: fundamentals of forces and moments in 2 dimensions and 3 dimensions, moment about a point and about an axis, equivalent force systems, vector operations, 2D and 3D equilibrium of particles and rigid bodies, free body diagrams, center of mass, analysis of beams, trusses, frames and machines, and dry friction.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
PHU 103, MAT 112
Corequisites
none

ME 205 : Introduction to Computer Aided Design
The course teaches computer-aided design of mechanical systems, and includes the preliminary design, analysis, and documentation of a mechanical system. This will include first and third angle projections, solid modeling and the use of commercially available CAD software.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
none
Corequisites
none

ME 206 : Thermal Fluids Engineering I
The course teaches thermodynamics, pressure, temperature, heat and work, properties of pure materials, first law, closed and open system, second law, heat engines and cycles, including fluid mechanics, conservation laws, boundary layers, laminar and turbulent flows, pipe flows, incompressible one-dimensional flow, external flows, ideal flows, compressible flows, heat transfer, conduction, convection and radiation.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
PHU 103
Corequisites
none

ME 206 L : Thermal Fluids Engineering I Lab
Laboratory experiments dealing with thermodynamics, pressure, temperature, heat and work, properties of pure materials, first law, closed and open system, second law, heat engines and cycles, including fluid mechanics, conservation laws, boundary layers, laminar and turbulent flows, pipe flows, incompressible one-dimensional flow, external flows, ideal flows, compressible flows, heat transfer, conduction, convection and radiation.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
PHU 103
Co-Requisite Courses
ME 206

ME 208 : Mechanics of Materials I

The course teaches mechanics of deformable bodies. Topics covered include concepts of stress and strain, classification of materials behaviour, stress-strain relations, generalized Hook's law. It also covers applications to engineering problems: members under axial loads, torsion of circular rods and tubes, bending and shear stresses in beams, combined stresses in beams, transformations of stresses, deflection of beams, buckling and thin-walled pressure vessels.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 201
ME 203
Corequisites
none

ME 208 L : Mechanics of Materials I Lab

Laboratory experiments dealing with materials and structures, beam bending, buckling and torsion, material and structural failure, stress, strain, and heating effects.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 201
Co-Requisite Courses
ME 208

ME 216 : Fluid Mechanics

Fluid Mechanics course addresses the basic principles of fluid statics and dynamics including practical examples of the fluid devices and systems, solving techniques, and industrial applications. The course teaches introduction and basic concepts, properties of fluids, pressure distribution and fluid statics, fluid kinematics, integral analysis of fluid flow, Bernoulli and energy equations, momentum analysis of flow systems, dimensional analysis and modeling, internal flow, external flow: drag and lift, differential analysis of fluid flow, compressible flow, and open-channel flow.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
PHU 103
Corequisites
None

ME 216 L : Fluid Mechanics Lab

Fluid Mechanics Lab course teaches experiments which address the basic principles of fluid statics and fluid dynamics. These experiments include: buoyancy force, hydrostatic pressure, pressure-volume relationship for gases, energy equation applied on pump system, pipe frictional losses laminar & turbulent flow, pressure-temperature relationship for water, velocity profile for laminar & turbulent flows for air, drag force for objects with different projected are and surface profile, pumps connected in parallel and series, jet force, energy balance calculations, and losses in bends and fittings experiments.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
ME 216

ME 305 : Manufacturing and Workshop Training
The course teaches an overview of modern manufacturing technology, materials and their manufacturing characteristics, Casting, Mould design Tools and fixtures, Cutting machine tools (turning, milling, drilling, broaching etc., abrasive machining processes), Joining, assembly, Manufacturing costs, design for manufacturing, Welding, EDM, Laser Machining, Industrial Manufacturing processes (metal forming, forging, extrusion, rolling), Metrology, Inspection methods and quality control.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 201
Corequisites
none

ME 305 L : Manufacturing and Workshop Training Lab
Laboratory experiments dealing with modern manufacturing processes such as machining (turning, milling, drilling, broaching etc., abrasive machining processes), forming processes (metal forming, forging, extrusion, rolling) and assembly processes such as welding.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 201
Co-Requisite Courses
ME 305

ME 306 : Instrumentation and Control Engineering
The course teaches an introduction to the design of feedback control systems. Topics include the properties of feedback systems, time-domain and frequency-domain performance measures, stability and degree of stability, the root locus method, Nyquist criterion, frequency-domain design, and state space methods. These concepts will be applied to a variety of mechanical and aerospace systems throughout the course.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 207
Corequisites
none

ME 306 L : Instrumentation and Control Engineering Lab
Laboratory experiments dealing with feedback control systems, time-domain and frequency-domain performance measures, stability and degree of stability, the root locus method, Nyquist criterion, frequency-domain design, and state space methods.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
EE 207
Co-Requisite Courses
ME 306

ME 307 : Thermal Fluids Engineering II
The course teaches applications of thermodynamics, heat transfer and fluid mechanics to the design and analysis of energy systems. Topics include energy analysis, power and refrigeration cycles, studies of laminar and turbulent flow including heat transfer in free and forced convection, in channels, and over surfaces, heat transfer, including fins, forced and free convection, boiling and condensation, radiation heat transfer, heat exchangers, multi-mode heat transfer, compressible flows in pipes, ducts, divergent and convergent flows, sonic and supersonic flows.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 206
Corequisites
none

ME 307 L : Thermal Fluids Engineering II Lab
Laboratory experiments dealing with applications of thermodynamics, heat transfer and fluid mechanics to the design and analysis of energy systems. This includes energy analysis, studies of laminar and turbulent flow, heat transfer in free and forced convection, in channels, and over surfaces, fins, forced and free convection, boiling and condensation, radiation heat transfer, heat exchangers, compressible flows in pipes, ducts, divergent and convergent flows, sonic and supersonic flows.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 206
Co-Requisite Courses
ME 307

ME 308 : Advanced Manufacturing Processes
The course teaches the integration of design, engineering and management disciplines and practices for analysis and design of manufacturing enterprises. The course emphasizes the physics and stochastic nature of manufacturing processes and systems, and their effects on quality, rate, cost and flexibility, process physics and control, design for manufacturing and manufacturing systems and a team project where the students design and build elements using mass-production methods to produce a product in quantity.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 305
Corequisites
none

ME 308 L : Advanced Manufacturing Processes Lab
Laboratory experiments reinforcing with integration of design, engineering and management disciplines. Students will learn about rapid prototyping using 3D printing tools and CNC technologies including using software to convert engineering designs into toolpath information.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 305
Co-Requisite Courses
ME 308

ME 310 : Mechanical Component Design
The course teaches the creative design process via the application of appropriate physical laws and learning to complete projects on schedule. Topics include synthesis, analysis, design robustness, machine elements, manufacturability, idea generation, estimation, concept selection, visual thinking, communication, design and analysis, design for manufacturing, professional responsibilities and ethics.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 311, ME 312
Corequisites
none

ME 310 L : Mechanical Component Design Lab
Laboratory experiments reinforcing the creative design process. Students go through the design process including idea generation, estimation, concept selection, visual thinking, communication, design and analysis, design for manufacturing, professional responsibilities and ethics.
Credits 1
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
ME 311, ME 312
Co-Requisite Courses
ME 310

ME 311 : Applied Mechanics II: Dynamics
This course teaches basic principles of kinematics and kinetics of 3D particles and planer rigid bodies. It establishes and develops the analytical skills to solve dynamics problems based on application of basic principles such as Newton'92s laws of motion, concepts of work and energy as well as impulse and momentum, and force and acceleration.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 203
Corequisites
none

ME 312 : Mechanics of Materials II
The course teaches an introduction to mechanical behaviour of engineering materials and the use of materials in mechanical design. The course emphasizes the fundamentals of mechanical behaviour of isotropic and anisotropic materials, as well as design with materials, including elasticity, plasticity, limit analysis, fatigue, fracture, creep, three-dimensional stress and strain problems and the selection of materials for engineering design.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 208
Corequisites
none

ME 312 L : Mechanics of Materials II Lab
The course focuses on experiments reinforcing concepts in mechanical behavior of engineering materials and the use of materials in mechanical design, including elasticity, plasticity, limit analysis, fatigue, fracture, creep, and deformation in pressurized cylinder.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 208
Co-Requisite Courses
ME 312

ME 314 : Vibration and Damping
The course teaches single-degree and multi-degree of freedom systems. Topics covered include undamped and damped free and forced vibrations, impulse and arbitrary force response vibration, absorbers and isolators, rotating machinery fault diagnosis, modal analysis and mode shapes.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 311
Corequisites
none

ME 315 : Machine Design
This course teaches the function, design and performance of basic machine elements commonly used by mechanical engineers, such as shaft, temporary and permanent fasteners, key, thick wall vessel, etc. Students will develop skills in designing and analysing performance capabilities of these elements based on static and dynamic combined loading. The course will also cover potential topics such as part geometry, material choice, loading and environmental conditions, static and fatigue failure theories, factor of safety concept.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 208
Corequisites
none

ME 316 : Engineering Thermodynamics
The Engineering Thermodynamics course addresses the basic principles of thermodynamics including practical examples of the thermally driven devices and systems. Moreover, the course introduces different solving techniques for thermal-fluids industrial related applications. The course teaches introduction and basic concepts, energy, energy transfer, general energy analysis, properties of pure substances, energy analysis of closed systems, mass and energy analysis of control volumes, the second law of thermodynamics, entropy analysis, exergy analysis, gas power cycles, vapor and combined power cycles, refrigeration cycles, thermodynamic property relations, gas mixtures.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 216
Corequisites
None

ME 400 : Special Topics in Mechanical Engineering
The course will focus on advanced topics and recent developments in one or more of areas: control and robotics, dynamic systems, fluid mechanics, materials science and engineering, solid mechanics and structures, thermal sciences or other areas in mechanical engineering.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
Department Approval
Corequisites
none

ME 401 : Computational Fluid Dynamics and Heat Transfer
The course teaches the working principles of computational fluid dynamics and heat transfer and applies these concepts using commercially available software packages used in industry. Topics include the application, analysis and limitations of design evaluation using CFD approach. The course will equip students to model real engineering problems and correlate the working principles of fluid dynamics and heat transfer using numerical techniques.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 307
Corequisites
none

ME 403 : Finite Element Modelling for Dynamic and Structural Analysis

The course teaches the working principles of the non-linear finite element method (FEM) and applies the concepts involved using commercially available software packages used in industry. Topics include the application, analysis and limitations of design evaluation using FEM approach. The course will equip students to model real engineering problems and correlate the working principles of Mechanics and Dynamics using numerical methods.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 311
ME 312
Corequisites
none

ME 403 L : Finite Element Modelling for Dynamic and Structural Analysis

Laboratory experiments dealing with the working principles of the non-linear finite element method (FEM) and apply the concepts involved using commercially available software packages used in industry, the application, analysis and limitations of design evaluation using FEM approach. The course will equip students to model real engineering problems and correlate the working principles of mechanics and dynamics using numerical methods.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 312
ME 311
Co-Requisite Courses
ME 403

ME 405 : Engineering Safety and Risk Analysis

The course aims to introduce students to hazard identification, risk assessment, risk control in industrial or commercial workplace. The course will also equip students with knowledge on health, and safe work practices, recognition and elimination of health hazards, design material handling and emergency treatment for industrial accidents. Students are expected to understand different hazard identification and control methods and able to develop risk management systems.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
STA 212
Corequisites
none

ME 406 : Mechatronics

The course teaches the acquisition of the knowledge and skills required to design and control electromechanical systems. The basic material will be covered in classroom lectures and discussions. Much of the learning will take place in the laboratory where students will learn to build and operate representative electromechanical systems. The class includes a final project.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 306
Corequisites
none

ME 407 : Heating, Ventilation, and Air-Conditioning
The course introduces basic concepts of heating, ventilation, and air conditioning systems (HVAC). These include: HVAC components and distribution systems, moist air properties and conditioning processes, indoor comfort conditions, heat transmission in building structures, calculation of heating loads, cooling load, duct design, fans and building air distribution, and the performance of refrigeration systems.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 206
Corequisites
none

ME 410 : Energy Conversion and Cogeneration Systems
The course introduces various types of energy conversion and cogeneration systems. These include; advanced steam power plants, gas turbine power plants, nuclear power plants, co-generation and tri-generation, internal combustion engine, and renewable energy conversion systems. The student will learn how to do an analysis for any energy conversion system. Moreover, students will learn about the regeneration, binary, supercritical, and other advanced steam power cycles. In addition, this course teaches student how to design components of the power conversion system such as boilers, condensers, steam turbines, compressors, combustors, gas turbines, and others. The knowledge about the nuclear power plants and recent technologies is covered as well in this course. Furthermore, the course gives an introduction to the power generation using the new and renewable energy sources as well as energy storage and economy of energy.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 307
Corequisites
none

ME 412 : Renewable Energy Systems
The course gives an overview of renewable energy sources including biomass, hydroelectricity, geothermal, tidal, wave, wind and solar power. And it also presents the fundamentals of different renewable energy systems with a main focus on technologies with high development potential. Furthermore, it integrates maths, engineering, climate studies and economics, and enabling students to gain a broad understanding of renewable energy technologies and their potential.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 307
Corequisites
none

ME 414 : Introduction to Compressible Flow Turbomachinery
The course introduces various types of compressible flow turbomachineries and describes their fundamental working and design concepts. This includes; turbomachinery classification, apply dimensional analysis and similitude to turbomachines, basic governing equations for turbomachines, Euler equation, centrifugal compressors, axial flow compressors and fans, radial and axial flow turbines.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 307

ME 415 : Incompressible Flow Machines
This course is about optimal design of machinery, analysis for prevention of machine elements failure.
Credits 3
Prerequisite Courses
ME 206

ME 416 : Automotive Engineering
This course teaches the fundamentals of Internal Combustion engines, its classifications and applications, as well as deign and operating parameters. Topics include the thermodynamic analysis of fuel-air cycle, firing order, concept of combustion process in SI engines, Scavenging and design aspects of SI engines, supercharging and turbocharging, lubrication system, engine cooling system and engine heat transfer, fuel injection system in SI engines, Compression Ignition (CI) engines, conventional and non-conventional fuels in SI and CI engines.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 307

ME 418 : Water Desalination
The course aims to introduce students to fundamentals of water desalination. The course provides an overview and classification of desalination techniques such as single and multiple effect evaporation, vapor compression, single and multi-stage flash distillation, reverse osmosis, hybrid processes. It will also cover potential topics such as resources and needs for desalination, dual purpose power and desalination plants, desalination powered by renewable energy sources. Other topics such as economic analysis and brine discharge management may also be presented.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 307

ME 419 : Product Design and Development
This course will introduce students to thought frameworks, tools and methods for product design and development. The course will teach students a set of product development procedures that can be practiced in multidisciplinary teams. Topics include opportunity identification, product planning, identifying customer needs and specification, concept generation, selection and testing as well as designing of environment and manufacturing. The course will include projects-based assignments.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 308
Corequisites
none

ME 420 : Advanced Visualization and Simulation
This course will introduce students to use computer-aided packages in the product design and manufacturing process. Students will be exposed to CAD/CAE/CAM packages which are used in the industry to perform analysis and evaluate performance of engineering products and to optimize manufacturing processes. The course will be hands-on and will involve ample project-based activities along with lecture-based instructions.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 308
Corequisites
none

ME 422 : Corrosion Engineering

This is an introductory course on corrosion engineering. The course emphasizes fundamental concepts of corrosion and applies these concepts to corrosion control. The course will develop thermodynamic and kinetics framework of corrosion such as Nernst equation, electrode potentials, Pourbaix diagram, polarization, corrosion rates and passivity. Corrosion control and mitigation procedures such as materials selection, use of inhibitors and application of anodic and cathodic protection systems will be discussed.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
ME 316
Corequisites
None

ME 435 : Undergraduate Research in Mechanical Engineering

Students participate in supervised research with a faculty member. Supervised research can be: 1) independent research undertaken by the student (thesis, independent study), or 2) assistance on a faculty member'92s research project. Students must find a faculty member who is willing to supervise him/her as an assistant on an existing project or as the author of an individual project. The student and the faculty supervisor will complete and sign a research contract which will be turned in to the chair of the Industrial and Mechanical Engineering Department. Drafting the contract will allow the student to develop ideas about what should be accomplished and what the faculty supervisor'92s expectations are. All academic requirements are at the discretion of the supervising faculty member. Students should agree on a plan for the semester with the faculty mentor before the research begins. The plan should include academic requirements, the basis for grading the experience, and a plan for student/professor meetings for the semester. It is the student'92s responsibility to report progress and seek guidance when needed. Students are expected to be active and reliable participants in the research experience.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisites
Department Approval
Corequisites
none

ME 495 : Mechanical Engineering Capstone Project I

The mechanical engineering curriculum culminates in a two-semester capstone sequence undertaken in a small team or, in case this is not possible, individually, under close supervision of an academic staff. Students typically choose a project that aligns with their interest. The capstone project is the foundation of the student'92s engineering portfolio for application to industry or graduate school. In the first semester, students enrol in ME 495 during which student teams identify scope of the project, formulate specifications, develop conceptual solutions and designs, perform concept analysis and engineering analyses to arrive at a final prototype design.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 307
ME 310
Corequisites
none

ME 496 : Mechanical Engineering Capstone Project II

ME 496 is the second part of the two-semester capstone sequence. Students working individually or in a small team under supervision of an academic staff will be expected to continue and complete prior work initiated in ME 495. Student teams proceed with physical realization, validation and testing of their designs. Student teams are expected to deliver an engineered, validated and tested product or prototype. Scaled models may also be produced for projects involving large structures. While a successful outcome is expected, it is not required as the focus of capstone courses is on students'92 learning.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
ME 495
Corequisites
none

Software Engineering

SE 100 : Programming for Engineers

Fundamentals of computers and computing. Introduction to a typical object-oriented programming language. Basic data types and operators. Console input/output. Logical expressions and control structures. Methods and arrays. Introduction to Classes.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
None
Corequisites
None

SE 100 L : Programming for Engineers Lab

Laboratory experiments dealing with Object Oriented Programming.

Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
None
Co-Requisite Courses
SE 100

SE 117 : Software Practice and Society

This course examines the role of computers and software and their impact on society. It discusses Ethical Foundations for IT professional and IT users; Governance, Regulations, and Computer and Internet Crimes; Intellectual Property; Privacy; Security; Professional Responsibility from the perspective of software engineering and the local and regional laws and regulations.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
None
Corequisites
None

SE 120 : Object-Oriented Programming I
Advanced object-oriented programming; inheritance; polymorphism; abstract classes and interfaces, container and collection classes, packages, object-oriented design, software modeling, event-driven programming. Design and implement simple GUI applications. Write simple multithreaded applications. Use API in writing applications.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 100
Corequisites
None

SE 120 L : Object-Oriented Programming I Lab
Laboratory experiments dealing with advanced Object Oriented Programming.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 100
Co-Requisite Courses
SE 120

SE 201 : Introduction to Software Engineering
This course is designed to present students with several principles relevant to Software Engineering. Students will gain insights into various software process models throughout the course. The curriculum strongly emphasizes the agile software development approach, highlighting the importance of adaptability and collaborative teamwork. Students will acquire knowledge and skills in requirements engineering. The course covers systems modeling and project management strategies. It addresses the value of software reuse and introduces students to human computer interaction and software testing. The final segment of the course focuses on configuration management.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 120
Corequisites
None

SE 212 : Discrete Structures for Software Engineers
Logic, sets and functions, algorithms, mathematical reasoning, counting, relations, graphs, trees, Boolean Algebra, computation, modeling.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 120
Corequisites
None

SE 214 : Algorithms and Data Structures
Survey of important computer algorithms and related data structures used in object-oriented software engineering. Design, performance analysis and implementation of such algorithms, stressing their practical use and performance certification of large software applications. Understand how to "seal" designs to guarantee performance goals and insure that all error conditions are caught.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 120
Corequisites
None

SE 214 L : Algorithms and Data Structures Lab
Laboratory experiments dealing with Algorithms and Data Structures.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 120
Co-Requisite Courses
SE 214

SE 220 : Object-Oriented Programming II
Extensions of object-oriented and advanced programming concepts such as GUI, Even-driven programming, Binary I/O, and Multi-Threading are essential in implementing high-grade projects.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 120
Corequisites
None

SE 220 L : Object-Oriented Programming II Lab
Laboratory experiments dealing with advanced Object Oriented Programming.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 120
Co-Requisite Courses
SE 220

SE 225 : Software Requirements
Introducing key aspects of the requirements process, starting with the creation of a vision document, and establishing project scope. Elicitation techniques, system context and use case modeling, and the seamless transition from use cases to implementation and test cases will be introduced. Crucial topics will be covered like misuse case modeling, prototyping, fundamentals of goal orientation, requirements management, change management, and the creation and validation of supplementary specifications.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 201
Corequisites
None

SE 225 L : Software Requirements Lab
Laboratory experiments dealing with software requirements.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 201
Co-Requisite Courses
SE 225

SE 310 : Software Design and Architecture
The course gives students an understanding of the concept of software architecture and how this phase in the development between requirement specification and detailed design plays a central role for the success of a software system. The students will get knowledge of some well-known architecture patterns, and be able to design, construct and evaluate architectures for software systems. In addition, the students should get some understanding of how the developers'92 experiences and the technical and organizational environment will influence on the choice of architecture.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 225
Corequisites
None

SE 312 : Database Management Systems
The focus is to teach database fundamentals required in the development and evolution of most software applications by providing a basic introduction to the principles of relational database management systems such as Entity-Relationship approach to data modeling, relational model of database management systems and the use of query languages.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 214
Corequisites
None

SE 312 L : Database Management Systems Lab
Laboratory experiments dealing with database management systems.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 214
Co-Requisite Courses
SE 312

SE 314 : Operating Systems
This course introduces the fundamentals of function, design, and implementation of computer/mobile operating systems. Students will learn processes, threads, concurrent programming, interrupt handling, CPU scheduling and process synchronization, memory management, deadlocks, and file system.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 214
Corequisites
None

SE 314 L : Operating Systems Lab
Laboratory experiments dealing with Operating Systems.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 214
Co-Requisite Courses
SE 314

SE 322 : Internet of Things Application Development
This course is designed to provide students with technical knowledge and skills to build Internet of Things (IoT) systems and applications. The course will cover the design of microcontroller-based embedded systems. In addition, it will cover IoT paradigms, including the integration of various components such as sensors, actuators, and communication modules, IoT design considerations, constraints, and development processes for IoT applications in different sectors.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 100
EE 305
Corequisites
None

SE 324 : Web Application Development
The course focuses on learning fundamentals of Web-based programming techniques, Web application development and client-server database integration. It provides in-depth coverage of introductory programming principles, various markup languages, client-side scripting, server-side scripting and relational databases. The course also introduces sessions, cookies, and the application of XML in web building.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 312

SE 324 L : Web Application Development Lab
Laboratory experiments dealing with web application development.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 312
Co-Requisite Courses
SE 324

SE 328 : Mobile Application Development
This project-oriented course examines the principles of mobile application design and development. Students will learn application development on the Android platform. Topics will include memory management; user interface design; user interface building; input methods; data handling; network techniques and URL loading; and, finally, specifics such as GPS and motion sensing. Students are expected to work on a project that produces a professional-quality mobile application. Projects will be deployed in real-world applications.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
SE 225 and SE 312
Corequisites
None

SE 328 L : Mobile Application Development Lab
Laboratory experiments dealing with mobile application development.
Credits 1
Lab Hours 2
Lecture Hours 0
Tutoring Hours 0
Prerequisites
SE 225 and SE 312
Co-Requisite Courses
SE 328

SE 330 : Introduction to Cybersecurity
The purpose of the course is to provide the students with an overview of the field of Cyber Security. Students will be exposed to a wide spectrum of security techniques used to protect information assets, manage risk, and detect and react to threats to information assets. In this module, students will learn about data/system/network protection mechanisms, intrusion detection systems, models of security, cryptography, hashing, authentication and non-repudiation, network system security, attack strategies, malware, secure applications (development), and cyber-security policy.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 305
Corequisites
None

SE 390 : Software Engineering Summer Internship
An internship it is an important aspect of Software Engineering curriculum that provides the student with hands-on experience and a good sense of what an actual job in an organization will be like. Students are required to join an IT department in a government or private organization for a summer period of at least 8 weeks in the last summer prior to student graduation. Students should be able to relate the internship experience to the knowledge that he or she has gained through the Software Engineering program courses.
Credits 0
Lab Hours 0
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 324
Corequisites
None

SE 412 : Software Testing and Quality Assurance
The course focuses on software verification and validation throughout the software life cycle, including reviews (inspections and walkthroughs), testing techniques (functional and structural '96 black box and white box), levels of testing (unit, integration, system, and acceptance), and testing tools (static and dynamic). Testing and quality assurance standards.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 310
Corequisites
None

SE 414 : Software Project Management
The concepts and use of project management tools, techniques and methodologies are becoming very fundamental and commonplace. This course addresses project management in the context of software projects. Using the framework of the Project Management Body of Knowledge (PMBOK) initiated by the Project Management Institute (PMI), the course covers various aspects pertaining to project initiation, planning, scheduling, monitoring and control, and closure. For planning and scheduling of projects, the use of project network and estimation of time and cost will be elaborated on. Risk assessment methods will also be covered. This course is designed to form a stepping stone for those candidates wishing to pursue related certifications such as the Certified Associate in Project Management (CAPM), the newly introduced Project Management Ready credential, and later on the most demanded Project Management Professional (PMP) designation.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 310
Corequisites
None

SE 423 : Software Construction and Processes
This course introduces principles and techniques to develop software such that it is more maintainable and evolvable. This implies that the developed software is traceable, easy to understand, and ready for change. Such qualities are necessary for all software which will have a considerable lifespan and would have additions/changes in their functionality during their lifetimes. The course will discuss the most common design patterns which help in making a software more robust.

Software reengineering will also be introduced since many of the largest software systems are successors of existing systems and in the absence of clear documentation, most of the time, functional details and design choices have to be extracted from existing code.

The course will also introduce the concept of functional programming, its differences with imperative programming languages, its uses and its pitfalls. Understanding of functional programming will help students explore a new programming paradigm and broaden their horizon
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 412
Corequisites
None

SE 435 : Undergraduate Research in Software Engineering

Students participate in supervised research with a faculty member. Supervised research can be: 1) independent research undertaken by the student (thesis, independent study), or 2) assistance on a faculty member's research project. Students must find a faculty member who is willing to supervise him/her as an assistant on an existing project or as the author of an individual project. The student and the faculty supervisor will complete and sign a research contract which will be submitted to the chair of the Software Engineering Department. Drafting the contract will allow the student to develop ideas about what should be accomplished and understand the scope and expectations of the faculty supervisor.

Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 310
SE 322
SE 330
SE 324
SE 328
Prerequisites
GPA of at least 3.0/4.0, signed research contract, and consent of the departmental chair.

SE 440 : Special Topics in Software Engineering

This course provides instruction and experience in timely topics related to the design and development of quality-engineered software.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 324

SE 440 : Special Topics in Software Engineering

This course provides instruction and experience in timely topics related to the design and development of quality-engineered software.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 324

SE 441 : Telecommunications Software Design

Formal models for telecommunications software design and analysis. Protocol specification, design and validation. Protocol verification and testing. Conformance testing. Protocol synthesis. Protocol conversion.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
EE 305

SE 442 : Social Networks for Software Engineers

Student will learn the fundamental interface, systems, and algorithms concepts in designing social software. The case-based syllabus will cover insights from both research and industry. As a student, the student will contribute to this burgeoning field through a quarter-long, team-based project. Students are required to enter the class with an initial project idea.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 324

SE 443 : Cloud Computing for Software Engineers

This course will leverages the World Wide Web to fulfill computing needs. It packages applications, computing power, and storage as a metered service similar to a utility. This model is designed to supplant the traditional mechanism of desktop computing in many cases. This course will cover the origin, theory, enabling technology, and hands-on labs for key concepts in cloud computing.

Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 324
EE 305

SE 444 : Artificial Intelligence
This course aims in developing computer applications, which encompasses perception, reasoning and learning and to provide an in-depth understanding of major techniques used to simulate intelligence.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 214
SE 324

SE 445 : Information and Software Security
This course provides an introduction to the topic of security in the context of computer networks. The goals are to provide students with a foundation allowing them to identify, analyze, and solve network-related security problems in information systems with the emphasis on the engineering aspects of information security and software security issues.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisites
STA 212, SE 324

SE 446 : Introduction to Big Data
In this course the students will learn the Big Data platform and data governance in order to efficiently store and manage massive amounts of data. In addition, they will learn Big Data architecture, such as Hadoop, Map Reduce, Hbase, Big SQL and BigSheets. Students will use tools to capture, store and analyze structured and unstructured data.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 312
SE 314

SE 447 : Introduction to Machine Learning
This course introduces machine learning with a practical approach covering some of the most common learning models, algorithms, tools, and techniques. From supervised learning, it covers linear regression, logistic regression, and neural networks. From unsupervised learning, it covers K-means clustering, dimensionality reduction (principal component analysis), and anomaly detection. The course also discusses practical aspects considered when applying machine learning: data visualization, model selection, flow, model evaluation (testing, validation, overfitting, underfitting, bias, variance), regularization, and large scale machine learning.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 312
SE 314

SE 448 : Blockchain Development
In this course the students will learn concepts of the Blockchain technology such as business networks, participants, assets, and trusted transactions. They will also learn how to develop a complete Blockchain network solution using up-to-date tools and platforms.
Credits 3
Lab Hours 0
Lecture Hours 3
Tutoring Hours 0
Prerequisite Courses
SE 324

SE 449 : Data Analytics
This course prepares students to gather, describe, and analyze data, and use advanced statistical tools to make decisions on operations, risk management, finance, marketing, etc. Analysis is done targeting economic and financial decisions in complex systems that involve multiple partners. Topics include probability, statistics, hypothesis testing, regression, clustering, decision trees, and forecasting.
Credits 3
Prerequisite Courses
SE 312
SE 314

SE 450 : Cryptography and Data Privacy

This course is an introduction to the basic concepts and mechanisms of applied cryptography and data security. It will cover both cryptographic primitives (symmetric encryption, public encryption, MACs, Digital Signatures, Authenticated Encryption, etc.) to cope with the data confidentiality and data integrity. It also emphasizes on how to apply and implement cryptography in practice.

Credits 3

Prerequisite Courses

STA 212
SE 330

SE 451 : Secure Software Engineering

This course provides a foundation for building secure software by applying security principles to the software development lifecycle. Topics covered include security in requirements engineering, secure designs, risk analysis, threat modeling, deploying cryptographic algorithms, defensive coding, penetration testing, fuzzing, static analysis, and security assessment. Students will learn the practical skills for developing and testing for secure software while also learning sound security fundamentals from real-world case studies.

Credits 3

Prerequisite Courses

SE 310
SE 330

SE 452 : Network Security

This course addresses security issues for TCP/IP-based and NT networks. Access Control and Communications Security issues will be covered as well as Internet and intranet security.

Credits 3

Prerequisite Courses

EE 305
SE 330

SE 453 : Security Risk Management & Control

This course provides an overview of the fields of IT Security and Risk Management. IT Security and Risk Management are concerned with threats to the Confidentiality, Integrity, and Availability (CIA) of information systems. Risk management comprises a set of coordinated activities to direct and control an organization regarding risk. This course will explore how IT Security and Risk Management intersect with the management of records and information in digital environments and will address the application of IT Security and Risk Management theories, principles, and techniques to the management records and information-related risks.

Credits 3

Prerequisite Courses

SE 330

SE 454 : Ethical Hacking and Systems Defense

The course will start with an analysis of various vulnerabilities in an application, system/device or a network protocol (or network) which can be exploited to threaten the data and services of a software system. Using these vulnerabilities, students will learn how to collect information before the attack, gain access, retrieve useful information, keep the access for a period of time, and avoid leaving traces of the attack. Countermeasures for each of the vulnerabilities explored will also be discussed. Students will also learn how to assess the security state of an application/system/network based on the vulnerabilities present in it. The course will include both theoretical and practical aspects: concepts learned in the lectures will be practiced in a closed environment using virtual machines.

Credits 3

Prerequisite Courses

SE 330
SE 452

SE 495 : Software Engineering Capstone Project I
This course is the first part of a two-semester senior-year capstone project. It is intended to complement the theory and to provide an in-depth, hands-on experience in all aspects of software engineering. The students will work in teams on projects of interest to IT sector and will be involved in analysis of requirements, architecture and design, implementation, testing and validation, project management, software process, software maintenance, and software re-engineering. In this part students give project plan, provide software requirement specification document and develop software high-level design.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 310
SE 324
Corequisites
None

SE 496 : Software Engineering Capstone Project II
This is the second part of the capstone project started in SE 495 course. In this part, students develop a software solution based on the low-level design which was produced as a part of SE 495. This includes implementation, testing, managing, and evaluating their final product. Student teams must deliver the executable code, a final report, and present and demonstrate their software solution.
Credits 3
Lab Hours 6
Lecture Hours 0
Tutoring Hours 0
Prerequisite Courses
SE 495
Corequisites
None

Medicine

MED 471 : Medicine
Medical students gain initial clinical experience under direct supervision of clinical instructors. The nine weeks period of enrollment in the teaching hospitals has major and lasting effects on the medical professional. The program for medical students aims to: Provide the basic bed-side skills on history taking and physical assessment, teach the students clinical medicine and link it to basic biomedical sciences, introduce students to work within clinical teams and acknowledge limits, acquire professionalism in medicine, respect for patients, and medical ethics, Gain experience in proper documentation, Enhance communication skills with patients, their families, nursing, and colleagues.
Credits 9
Prerequisite Courses
FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364
Corequisites
PED 472, SUR 481, GYN 482

Pediatrics

PED 472 : Pediatrics
This course will help students in the acquisition of basic knowledge of growth and development (physical, physiologic and psychosocial) and of its clinical application from birth through childhood, acquisition of the knowledge necessary for the diagnosis and initial management of common paediatric acute and chronic illnesses, an understanding of the approach of paediatricians to the health care of children, an understanding of the influence of family, community and society on the child in health and disease, development of communication skills that will facilitate the clinical interaction with children and their families and thus ensure that complete and accurate data are obtained, development of competency in the physical examination of infants and children, development of clinical problem-solving skills, development of strategies for health promotion as well as disease and injury prevention and Development of the attitudes and professional behaviors appropriate for clinical practice.
Credits 9
Prerequisite Courses
FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364
Corequisites
MED 471,SUR 481, GYN 482

Radiology

RAD 245 : Radiology
In this course, students are required to become aware of and understand the nature of all currently available imaging procedures. Acquire a basic understanding of what each imaging procedure can and cannot accomplish and how to use these procedures in the evaluation of the clinical problem. Gain a firm knowledge of the indications, contradictions, risks and costs of commonly used imaging procedures. Learn the preparation and post procedural routines for imaging examinations. Learn to recognize basic anatomic structures as they appear on imaging studies in the normal patient and in common disease states.
Credits 2
Prerequisites
None

Chemistry

CHM 101 : General Chemistry I
CHM 101 is the first semester course of a two semesters General Chemistry sequence for students majoring in science, or preparing for entry into health professional programs such as medicine, dentistry, pharmacy and veterinary science. CHM 101 provides a comprehensive introduction to the basic principles of chemistry including atomic and molecular structure, properties of gases, liquids and solids, and chemical thermodynamics.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisites
None
Corequisites
CHM 101 L

CHM 101 L : General Chemistry I lab
General Chemistry I Lab provides an introduction to the fundamentals of laboratory techniques in chemistry. Students will carry out measurements, prepare solutions, and perform qualitative and quantitative experiments.
Credits 1
Co-Requisite Courses
CHM 101

CHM 102 : Introduction to Chemistry
CHM 102 is a single-semester, terminal course designed to provide engineering students with a foundation in the fundamental principles and concepts of chemistry. Topics covered include atomic structure, nomenclature, chemical equations, stoichiometry, thermochemistry, chemical bonding, solution properties, kinetics, equilibrium, electrochemistry, descriptive inorganic, nuclear chemistry, and bio/organic chemistry.
Credits 3
Prerequisites
None
Corequisites
CHM 102 L

CHM 102 L : Introduction to Chemistry lab
Introduction to chemistry lab provides an introduction to the fundamentals of laboratory techniques in chemistry. Students will carry out measurements, prepare solutions, and perform qualitative and quantitative experiments.
Credits 1
Co-Requisite Courses
CHM 102

CHM 107 : Chemistry in the Environment and Everyday Living
CHM 107 examines the role of chemistry in everyday life and in the environment, and is intended for students not pursuing scientific or engineering majors. Chemical principles are introduced to the extent necessary for understanding of issues.
Credits 3
Prerequisites
None

CHM 112 : General Chemistry II
CHM 112 is the second of a two semester chemistry course for science majors or those preparing for entry into health professional programs such as medicine, dentistry, pharmacy and veterinary science. CHM 112 builds on fundamental principles mastered in the first semester of the course.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisite Courses
CHM 101
Corequisites
CHM 112 L

CHM 112 : General Chemistry II lab
General Chemistry II Lab (CHM 112 L) The general chemistry laboratory is designed to support and illustrate chemical concepts studied in the lecture portion of the course, as well as to introduce important laboratory techniques and encourage analytical thinking.
Credits 1
Prerequisite Courses
CHM 101 L
Corequisites
CHM 112 L

CHM 211 : Organic Chemistry I
CHM 211 is the first semester of a two semester sequence for science majors and those preparing for entry into health professional programs such as medicine, dentistry, pharmacy and veterinary science. CHM 211 focus on bonding principles, functional groups, isomerism, stereochemistry, nomenclature, synthesis and reactions of alkanes, cycloalkanes, alkenes, alkynes, alcohols, and alkyl halides. Addition, elimination, rearrangement, and substitution mechanisms.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisite Courses
CHM 112
Corequisites
CHM 211 L

CHM 211 L : Organic Chemistry I lab
Organic chemistry I Lab provides an introduction to the fundamentals to laboratory techniques in organic chemistry. This lab introduces students to chemical reactions and syntheses of aromatic, carbonyl, and amine compounds.
Credits 1
Co-Requisite Courses
CHM 211

CHM 212 : Organic Chemistry II

CHM 212 is continuation of CHM 211. It covers nomenclature, properties, reactions and synthesis of conjugated dienes, aromatics, organometallics, alcohols, phenols, ethers, aldehydes and ketones, carboxylic acids and derivatives, and amines. Mechanisms include electrophilic aromatic substitution and nucleophilic addition. Carbohydrates, amino acids, proteins and nucleic acids

Credits 4

Lab Hours 1

Lecture Hours 3

Prerequisite Courses

CHM 211

Corequisites

CHM 212 L

CHM 212 L : Organic Chemistry II lab

Organic chemistry II Lab (CHM 212 L) introduces students to chemical reactions and syntheses of aromatic, carbonyl, and amine compounds. Special topics in carbohydrate, amino acid, and lipid chemistry. Lab work includes simple and multi-step synthesis and spectral identification.

Credits 1

Co-Requisite Courses

CHM 212

CHM 213 : Analytical Chemistry

Quantitative Analysis (CHM 213) provides a comprehensive introduction to the fundamental theory and laboratory techniques in analytical chemistry. This includes experimental errors and statistics, data analysis methods. Chemical equilibria, titrations, spectrophotometry, and analytical separation methods.

Credits 3

Prerequisite Courses

CHM 112

Corequisites

CHM 213 L

CHM 232 : Organic chemistry

Organic chemistry is the chemistry of compounds containing the element Carbon. Therefore, this course is essential to educate the students about organic nomenclature as a basic knowledge to understand the organic physical-chemical properties of drugs. The course provides the students with essential knowledge of atoms, molecules, bonds, function groups, and structure required to define alkanes, alkenes, alkynes, alcohols, ethers, carbonyl compounds, phenolic compounds, and aryl halides to understand their properties, structures and actions. The students will determine the chemical structure using Infra-Red (IR), Nuclear Magnetic Resonance (NMR) and Mass Spectroscopy (MS). The students will designate the mechanisms of organic reactions of substitution, addition, and elimination, and understand stereochemistry to detect chiral molecules and explain the difference in stereoisomers characters and reactions. It will cover in depth physical properties of drug compounds as a basic knowledge required for further subjects such as drug delivery system and pharmaceutical chemistry. Major organic chemical reactions covered in this course will help the student to understand subjects such as pharmacology and medicinal chemistry in the coming semesters.

Credits 4

Prerequisites

PCHE 101/112

Corequisites

None

CHM 232 : Organic Chemistry

CHM 232 provides the students with essential knowledge required to define organic compounds and to understand their properties, structures and actions. The students will determine the chemical structure using IR, NMR, and Mass Spectroscopy. The mechanisms of organic reactions including addition, elimination, substitution, and rearrangement reactions will be discussed. Major organic chemical reactions covered in this course will help the student to understand subjects such as pharmacology and medicinal chemistry in the coming semesters.

Credits 3

Corequisites

CHM 232L

CHM 232 L : Organic Chemistry lab
Organic chemistry Lab provides an introduction to the fundamentals to laboratory techniques in organic chemistry. This includes chemical reactions and syntheses of aromatic, carbonyl, and amine compounds discussed in CHM 232 course.
Credits 1
Co-Requisite Courses
CHM 232

CHM 310 : Introduction to Instrumental Analysis
Introduction to the theories of analysis by instrumental methods. Basic electronics are applied to chemical measurements. Topics include an introduction to the theory of spectroscopy, ultraviolet, visible, infrared, and others. CHM 310 is an introduction to basic principles and the instrumental design of a variety of analytical techniques, including: electrochemical, spectrochemical (molecular and atomic), chromatographical and mass spectrochemical techniques.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisite Courses
CHM 212
Corequisites
CHM 310 L

CHM 310 L : Introduction to Instrumental Analysis lab
Introduction to Instrumental Analysis lab (CHM 310 L) will introduce the basic analysis utilizing different instruments such as UV-visible spectrophotometer, IR, NMR, GC, HPLC, Potentiostat, and equipments relevant to the materials of CHM 310 course.
Credits 1
Co-Requisite Courses
CHM 310

CHM 331 : Medicinal Chemistry
Medicinal Chemistry (CHM 331) will explore role of chemistry in the design and action of drugs. Principles of drug discovery, drug development, drug interactions, and the structure-activity relationship of drugs will be discussed. Aspects of biochemistry and physical chemistry will be covered as required to understand the chemistry of drug action and drug metabolism. Selected case studies from the major classes of drugs and literature will be used to illustrate concepts covered in the course.
Credits 3
Prerequisite Courses
CHM 212

CHM 332 : Environmental Chemistry
The purpose of this course is to gain an understanding of the fundamental chemical and biochemical processes that are occurring in the environment. The course will reflects on major issues in the environment including atmospheric chemistry, air pollution, climate change, energy, water chemistry and water pollution, toxic heavy metals, organic pollutants such as pesticides, herbicides, insecticides , and waste and recycling.
Credits 3
Prerequisites
CHM 112 and CHM 211

PBIO 112 : Preparatory Biochemistry
This introductory course is designed to provide a solid foundation in basic biochemistry for pre-medical students and students entering the allied health sciences. The course begins with a brief survey of the principles of organic chemistry including functional groups, acidity, basicity, stereochemistry, and chirality of organic molecules. This is followed by a comprehensive survey of biochemistry with emphasis on the structure and function of biomolecules including carbohydrates, lipids, proteins, enzymes, neurotransmitters, hormones, and nucleotides. The course also provides an introduction to metabolic pathways and bioenergetics.
Credits 3
Prerequisite Courses
PCHE 101

PBIO 112/BIO 113 : Principles of Biochemistry
This course will help student to understand and appreciate organic chemistry as a necessary tool and an integral part of understanding biochemistry and the important biological molecules, their physical, chemical and biological properties and functions. This course will start with reviewing general chemistry concepts, to progress with organic functional groups and important organic reactions, structure and reactivity of aromatic compounds, polymers, and biopolymers. Important structures, and functions of biological macromolecules, such as proteins, nucleic acids, carbohydrates and lipids, which provide the structure of cells will also be discussed.
Credits 3
Prerequisites
None

PCHE 101 : Preparatory Chemistry I
This course designed to give students a solid foundation in basic chemistry as a preparation for undergraduate studies. Students will learn of the central role of chemistry in science, the history and development of simple models used to describe the material world, with an emphasis on structure of matter at the atomic and molecular level. Students will learn how major classes of compounds, with characteristic properties, can be identified by gaining an appreciation of how different atoms interact with each other. They will understand that structure determines physical and chemical properties. They will understand different types of chemical bonds; covalent, metallic and ionic bonds. They will learn also, the structure of organic compounds and their relative properties depending on the functional groups.
Credits 3

PCHE 101/ CHM 103 : Chemistry I
This course is designed to give students a solid foundation in basic chemistry as a preparation for undergraduate studies. Students will learn of the central role of chemistry in science. They will learn the history and development of simple models used to describe the material world, with an emphasis on structure of matter at the atomic and molecular level. Students will learn how major classes of compounds, with characteristic properties, can be identified by gaining an appreciation of chemical bonding and how different molecules interact with each other. They will understand that structure determines physical and chemical properties. Then they will learn how chemists quantify matter, and finally they will study some of the major types of chemical reactions. Students will also develop practical skills in laboratory protocols and writing of formal laboratory reports.
Credits 3
Prerequisites
None

PCHE 112 : Preparatory Chemistry II
This course is designed to give students a solid foundation in basic chemistry as a preparation for undergraduate studies. Students will learn the arithmetic of chemical equations and to carry out calculations using balanced equations. They will apply kinetic theory to gases to explain their properties. Students will explore the gas laws experimentally and use these laws to carry out calculations. They will understand the thermochemical reactions and how to calculate the energy released or absorbed during a chemical change. The properties of acids and bases will be discusses along with measurement and calculation of pH. A basic appreciation of buffer action will be attained. Oxidation and reduction will be defined and reactions involving these processes will be carried out and their balanced equations deduced. Electrochemical reactions and electrochemical equations will be introduced to the students with the emphasis on the importance of the different applications of electrochemical reactions such as batteries, fuel cells and electrolytic cells.
Credits 3
Prerequisite Courses
PCHE 101

PCHE 112/CHM 113 : Chemistry II
This course is designed to give students a solid foundation in basic chemistry as a preparation for undergraduate studies. Students will learn the stoichiometry of chemical equations and to carry out calculations using balanced equations. They will apply kinetic theory to gases to explain their properties. Students will learn about the gas laws both theoretically and experimentally and use these laws to carry out calculations. They will learn about the flow of energy in chemical reactions and how energy is quantified experimentally. The properties of acids and bases will be studied along with measurement and calculation of pH. The fundamental principles governing buffer action will be learned. Oxidation and reduction will be defined and reactions involving these processes will be carried out and their balanced equations deduced. The sources, properties and major uses of hydrocarbons will be emphasized. Students will learn to classify organic molecules according to functional groups. They will study basic reactions of selected functional groups. The importance of polymerization and polymers will be emphasized.
Credits 3
Prerequisites
None

English

ENG 101 : Freshman English 1
A skills-based writing-intensive course that introduces and develops the students'92 abilities to organize, visualize and write effective paragraphs and essays. The course covers the writing process, and academic oral and written rhetorical moves and grammatical elements specific to a variety of paragraphs and essays. Students will explore and analyse how language is used to achieve communicative goals common to academic writing in various paragraphs and essay genres through in-class writing activities, lectures and homework assignments.
Credits 3
Prerequisites
admission to AU colleges

ENG 102 : Freshman English 1
A skills-based writing-intensive course that introduces and develops the students'92 abilities to organize, visualize and write effective paragraphs and essays. The course covers the writing process, and academic oral and written rhetorical moves and grammatical elements specific to a variety of paragraphs and essays. Students will explore and analyse how language is used to achieve communicative goals common to academic writing in various paragraphs and essay genres through in-class writing activities, lectures and homework assignments.
Credits 2
Prerequisites
admission to AU colleges

ENG 112 : Freshman English II
As a continuation of ENG 101/102, ENG 112/113 focuses on developing the students'92 abilities to organize, visualize and write effective essays. The course continues to cover the writing process and the academic oral and written rhetorical moves and grammatical elements relevant to different essay types not covered in ENG 101/102.
Credits 3
Prerequisite Courses
ENG 101

ENG 113 : Freshman English II
As a continuation of ENG 101/102, ENG 112/113 focuses on developing the students'92 abilities to organize, visualize and write effective essays. The course continues to cover the writing process and the academic oral and written rhetorical moves and grammatical elements relevant to different essay types not covered in ENG 101/102.
Credits 2
Prerequisite Courses
ENG 102

ENG 222 : Technical Writing
Develops reading, listening/speaking and research skills that enhance technical discourse to facilitate advanced-level written expressions that explore the technological parameters of the students'92 chosen fields.
Credits 3
Prerequisites
ENG 112 or ENG 113

ENG 223 : Literature

The course introduces students to the four major genres of literature: novels, short stories, drama, and poetry. Focus will be brought to the understanding and appreciating of different major works of literature, Students will be able to analyze and respond to major works of literature.

Credits 3

Prerequisites

ENG 112 or ENG 113

ENG 224 : English for Medical Students

Is concerned with developing fluency and confidence in using English in medical contexts. It increases EFL medical students' familiarity with medical written language and discourse in different medical contexts. The focus is on carrying out specialized activities in English, but attention is given to reading comprehension skills (expanding the English general and medical vocabulary repertoire through extensive readings), academic and scientific writing skills, and technical medical terms as required.

Credits 2

Prerequisites

ENG 112 or ENG 113

ENG 231 : Medical terminology

This course is essential for students pursuing any health care profession to learn and recognize word roots, prefixes, suffixes used in medical communications, to combine words to create meaningful medical conditions as well as to realize their definition and identify the correct spelling. The students will acquire the foundation, pronunciation and abbreviation of medical terms related to different body systems (cardiovascular, respiratory, renal, gastrointestinal,.. etc.) including structures, procedures, and diseases. It assists health care professionals to comprehend and utilize medical terminology to communicate with each other and with other health care professionals efficiently to maximize patients care.

Credits 2

ENG 231 : Medical Terminology

Medical terminology is the study of the principles of building clinical terms used in health care professions. By covering essential, basic terms of the body'92s systems, students will be actively learning to understand and use Latin and Greek roots, suffixes, and prefixes. Etymologies of words used in the health care professions will also be emphasized as aids towards understanding and retention

Credits 2

Prerequisites

ENG 113 or 112

PENG 004 : Preparatory English Level 4

PENG 004 is a 4-credit hour, 14-hour contact week, 8-week course that specifically aims to develop the students'92 four language skills: listening, speaking, reading and writing. A primary aim of the course is to develop students'92 reading skills including understanding main ideas, supporting details and making inferences. Goals for writing focus on understanding the structure and features of a paragraph including the topic, supporting, and concluding sentences. The emphasis of the communication component is on understanding main ideas and supporting details while listening to academic lectures on a variety of subjects. Additionally, students will develop note-taking strategies to organize and synthesize the ideas expressed in lectures.

Credits 4

Prerequisites

acceptable minimum score on placement exams

PENG 005 : Preparatory English Level 5

PENG 005 is a 4-credit hour, 14-hour contact week, 8-week course that specifically aims to develop the students'92 four language skills: listening, speaking, reading and writing, with special emphasis on reading and writing. The primary aim of the course is to develop students'92 reading skills including understanding main ideas, supporting details, and making inferences. The writing component centers on extending students'92 ability to summarize and respond to a range of sources, composing clear, well-organized, and coherent texts that incorporate a variety of rhetorical modes and essay formats. The emphasis of the communication component is on understanding main ideas and supporting details while listening to academic lectures on a variety of subjects. Additionally, students will develop note-taking strategies to organize and synthesize the ideas expressed in lectures.

Credits 4

Prerequisites

PENG 004 or acceptable minimum score on placement exams

PENG 006 : Preparatory English Level 6

PENG 006 is a 4-credit hour, 14-hour contact week, 8-week course that focuses primarily on developing reading and writing skills with specific emphasis on communication and grammar. The writing component centers on extending students'92 ability to express themselves in clear, well-organized, and coherent text. Furthermore, the reading component centers on extending students'92 ability to interact with the written word, to reflect upon, analyze, synthesize, and to critically evaluate information from a variety of textual forms. The listening component focuses on identifying main and supporting points in an academic-style lecture while developing note-taking skills. The speaking component focuses on developing students'92 ability to speak clearly and confidently on a specific subject to an audience.

Credits 4

Prerequisites

PENG 005 or acceptable minimum score on placement exams

PENG 007 : Preparatory English Level 7

PENG 07 is a 3-credit hour, 12-hour contact week, 8-week course that specifically aims to develop the students'92 four language skills: listening, speaking, reading and writing, with special emphasis on reading and writing. The focus of the listening and speaking component centers on the retention and analysis of information based on the students'92 ability to engage in verbal discourse. Additionally, the course is focused on developing students'92 comprehension skills to read, reflect upon, analyze, synthesize, and evaluate information in a variety of texts. Furthermore, the course aims to instruct students on writing clear, well-organized and coherent academic text within diverse disciplines as well as varied settings.

Credits 3

Prerequisites

PENG 006 or acceptable minimum score on placement exams

PENG 008 : Preparatory English Level 8

PENG 08 is a 3-credit hour, 12-hour contact week, 8-week course that specifically aims to develop the students'92 four language skills: listening, speaking, reading and writing, with special emphasis on reading and writing. The focus of the listening and speaking component centers on the retention and analysis of information based on the students'92 ability to engage in verbal discourse. Additionally, the course is focused on developing students'92 comprehension skills to read, reflect upon, analyze, synthesize, and evaluate information in a variety of texts. Furthermore, the course aims to instruct students on writing clear, well-organized and coherent academic text within diverse disciplines as well as varied settings.

Credits 3

Prerequisites

PENG 007 or acceptable minimum score on placement exams

PSCS 101 : Study and Communication Skills

Course instruction will incorporate study skills, research skills, tech skills, and application of team and interpersonal communication skills to create effective written discourse as well as oral presentations. In turn, achievement of these skill objectives will facilitate the research and communication process as utilized by all AUPP pathway students.

Credits 2

PTECH 101 : Preparatory Technical Writing I
PTECH 101 is a 3-credit hour, 16-week course for business, engineering, and science pathway PENG-exempt students. It is a research writing-intensive course focused specifically on the development of students'92 English language skills, i.e., with special emphasis on reading, writing, and research. The primary aim of this course is to develop students'92 ability to read, to reflect, to analyze, and to evaluate information in a variety of texts; as well as to respond with clear, well-organized and coherent academic text.
Credits 3

PTECH 112 : Preparatory Technical Writing II
PTECH 112 is a 3-credit hour 16-week course that builds on the course learning objectives achieved in the prerequisite course: PTECH 101. It is a research writing-intensive course with a more in-depth focus on the development of students'92 English language skills, i.e., with special emphasis on reading, writing, and research. The primary aim of this course is to further the development of students'92 reading comprehension; to reflect, to analyze, to synthesize, and to evaluate information in a variety of texts; as well as to respond with clear, well-organized and coherent academic discourse.
Credits 3

Life Science

LST 421 : Life Science Special Topics I
LST courses introduces special topics relevant to Biomedical Science. The course subjects can be modified according to faculty availability, students' preferences and pathways.
Credits 3
Prerequisite Courses
BIO 346

LST 421 : Epigenetics
The course will first review recent progress in our understanding of fundamental epigenetic mechanisms and events controlling normal human development and physiology, such as growth, metabolism and ageing processes together with environmental factors affecting human epigenome. This will follow by reviews of recent discovering of epigenetic etiology of some most significant human disorders.

Advanced Pharmacy Practice

APP 600 : Advanced pharmacy practice experience rotations - sixth year
After completion of the previous courses successfully, students will participate in a series of advanced clinical rotations in which they communicate with patients, professionals, and other health profession students; identify and assess clinical problems; further develop their skills in patient care and pharmaceutical services; contribute effectively as a member of a health care team; and formulate solutions to optimize patient outcomes. A total of 10 clinical rotations (45 weeks) will be required during a full academic year (total of 2,000 hours) of clinically-oriented rotations offered primarily at off-campus sites.

There will be 5 core rotations that are mandatory for all (ambulatory care, general internal medicine, institutional pharmacy practice, community pharmacy practice, and pharmacy administration and management).

Another 3-5 rotations can be chosen from the selective/ elective options (general paediatrics, infectious disease, cardiology, adult critical care, drug information, TPN, and adult haematology/oncology).

The remaining 0-2 rotations are freely chosen from the free elective list that comprises (organ transplant, nephrology, acute care, pharmacy automation and informatics, surgery, pediatric/neonatal critical care, investigational drug services, medication safety, pharmacy quality improvement, pharmaceutical industry, regulatory affairs, medical toxicology). This proposed structure is the make most of the rotations focused on direct patient care and communication.
Credits 4

APP 601 : Advanced pharmacy practice experience rotations - sixth year

After completion of the previous courses successfully, students will participate in a series of advanced clinical rotations in which they communicate with patients, professionals, and other health profession students; identify and assess clinical problems; further develop their skills in patient care and pharmaceutical services; contribute effectively as a member of a health care team; and formulate solutions to optimize patient outcomes. A total of 10 clinical rotations (45 weeks) will be required during a full academic year (total of 2,000 hours) of clinically-oriented rotations offered primarily at off-campus sites. There will be 5 core rotations that are mandatory for all (ambulatory care, general internal medicine, institutional pharmacy practice, community pharmacy practice, and pharmacy administration and management). Another 3-5 rotations can be chosen from the selective/ elective options (general paediatrics, infectious disease, cardiology, adult critical care, drug information, TPN, and adult haematology/oncology). The remaining 0-2 rotations are freely chosen from the free elective list that comprises (organ transplant, nephrology, acute care, pharmacy automation and informatics, surgery,'85and many others). This proposed structure is the make most of the rotations focused on direct patient care and communication.

Credits 4

Ambulatory Care

AMB 5X2 : Ambulatory Care

The ambulatory care clerkship course is designed to offer students a comprehensive overview of the important ambulatory and primary healthcare specialties. Through this clerkship course, students rotate between three specialties: anesthesia, emergency medicine, and family medicine. Students spent one week in anesthesia, three weeks in emergency medicine, and four weeks in family medicine. Through their rotations, students are exposed to the common diseases managed in these specialties and primary health care, their management, related examinations, and procedures.

Credits 9

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364
MED 471
PED 472
SUR 481
GYN 482

Corequisites

IMD 591, INS 592, SSP5X1

Anthropology

ANT 101 : Introduction to Sociocultural Anthropology

The course explores anthropology and its four major sub-branches. It focuses on the significance of sociocultural anthropology for appreciating the diversity of contemporary and past human cultures, and creating an awareness of ethnographic research methods and diverse anthropological perspectives. It enhances students'92 understanding of the similarities and differences among human cultures and their appreciation of cultural constructions of realities.

Credits 3

Prerequisites

None

ANT 102 : Entrepreneurial Multiculturalism

Presents interdisciplinary knowledge on how business cultures evolve in various societies around the world. It also explores why some individuals/social groups are more successful in entrepreneurship than others within the same societies and cross-culturally.

Credits 3

Prerequisites

None

ANT 233 : Anatomy and histology

This course is designed to expand the basic anatomy concepts gained from human structure and function courses in the first year. It provides fundamentals of the organization of the human body and provides a comprehensive foundation for topics including anatomical structure of cell, tissues, organs, and organ systems. Organ systems covered will include central nervous system, cardiovascular system, gastrointestinal, musculoskeletal, respiratory, urinary, and others in a systemic and integrated approach to promote critical thinking of the clinical consequences of cellular disorders and tissue related diseases. In addition to lectures, students will gain practical experience of the overall structure of these organ systems and of their components by working with models and histological specimens to prepare the student for the pathophysiological concepts of diseases and their pharmacological interventions in the fourth year.

Credits 4

Prerequisites

PHSF 101 112

Co-Requisite Courses

PHY 234

Arabic

ARB 101 : Arabic Language I

Concentrates on developing Arabic language skills in areas related to paragraph writing, orthography, punctuation, style, vocabulary, and conversation in Standard Arabic. It also enhances students'92 literary appreciation and provides morphological and syntactic insight into text analysis. This course counts as a humanities course in the university'92s General Education Requirements.

Credits 2

Prerequisites

None

ARB 102 : Elective/ Arabic language I
This course concentrates on developing Arabic language skills in areas related to paragraph writing, orthography, punctuation, style, vocabulary, and conversation in Standard Arabic. It also enhances students'92 literary appreciation and provides morphological and syntactic insights into text analysis. This course counts as a humanities course in the university'92s General Education requirements.
Credits 2
Prerequisite Courses
CHM 232
Corequisites
None

ARB 112 : Arabic Language II
Focuses on developing students'92 Arabic language skills to higher proficiency levels in various domains, including essay writing, and conversation in Standard Arabic. The course also introduces the different literary schools and their respective characteristics. It counts as a humanities course in the university'92s General Education Requirements.
Credits 2
Prerequisite Courses
ARB 101

ARB 112 IN : Arabic language II Intermediate Level
As a continuation of ARB 101 IN, ARB 112 IN focuses on Arabic syntax, semantics, report and essay writing, and literary appreciation and evaluation.
Credits 2
Prerequisites
ARB 101 IN

ARB 112NN : Arabic language II for Non-natives
Continues and builds upon the fundamental elements of Arabic within a cultural context. Continued emphasis on the development of basic language skills, vis., listening, speaking, reading and writing in addition to grammar and contextual vocabulary.
Credits 2
Prerequisites
ARB 101 NN

ARB 113 : Arabic Language II
Focuses on developing students'92 Arabic language skills to higher proficiency levels in various domains, including essay writing and conversation in Standard Arabic. The course also introduces the different literary schools and their characteristics. It counts as a humanities course in the university General Education Requirements.
Credits 2
Prerequisite Courses
ARB 102

Behavior Science

BHS 243 : Behavior Science
This course examines progression through the life cycle, including birth through senescence '96 cognitive, language, motor skills, and social and interpersonal development - sexual development '96 influence of developmental stage on physician-patient interview and psychological and social factors influencing patient behavior '96 personality traits or coping style, including coping mechanisms '96 psychodynamic and behavioral factors, related past experience '96 family and cultural factors, including socioeconomic status, ethnicity, and gender '96 adaptive behavioral responses to stress and illness '96 maladaptive behavioral responses to stress and illness '96 interactions between the patient and the physician or the health care system '96 patient adherence (general and adolescent).
Credits 2
Prerequisites
None

Biochemistry

BCH 242 : Biochemistry

This course will build upon on the knowledge the students acquired from the biochemistry course in the first year. The course will lay the foundation for subsequent courses in pharmacology and pathophysiology by expanding students'92 knowledge about proteins, nucleic acids, carbohydrates, and lipids metabolism. It is designed to provide an understanding of the molecular and cellular features that constitute and regulate the central pathways in metabolism. Such knowledge will allow for an understanding of enzyme mechanisms, the therapeutic use of enzyme inhibitors, intermediary metabolism, and accordingly understand the effects of drugs on various metabolic pathways, signal transduction, and biotransformation processes. The laboratory sessions will deal with the isolation, characterization, and quantitative determination of carbohydrates, lipids and proteins.
Credits 4

Biology

BIO 101 : General Biology I

The course covers major fields and fundamental principles of modern biology and provides a foundation for more in-depth and specialized studies during the following years. The course concentrates on the core concepts of modern biology and provides knowledge about the role of various biological macromolecules in cell physiology; how different types of cells are integrated into multicellular systems; molecular and chromosomal mechanism of heredity.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisites
None

BIO 103 : Introduction to Human Biology

The course concentrates on the basic aspects of human biology and provides knowledge about the role of various biological macromolecules in the human body, how different types of cells are integrated into multicellular systems, and how organs and organisms develop and function. The course satisfies the General Education Requirements in Science.
Credits 3
Prerequisites
None

BIO 112 : General Biology II

This is the second module of the general biology introductory course designed for the Life Science Major curriculum. It concentrates on the fundamental aspects of animal physiology with an emphasis on the human body. The course is focused on the evolution, development, structure, function, health and disease of major physiological systems and regulatory mechanisms coordinating their function in the human organism.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisite Courses
BIO 101

BIO 224 : Human Physiology and Anatomy

The course covers human anatomy and physiology from a systems-based perspective, stressing the ways in which different physiological systems interact. Emphasis is on understanding the integration of human anatomy through biological function, development, evolutionary history and genetics. Several clinical examples are given to illustrate how human variation, including congenital defects, emerges from the interaction of development, form, and function.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisite Courses
PBIO 112

BIO 325 : Conservation Biology

This course is general in nature that provides a general introduction to conservation biology. Conservation Biology is the scientific study of the phenomena that affect the maintenance, loss, and restoration of biological diversity. Topics covered include: 1) the impacts of global warming, species invasions, and habitat destruction on biodiversity, 2) strategies developed to combat these threats, and 3) a consideration of key economic and ethical tradeoffs. Special attention will be paid to current debate and controversy within this rapidly emerging field of study.

Credits 3

Prerequisite Courses

BIO 223

BIO 345 : Molecular Biology I

As the first module of the Molecular Biology course, BIO 345 concentrates on molecular mechanisms of genetic processes. This module explains how the flow of biological information from DNA to RNA to protein gives rise to the recognizable, inherited attributes of living organisms. It uses seminal experiments to introduce the students to basic classical and molecular genetics, and then expands on these themes to include genetic engineering and genomic approaches to these phenomena.

Credits 4

Lab Hours 1

Lecture Hours 3

Prerequisite Courses

PBIO 112
BIO 223
CHM 112
CHM 211

BIO 346 : Biochemistry I

The two-module Biochemistry course concentrates on the chemical properties of biological macromolecules with particular attention to the relationship between structure and biological function. The first module specifically covers amino acids, the fundamentals of protein structure, the basics of enzyme catalysis and kinetics, lipids, and membrane structures, transport proteins, the physicochemical basis of signal transduction, vitamins and their functional role in the body.

Credits 4

Lab Hours 1

Lecture Hours 3

Prerequisite Courses

PBIO 112
CHM 211
BIO 223

BIO 357 : Molecular Biology II

As the second module of the Molecular Biology course, BIO 357 concentrates on molecular mechanisms of cellular physiology and interactions. This module provides a detailed knowledge of the structural organization and differentiation of eukaryotic cells as well as key processes in development that are based on cell-cell communication and cell movement. It introduces fundamental properties of the cytoplasm and the roles of the cytoskeleton in fundamental biological processes including chromosome separation, cell motility and intracellular transport processes as well as the evolution, function and biogenesis of cell organelles.

Credits 4

Lab Hours 1

Lecture Hours 3

Prerequisite Courses

BIO 345

BIO 358 : Biochemistry II

The second module of the Biochemistry course concentrates on the complexity of metabolic pathways and their regulation. It reviews the inter-linked metabolic processes involved in nutrient handling and homeostasis.

Credits 4

Lab Hours 1

Lecture Hours 3

Prerequisite Courses

BIO 346

BIO 405 : Human Genetics

IO 405 will cover: 1) the genetic and molecular basis of heredity and inherited traits, 2) how genetics and genomics help to understand the human condition, including genetic diseases, cancer, and human evolution, 3) how basic and translational genetics research is leading to improvements to human health, and 4) current ethical discussions related to human genetics.

Credits 3

Prerequisite Courses

PBIO 112

BIO 440 : Biotechnology

The aim of this course is to provide a basic understanding of modern biotechnology and its applications. This course is focused on the molecular and genetic tools used to analyze and modify organisms to produce desired small molecules and proteins; discuss established and cutting-edge manipulation techniques in the field of synthetic biology. We will also cover the production of biofuels, bioplastics, amino acids, food additives, various bulk chemicals, and biopharmaceuticals.

Credits 3

Prerequisite Courses

BIO 223
ENV 205

PHSF 101/PHY 103 : Preparatory Human Structure and Function I

The field of medical science and medical education has accumulated vast amounts of information about human systems biology including anatomy, physiology and molecular medicine (biochemistry, immunology, microbiology etc.). This course will concentrate on different organ systems that make up the human organism, understanding physiological processes and concepts. The laboratory section of the course is designed to augment the lectures by providing demonstrations and hands-on experimental learning. Topics include cells, body tissues, skin, the skeletal system, the muscular system, the nervous system, the endocrine system, blood and the gastrointestinal tract.

Credits 4

PHSF 101/ PHY 103 and PHSF 112 / PHY 113 : Human Structure and Function I& II

The field of medical science and medical education has accumulated huge amounts of information about human systems biology including anatomy, physiology and molecular medicine (biochemistry, immunology, microbiology etc.). This course will concentrate on knowledge (factual content, understanding processes and concepts), applied and critical cognitive skills (problem based learning, situated and experiential learning). The course will be an introduction to anatomy and human systems physiology. It is expected that students will develop a broad, general understanding of the principles and concepts of human physiology and understand the relationship of structure to function. Students will recognize that structures permit some functions while, at the same time limit others. At a content/factual level, students will have an understanding that certain molecules (for example, enzymes, amino acids, nucleic acids and ATP) are ubiquitous. Students will gain an understanding of homeostasis in physiological systems; they will recognize the checks and balances that exist in living processes.

Credits 4

Prerequisites

None

PHSF 112/PHY 113 : Preparatory Human Structure and Function II

The field of medical science and medical education has accumulated vast amounts of information about human systems biology including anatomy, physiology and molecular medicine (biochemistry, immunology, microbiology etc.). This course will concentrate on different organ systems that make up the human organism, understanding physiological processes and concepts. The laboratory section of the course is designed to augment the lectures by providing demonstrations and hands-on experimental learning. Topics include the cardiovascular system, the lymphatic system, immunity, the respiratory system, the digestive system, the urinary system and the reproductive system.

Credits 4

Prerequisite Courses

PHSF 101/PHY 103

Biostatistics & Epidemiology

BEP 235 : Basics of Biostatistics & Epidemiology
The main objective of this course is to enhance your ability to understand the methods section in articles presented in medical literature and learn basic principles of biostatistics.
Credits 2
Prerequisites
None

BST 245 : Biostatistics and basic research methods
This course will assist the students to develop the necessary skills to understand and perform basic statistical analysis for parametric and non-parametric data using computer-based program. They will be capable of interpreting the results of biomedical research papers in the literature. The students will appreciate the fundamentals of research ethics. Planning research projects, the students will learn how to write a research proposal using systematic approach, starting with comprehensive literature review, writing an introduction, adding a methodology section with an emphasis on data collection protocol and data analysis, summarizing results, and writing an inclusive discussion and an effective conclusion.
Credits 3

Business Analytics

BAN 310 : Business Analytics and Visualization
This course aims to help students apply different data analysis software-based tools to improve their results evaluation and decision-making skills. It starts with the conceptualization of empirical research and concludes with a visual display of research findings to target audiences. It provides students with a good conceptual understanding of the research process as well as practical skills in analytics and visualization necessary to model data and predict solutions to business problems.
Credits 3
Core Requirement
BCC
Prerequisite Courses
OPM 230
OPM 211
OPM 330

BAN 350 : Predictive Analytics and Data Mining
Predictive analytics involves the art of data exploration, visualization, and communication as well as the science of analyzing large quantities of data in order to discover meaningful patterns and generate insights to support decision-making. The primary objective of this course is to introduce various techniques available to extract useful information from the large volume of data an organization can use. Through this course, students will become more competent in extracting the business value from the rich data. This course will cover the concepts, principles, methodologies, and emerging trends in data mining and predictive analytics.
Credits 3
Core Requirement
BEC
Prerequisites
OPM 211, OPM 230

BAN 370 : Business Big Data Intelligence
This course uses Microsoft'92s new Power Tools (Power Pivot, Power Query and Power BI Desktop) to convert real world large data sets into useful information for business decision making. Students will learn how to transform data, load data, and convert the loaded data into useful information for reporting, visualizing, analytics and dashboarding.
Credits 3
Core Requirement
BEC
Prerequisites
BAN 310

BAN 380 : People Analytics and strategy
This course will provide the students with an understanding of how organizations can leverage data science and analytics to gain competitive advantage and how to use the data to align with a company'92s mission and goals. Students will learn how organizations derive business value/impact, and return on investment, and the importance of interpreting and communicating the business case.
Credits 3
Core Requirement
BEC
Prerequisite Courses
MGT 230

BAN 410 : Applied Business Analytics Project
The course provides an opportunity for students to develop a project that draws on their skills in the areas of business problem formulation, design, and statistical analysis to support data-driven decision-making processes. The project also serves to further students'92 skills in terms of developing business insights from quantitative analysis and knowledge of functional areas of business and/or specific industries. Projects will be based on a real business problem faced by organizations in the business community.
Credits 3
Prerequisites
BAN 310

Cardiopulmonary Block

CVP 121 : Cardiopulmonary block
This is a multidisciplinary course (block) integrating topics in basic and applied clinical anatomy, embryology, histology and physiology of respiratory and cardiovascular systems.
Credits 5
Prerequisites
None
Co-Requisite Courses
HLS 122
REN 123

CVP 351 : Cardiopulmonary block
This course examines the etiology, epidemiology, predisposing factors, pathophysiology and classification, of common respiratory and cardiovascular diseases. In-addition, students are required to relate clinical signs and symptoms result of laboratory diagnostic test, and imaging changes with underlying pathogenesis of common respiratory and cardiovascular diseases. They are required to describe the principles of deferential diagnosis and clinical investigations including laboratory and radiological test in the management of common respiratory and cardiovascular diseases. Discuss the mechanism of action of drugs used in the management of common, describe the principles and practice of prevention of communicable pulmonary diseases, and environmental pulmonary diseases and take a history and perform clinical examinations in patients with pulmonary and cardiovascular disease.
Credits 4
Prerequisite Courses
FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
Co-Requisite Courses
HEM 352
MSI 361

Communications Skills

PRO 115 : Communications Skills
The overall objective of this course is to understand the basics of communication skills and its major role in the daily life of health professionals. Show empathy & demonstrate breaking bad news effectively and demonstrate a willingness to be open about themselves, their skills, ideas and responses to people and situations.
Credits 2
Prerequisites
None

PRO 234 : Introduction to Medical Skills

During this course students will conduct and record medical interview and learn to perform general physical examination.

Credits 2

Prerequisites

None

PRO 244 : Professional Skills IV (Integrated with Clinical Sessions)

By the end of this course, students will be able to obtain a complete Medical Hx related to Nervous System, Otolaryngeal and Ophthalmic disorders, Communicate respectfully and effectively with patients and their family members demonstrate knowledge of appropriate communication skills in the clinical setting, exhibit keenness to acquire knowledge and skills needed for successful clinical encounter and medical interview. Prove effective utilization of self-directed learning time, exhibit compassion and honesty with patients and their family members respect boundaries and Communicate politely with tutors, peers, and members of the medical team.

Credits 2

Prerequisites

None

PRO 355 : Professional Skills III (Integrated with Clinical Sessions)

By the end of this course, students will be able to obtain a complete Medical Hx of disorders related to Cardiovascular, Respiratory, Gastrointestinal and Hematological systems, obtain a detailed comprehensive Hx of the chief complaint and pertaining Hx, explore life style, environmental, and occupational factors pertinent to presentation(s) covered in each session, communicate respectfully and effectively with patients and their family members ,demonstrate knowledge of appropriate communication skills in the clinical setting, exhibit keenness to acquire knowledge and skills needed for successful clinical encounter and medical interview, prove effective utilization of self-directed learning time, exhibit compassion and honesty with patients and their family members, respect boundaries, collaborate with peers, tutors, medical team members, and hospital staff, utilize time and resources provided towards effective completion of session objectives and tasks and understand the role of physicians as health advocates.

Credits 2

Prerequisites

None

PRO 365 : Professional Skills V (Integrated with Clinical Sessions)

By the end of this course the students should be able to, take clinical history of a patient with Musculoskeletal, skin, renal, Endocrine and Gynecological & obstetrics problems and/or complaints, perform general physical examination, perform focused physical examination of the Musculoskeletal, skin, abdominal, and reproductive systems.

Credits 2

Prerequisites

None

Complementary and Alternative Medicine

CAM 488 : Complementary and Alternative Medicine
The course gives an overview of the most commonly used complementary and alternative medicine CAM modalities centered on the five domains of Complementary, Integrative and Alternative Medicine. These include the Alternative medical systems (traditional Chinese medicine, Unani medicine, Ayurveda, homeopathy, naturopathy); Mind-body Medicine (techniques designed to facilitate the mind's capacity to affect the physical body's functions in health and illness, such as meditation, yoga, and MBSR); Manual therapies (osteopathy, massage, and chiropractic); Energy-based therapies (biofeedback, acupuncture); and Biologically-based therapies (herbal medicine and dietary supplements). Principles of Prophetic medicine will be introduced where the major elements of traditional Islamic healing methods will be covered. The course will present theory and principles of CAM practices and train students to critically evaluate evidence of their efficacy and safety.
Credits 2

Computer Science

CSC 101 : Introduction to Computer Science
This course provides an introduction to a disciplined approach to computer programming and problem solving, utilizing a block-structured high-level language, with an emphasis on procedural abstraction and good programming style. Students will apply programming skills in solving a variety of problems. Algorithmic concepts are also introduced. This course also provides a survey study of data structures and data abstraction, and an introduction to complexity considerations and program verification.
Credits 3
Prerequisites
None

PBUS 101 : Introduction to Business
This course provides students with the basic theoretical and practical skills needed to undertake business studies at the undergraduate level. It achieves this feat by introducing students to the contemporary business world, entrepreneurship, the business of managing, strategy, people in organizations, the principles of marketing, and accounting & finance. The course consists of textbook readings, lectures, interactive in-class discussions, and analyses of contemporary events relevant to business. Special attention is given to both the Saudi and U.S. business contexts.
Credits 4

PCS 112 : Basic Computer Skills
This course is an introduction to computer terminology in terms of hardware, and software related to the business environment. Students will be introduced to the practical computer skills necessary for data and information analysis and an efficient representation of results. Techniques including word processing spreadsheets, databases, desktop publishing, presentation graphics, and business-oriented utilization of the internet will be covered.
Credits 3

PIE 112 : Introduction to Engineering Innovation
Engineering Innovation is an exciting UPP course level for motivated new students with an aptitude in math and science and an interest in engineering. In this course students will learn how to think like an engineer and develop the necessary problem-solving skills. The course will provide students with a hands on, experiential learning experience, which will provide: working knowledge of contemporary engineering practice, the problem solving process, and the tools and technologies engineers employ, as well as an understanding of the design process including competition, cost, quality, scheduling and manufacturability considerations. Numerous topics in various engineering disciplines will be covered with inspiring presentations, guest-speakers, team projects, and hands-on activities.
Credits 3

Drug Information and Evidence

DIT 472 : Drug information and evidence-based practice

This course will provide the students with the necessary knowledge to build their skills required to search, retrieve, interpret, and disseminate drug information in the most efficient and effective manner with special focus on patient and medication safety using the suitable databases. This course will teach the student the critical appraisal of drug literature, randomized clinical trials, systematic reviews with metauc0u8208 analyses, clinical service literature, and quality assessment and improvement techniques. The students will learn how to balance individual patient care with populationu 8208 based assessment of pharmacotherapy outcomes. The student will learn that evidenceu 8208 based practice requires screening, evaluating and implementing evidence from the rapidly evolving medical literature. They will learn also how data are summarized into evidence reports and clinical guidelines and learn about the limitations of this process. In this course students will use published evidence/ practice to identify targets for quality improvement, to formulate the best strategies for identifying highu 8208 risk patients, and to evaluate patient outcomes.

Credits 3

Economics

ECO 101 : Microeconomics

This course introduces students to the key principles of microeconomics and its application to decisions made by households and firms. Uses the forces of supply and demand, the course studies the interaction between individuals, business firms, and government. It analyses the impact of perfect and imperfect competition on the welfare of key players in society.

Credits 3

Core Requirement

BCC

ECO 102 : Macroeconomics

This course introduces students to macroeconomics concepts and tools of analysis used to understand how an economy as a whole function. It discusses the determinants of standard macroeconomic concepts including inflation, unemployment, and economic growth; money supply and interest rates; and evaluates the impact of fiscal and monetary policies on the economy. The course also analyses the impact of KSA'92s current policies on the key indicators of the Saudi economy.

Credits 3

Core Requirement

BCC

Prerequisite Courses

ECO 101

ECO 310 : International Economics

This course will introduce both the micro-economic and macroeconomic issues relevant to the economic relations among countries. The first half of the course explores the theoretical microeconomic foundations of international trade covering the why, what, and how of trade versus protectionism. The second half of the course deals with issues in international finance and macroeconomics and covers such issues as currencies and exchange rate (fixed vs. flexible) policies, balance of payments.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201

ECO 320 : Islamic Economics & Finance

This course is designed to introduce foundations and instruments of Islamic economics and finance within two parts. In the first part, the course will define Islamic economics and review its fundamental economic principles and discuss the historical development of Islamic economic thought. In the second part, the course will provide a relationship between Islamic economics and finance by covering the foundations of Islamic finance and its historical development.

Credits 3

Core Requirement

BEC

Prerequisite Courses

FIN 201

ECO 482 : Pharmacoeconomics and health outcomes

This course will provide the pharmacy student with an overview and applications to assess the value and the standards of pharmacoeconomics, health outcomes, health economics, and epidemiology. It will teach the student basic concepts, assumptions, terminology, and methods associated with pharmacoeconomics and health-related outcomes research. An overview of pharmacoeconomic analysis using cost-effectiveness, cost-minimization, cost-utility, cost-benefit, and cost-identification studies will be addressed. This course will also teach the student to the basic features, strengths, and weaknesses of pharmacoepidemiological study designs. Various methods of collecting pharmacoepidemiological information, drug utilization studies, cross-sectional studies, observational studies, and clinical trials will be covered. Principles taught in this course will help the student to build their knowledge of how to assess and conduct research in the future to demonstrate the effectiveness, safety, and economic value of a new treatment.

Credits 3

Endocrine Block

END 231 : Endocrine Block

This is a multidisciplinary course (block) integrating topics in basic and applied clinical anatomy, histology, embryology and physiology of endocrine system.

Credits 2

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123

Corequisites

REP 232, POD 233

END 362 : Endocrine Block

This course examines the functions and regulation of pituitary, thyroid, parathyroid, pancreatic and adrenal hormones. It describes the epidemiology, risk factors, pathogenesis and diagnostic workup of disorders of Pituitary, thyroid, parathyroid, pancreatic and adrenal gland. It describes the epidemiology, risk factors, pathological classifications and morphology of tumors of pituitary, thyroid, parathyroid, pancreatic and adrenal gland.

Credits 2

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242

Corequisites

REP 363, URN 364, GIT 353

Environmental Science & Sustainability

ENV 205 : Environmental Science & Sustainability

This course is general in nature that provides a general introduction to environmental issues and sustainable development. It surveys the impacts that humans have on the environment such as pollution, climate changes, loss of agricultural land, etc. It reviews the principles of sustainability and their applications to energy, climate change, urban planning, transportation, water use, etc. The course will also address changes and steps that can be made to promote sustainability. Current environmental issues will be discussed to motivate students to be active members of society for enhancing environmental awareness and in taking action to address environmental issues and sustainability in KSA.

Credits 3

Prerequisite Courses

CHM 112

ENV 305 : Environmental Health

The course examines the physical, biological and chemical factors affecting human health. The course also explores approaches to control the major environmental health problems in industrialized and developing countries. A range of topics are covered including how the body reacts to environmental pollutants; physical, chemical, and biological agents of environmental contamination; vectors for dissemination (air, water, soil); solid and hazardous waste; susceptible populations; the scientific basis for policy decisions; and emerging global environmental health problems.

Credits 3

Prerequisite Courses

BIO 223

ENV 310 : Environmental Toxicology

Environmental toxicology is an elective course focusing on the study of toxic effects of environmental chemicals on living organisms (including humans). In this course, the basic concepts, methods, and approaches in environmental toxicology will be introduced. Natural and synthetic chemicals commonly encountered in the air, water, and soil will be discussed regarding their occurrence, fate and transport, and toxicological effects on ecological species and humans. Case studies will be used to illustrate the complexity of environmental toxicology issues. New trends in chemical toxicity testing will be discussed. Contaminants of emerging concerns such as pharmaceutical and personal care products and engineered nanomaterials will also be introduced.

Credits 3

Prerequisite Courses

ENV 205

ENV 315 : Earth Systems

This course focuses on the profound transformation of Earth'92s environment that is now apparent, a transformation owing not to the great forces of nature or to extraterrestrial sources but to the numbers and activities of people '96 the phenomenon of global change. This course sets out what is known about global change and the nature of the Earth System.

Credits 3

Prerequisite Courses

ENV 205

ENV 330 : Energy & Sustainability

This course will help students to understand the critical relationships of the environment, energy, and sustainability. Leading experts provide comprehensive coverage of each topic, bringing together diverse subject matter by integrating theory with engaging insights. This course fills an information gap in energy, environment, and sustainability, presenting broad overviews of energy challenges and solutions along with the materials advances needed to enable rapid progress. The purpose of this course is to serve as a college-level that brings together the themes of environment and energy in the context of defining the issues, and subsequently focuses on the materials science and research challenges that need to be met.

Credits 3

Prerequisite Courses

ENV 205

ENV 410 : Environmental Monitoring

This course will cover introduction to environmental science, pollutants including chemical and biological and industrial hygiene. This will includes evaluating the various sampling techniques, pollutants and analytical techniques which can contaminate water, soil/surfaces and outdoor/indoor air. Furthermore, it will emphasize on environmental pollutants detection, hazards controlling, risk reduction, selection of the appropriate instrumentation techniques, calibration, quality control and reporting.

Credits 3

Prerequisite Courses

CHM 310

ENV 420 : Waste Management

This course covers the principles of waste management. It provides an overview of municipal waste, industrial waste, and hazardous waste management including design and economic analysis. Reviews physical, chemical, biological treatment of hazardous waste, and the innovative management practices associated with different waste. Students will be exposed to real world settings through worked examples, case studies, and field trips to water and solid waste management facilities. Case studies for specific industries like petrochemicals, fertilizers, desalination and petroleum refining, etc.

Credits 3

Prerequisite Courses

ENV 330

ENV 425 : Environmental Policy & Economics
This course explores the proper role of government in the regulation of the environment. It will help students develop the tools to estimate the costs and benefits of environmental regulations. These tools will be used to evaluate a series of current policy questions, including: Should air and water pollution regulations be tightened or loosened? What are the costs of climate change in the U.S. and abroad? Is there a "Race to the Bottom" in environmental regulation? What is "sustainable development"? How do environmental problems differ in developing countries? Are we running out of oil and other natural resources? Should we be more energy efficient? To gain real world experience, the course is scheduled to include a visit to the ministries and government institutions in KSA. We will also do an in-class simulation of discussions for and against specific case scenarios.
Credits 3
Prerequisite Courses
ENV 330

Evidence Based Medicine

EBM 354 : Evidence based Medicine
In this course students learn the basic principles of epidemiologic studies and Evidence Based Medicine (EBM),identify and interpret some of the risk factors affecting patients and the community, interpret epidemiological findings in terms of the population and patients ,Identify issues with regards to medical research and research ethics , learn how to prepare a formal research proposal and prepare it for submission, Appreciate the concept of a healthcare team and be able to collaborate effectively with other professionals and communicate effectively in an essay and in oral presentations.
Credits 2
Prerequisites
None

Forensic Medicine & Toxicology

FMT 367 : Forensic Medicine & Toxicology
In this course, students will learn how to describe the theoretical principles and the basic disciplines of forensic medicine and science, define and explain the importance and applications of crime scene investigation, forensic evidence, death investigation, type of wounds, biological evidence, firearms and weapons and tool marks, death investigation, questioned documents, fire and explosive examination field, different type of wounds and the forensic viewpoint of criminal scene. The students are required to describe the different type of poisons, describe the fundamental concepts of toxicology to commonly encountered abused and toxic substances, illicit drugs and controlled substances act. They are required to describe the postmortem toxic effects of drugs chemical toxins and carcinogens and knowledge of laboratory results interpretations. Correlate and interpret the laboratory result with the clinical information or forensic investigation.
Credits 2
Prerequisites
None

Forensic Science

SCI 310 : Forensic Science
This single-semester elective course is designed to provide students with a foundation in the fundamental principles and concepts of forensic sciences. This course introduces the theory, concepts and practices used in the analysis of physical evidence performed in forensic laboratories, the fundamentals of crime scene investigation, forensic DNA analysis, illicit drugs, and forensic toxicology, hair and textile analysis, firearms and ballistics, and counterfeiting and forgery. In addition, selected case studies in different forensic disciplines will be discussed.
Credits 3
Prerequisites
ENG 112 (or ENG 113)

SCI 321 : Immunology

SCI 321 aims to provide students with an understanding of immunology and the immunological basis of some common and well-known diseases. The course will balance basic knowledge of the underlying complexity of the immune system, such as T and B cell receptor genes, the MHC and antigen presentation, with the application of immunological aspects to infectious diseases, cancer, inflammation and autoimmunity.

Credits 3

Prerequisite Courses

BIO 223
BIO 224

SCI 322 : Cancer Biology

This course will introduce the core aspects of cancer biology. Emphasis will be placed on molecular mechanisms of cancer pathophysiology - such as signal transduction, DNA damage and repair and regulation of cell division, death and senescence as well as on system biology, microevolution of tumors, interaction between tumor and organism. Existing and novel strategies of cancer prevention, diagnosis and treatment will be discussed.

Credits 3

Prerequisite Courses

PBIO 112
BIO 224

SCI 323 : Signal Transduction

The concept of "signal transduction pathway" is one of the major advancement in our understanding of how living cell '96 a unit of life '96 is functioning: how it adapt to changing environment and communicates with neighbours in multicellular organisms. Perspective of "signal transduction" is essential to understand complex biological processes and diseases ranging from memory formation to diabetes and cancer. The course makes sense of the dizzying array of pathways used by the cell to communicate.

Credits 3

Prerequisite Courses

PBIO 112
BIO 224

SCI 325 : Bioinformatics and Computational Genomics

The course is a combination of lectures and instructor-guided practical sessions. SCI 325 will cover: 1) the theoretical basis of various comparative analyses of DNA and protein sequences, 2) how bioinformatics, genetics and genomics help to understand the population and evolutionary processes, 3) how computational genomic analyses generate testable hypotheses, and 4) a role of bioinformatics in conservation biology, current human genetics and medicine.

Prerequisite Courses

BIO 112
STA 211

SCI 326 : Virology

The course focuses on the principles of virus structure, replication and genetics. It will help the students appreciate the relevance of virology in the modern world, including the fields of vaccines, anti-viral drugs and cancer. Other acellular biological particles like prions are also discussed. The course reflects many recent developments in virology and offers deeper insights into the subject. Newly-discovered and emerging viruses are discussed.

Credits 3

Prerequisite Courses

BIO 223

Foundation Block

FON 111 : Foundation Block

This is a multidisciplinary course (block) foundation course integrating topics in basic and applied clinical anatomy, histology, embryology, and physiology.

Credits 2

Prerequisites

None

Corequisites

MSK 112, GIT 113

French

FRE 101 : French I
It introduces the fundamental elements of the French language within a cultural context. Emphasis is placed on the development of the basic language skills, vis. listening, speaking, reading, and writing, in addition to grammar and vocabulary skills.
Credits 3
Prerequisites
None

FRE 112 : French II
It builds upon the fundamental elements of the French language within a cultural context. Continued emphasis is placed on the development of basic language skills, vis. listening, speaking, reading and writing in addition to grammar and vocabulary skills.
Credits 3
Prerequisite Courses
FRE 101

Gastrointestinal Block

GIT 113 : Gastrointestinal Block
The overall objective of this course is to stress structural/functional correlates of the different organs within the GIT and how they contribute to the digestion and absorption of ingested nutrients.
Credits 3
Prerequisites
None
Co-Requisite Courses
FON 111
MSK 112

GIT 353 : Gastrointestinal Block
This course examines the etiology, epidemiology, predisposing factors, pathophysiology, and classification, of common gastrointestinal, liver, and pancreatico-biliary diseases. Relate clinical signs and symptoms, result of laboratory diagnostic tests, and radiological changes with underlying pathogenesis of common gastrointestinal, hepatic and pancreaticobiliary diseases. Describe the principles of deferential diagnosis and clinical investigations including laboratory and radiological test in the management of common gastrointestinal, hepatic and pancreaticobiliary diseases. Discuss the mechanism of action of drugs used in the management of common gastrointestinal, hepatic and pancreaticobiliary diseases describe the principles and practice of prevention of communicable and environmental gastrointestinal, hepatic and pancreaticobiliary diseases
Credits 3
Prerequisite Courses
FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
Corequisites
REN 364, END 362, REP 363

Genetics

GEN 124 : Genetics
The Genetics course is designed to provide medical students with specific knowledge, skills, and behaviors that are essential competencies to the field of medical genetics.
Credits 2
Prerequisites
None

German

GER 101 : German I

It introduces the fundamental elements of the German language within a cultural context. Emphasis is placed on the development of the basic language skills, vis. listening, speaking, reading, and writing, in addition to grammar and vocabulary skills.

Credits 3

Prerequisites

None

GER 103 : Medical German I

The course introduces the fundamental elements of the German language within a medical context. Emphasis is placed on the development of the basic language skills such as listening, speaking, reading, and writing, in addition to grammar and vocabulary skills that aim to prepare for basic communication in a working environment at German clinics and hospitals.

Credits 3

GER 112 : German II

It builds upon the fundamental elements of the German language within a cultural context. Continued emphasis is placed on the development of basic language skills, vis. listening, speaking, reading and writing in addition to grammar and vocabulary skills.

Credits 3

Prerequisite Courses

GER 101

GER 113 : Medical German II

The course builds upon the fundamental elements of the German language within a medical context. Continued emphasis is placed on the development of basic language skills such as listening, speaking, reading, and writing, in addition to grammar and vocabulary skills that aim to prepare for basic communication in a working environment at German clinics and hospitals.

Credits 3

Prerequisite Courses

GER 101
GER 103

GER 213 : Medical German III

The course seeks to build medical student's German language communication skills with patients and hospital / clinical staff. Furthermore, the course mediates strategies to cope with advanced medical terminology and hospital paperwork to motivate students to carry on their German language studies in the medical field. Additionally, the course takes the standardized examinations for non-native medical practitioners carried out by the German medical state boards into consideration. Accordingly, the course will prepare students to accomplish tasks re-quired in the three-part language examination: doctor-patient consultation, 2) document findings in the patient records and 3) justifying findings to other medical staff and colleagues.

Credits 3

Prerequisite Courses

GER 103
GER 113

Gynecology

GYN 482 : Obstetrics & Gynecology

The specific objectives of this rotation are to cover different aspects in Obstetrics & Gynecology which include, master history taking from both obstetrics and gynecology patients, perform and appropriately record the essentials of a breast, abdominal and pelvic examination (including speculum and bi-manual pelvic exam), and obtain a Pap smear and cervical/ vaginal cultures uc0u61623 Physiology of pregnancy, normal antenatal and postnatal care, care of medical diseases associated with pregnancy, common obstetric emergencies, common obstetric related problems: multiple gestation, preeclampsia/eclampsia, Rh isoimmunization, preterm delivery, etc. evaluation and monitoring of normal labor, distinguish between the various techniques of antepartum fetal assessment and their indications based on maternal/fetal risk factors, common causes of infertility and their management, describe the common gynecologic neoplasms, including the presentation, diagnosis and treatment; understand the general principles of staging and principles of family planning and different contraceptive techniques.

Credits 9

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364

Co-Requisite Courses

MED 471
PED 472
SUR 481

Head & Neck & Special Senses Block

HNS 242 : Head & Neck and Special Senses Block

This block is fully integrated covering normal structure and function as well as integrating disease processes and pharmacotherapy of the diseases related to Otolaryngology and Ophthalmology.

Credits 3

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123

Co-Requisite Courses

NEU 241

Health Economics and Health Care Management

HEN 367 : Health economics and Hospital management

In this course students will learn about health economics and applies the tools of economics to issues of the organization, delivery, and financing of health care. The objectives of this course are to: (1) develop an understanding of the relevance of economic concepts to the health care sector, (2) describe the system of health care financing and delivery arrangements in the health care sector, and (3) impart an understanding of the role of economic factors in the development of public policy concerning health and health care.

Credits 2

Prerequisites

None

HEN 483 : Health Economics and Health Care Management

Health economics applies the tools of economics to issues of the organization, delivery, and financing of health care. The objectives of this course are to: (1) develop an understanding of the relevance of economic concepts to the health care sector, (2) describe the system of health care financing and delivery arrangements in the health care sector, and (3) impart an understanding of the role of economic factors in the development of public policy concerning health and health care.

Credits 2

Prerequisites

Semesters 5 and 6

Hematology-Oncology Block

HEM 352 : Hematology-Oncology Block

In this course students will learn how to review hematopoiesis and red cell structure, function and metabolism, describe the pathophysiology, clinical features, diagnostic workup and management of red and white cell disorders, bleeding disorders and thrombophilias, diseases of spleen and thymus, interpret the clinical and laboratory information to understand and classify different types of anemia ,describe the mechanisms of hemostasis and thrombosis and correlate it with the interpretation of coagulation tests and the role of coagulants and anticoagulants in the treatment of various diseases, discuss the basis of blood grouping and blood transfusion and perform blood grouping and identify the different types of stem cell transplant currently available and the indications for SCT.

Credits 2

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242

Co-Requisite Courses

CVP 351
MSI 361

Hematopoietic & Lymphatic System Block

HLS 122 : Hematopoietic & Lymphatic System
This is a multidisciplinary block integrating topics in basic and applied clinical anatomy, histology, embryology, and physiology related to hemopoietic system.
Credits 2
Prerequisites
None
Corequisites
CVP 121, REN 123

History

HIS 101 : Islamic Civilization and Mediaeval Europe
The course introduces the foundations of Islamic civilization, its development and prosperity, places of contact between Europeans and Muslims, and means of influence, such as direct contact and the translation of Islamic books in science, medicine, philosophy, literature and the arts.
Credits 3
Prerequisites
None

Immunology

IMM 244 : Immunology
This course is designed to provide students with a basic understanding of immunology. The study of the principles of immunology will provide students with an understanding of how the immune system functions in protecting the human body against non-self, including infectious threats and transformed cells. These concepts will also form the basis of understanding altered immune responses including autoimmune disorders, allergic reactions and immunodeficiencies. Using a diversity of teaching approaches including lectures and case discussions, it is expected that this course will provide the basic scientific principles necessary for developing a solid foundation needed for the clinical immunology course to be offered in the senior year of this program.
Credits 2

IMM 355 : Clinical Immunology
This course will build on the basic concepts the students learnt in Immunology course. In the first weeks of the course, the applications of these concepts in the context of normal host immune responses such as inflammatory response and mucosal immunity, immunodiagnostic approaches, immunotherapy and immunization will be addressed. In the second half of the course, we will use examples of various immunological disorders as the basis for correlating basic concepts, clinical presentation, immunodiagnostic and immunotherapy approaches. Large group tutorial and laboratory demonstration sessions will be used to reinforce various concepts. In addition, this course will expose the students to emerging clinical immunotherapeutic applications.
Credits 1
Prerequisite Courses
IMM 244
Corequisites
None

Integrated Neuroscience

INS 592 : Integrated Neuroscience

By the end of this clerkship students will be able to perform a detailed neurological examination, psychiatric evaluation, make the differential diagnosis and plan initial treatment for patients with neurological and psychiatric disorders by applying clinical reasoning and evidence based medicine, evaluate and analyze prognosis and clinical outcomes.

Credits 9

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364
MED 471
PED 472
SUR 481
GYN 482

Corequisites

IMD 591, SSP 5X1, AMB 5X2

Integrated Pharmacotherapy

IPH 5X1 : Integrated pharmacotherapy VII: Haematology/ Oncology/ palliative care and GIT

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. It will start by delivering lectures in pathophysiology about a certain disease that belongs to the system covered in the course, followed by pharmacology lectures that cover pharmacological actions of drugs designed to treat such condition and the physiological responses of the body to these drugs. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. This course in particular will introduce the student to common haematological, and neoplastic disorders, and conclude the last pharmacotherapy course with the concept of palliative care and common GIT disorders. Application of the knowledge acquired in this course will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

BPH 365

Corequisites

IPH 5X2

IPH 5X2 : Integrated pharmacotherapy VII: Haematology/ Oncology/ palliative care and GIT '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from haematology, oncology pharmacotherapy and palliative care course with regard to pathophysiology, pharmacology, and current management guidelines of common haematological and neoplastic disorders, along with principles of palliative care and GIT disorders. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion This course should parallel integrated pharmacotherapy: haematology, oncology, palliative care, and GIT course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

BPH 366

Co-Requisite Courses

IPH 5X1

IPH 473 : Integrated pharmacotherapy I: - CVS and renal I

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. It will start by delivering lectures in pathophysiology about a certain disease that belongs to the system covered in the course, followed by pharmacology lectures that cover pharmacological actions of drugs designed to treat such condition and the physiological responses of the body to these drugs. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. This course in particular will introduce the student to basic cardiovascular and renal disease scenarios. Application of the knowledge acquired will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

BPH 365

Corequisites

IPH 474

IPH 474 : Integrated pharmacotherapy I: -CVS and renal I '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from cardiovascular and renal pharmacotherapy course I with regard to pathophysiology, pharmacology, and current management guidelines of basic cardiovascular diseases, a renal conditions. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion This course should parallel integrated pharmacotherapy: cardiovascular and renal I course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

BPH 366

Co-Requisite Courses

IPH 473

IPH 475 : Integrated pharmacotherapy II: - MSK and - RES

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. It will start by delivering lectures in pathophysiology about a certain disease that belongs to the system covered in the course, followed by pharmacology lectures that cover pharmacological actions of drugs designed to treat such condition and the physiological responses of the body to these drugs. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. This course in particular will teach the student pathophysiology of inflammation and drugs working as anti-inflammatory agents in preparation to discuss common musculoskeletal related conditions such as muscle injury, bursitis, tendinitis, gouty arthritis, along with more difficult conditions to manage such as rheumatoid arthritis. The second half of this course will introduce the student to the pathophysiology and pharmacological management of allergic conditions, and common respiratory disorders such as; bronchial asthma and chronic obstructive airway disease. Application of the knowledge acquired in this course will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

BPH 365

Corequisites

IPH 476

IPH 476 : Integrated pharmacotherapy II: -MSK and - RES '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from musculoskeletal and respiratory pharmacotherapy course with regard to pathophysiology, pharmacology, and current management guidelines of common inflammatory/ rheumatological disorders, and common allergic and respiratory diseases. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion This course should parallel to integrated pharmacotherapy: musculoskeletal and respiratory course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

BPH 366

Co-Requisite Courses

IPH 475

IPH 483 : Integrated pharmacotherapy IV: Endocrine and women'92s health

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. It will start by delivering lectures in pathophysiology about a certain disease that belongs to the system covered in the course, followed by pharmacology lectures that cover pharmacological actions of drugs designed to treat such condition and the physiological responses of the body to these drugs. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. This course in particular will teach the student pathophysiology of common endocrine disorders and topics related to female and male reproduction. Common dermatological conditions will be discussed briefly at the end of the course. Application of the knowledge acquired in this course will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

BPH 365

Corequisites

IPH 484

IPH 484 : Integrated pharmacotherapy IV: Endocrine and women'92s health '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from endocrine and women'92s health pharmacotherapy course with regard to pathophysiology, pharmacology, and current management guidelines of common endocrine conditions and topics related to female and male reproduction. Common dermatological scenarios will be also included in the cases discussed briefly at the end of the course. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion This course should parallel to integrated pharmacotherapy: endocrine and women'92s health course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

BPH 366

Co-Requisite Courses

IPH 483

IPH 485 : Integrated pharmacotherapy III: - CNS -

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. It will start by delivering lectures in pathophysiology about a certain disease that belongs to the system covered in the course, followed by pharmacology lectures that cover pharmacological actions of drugs designed to treat such condition and the physiological responses of the body to these drugs. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. This course in particular will teach the student pathophysiology of central nervous system disorders. Application of the knowledge acquired in this course will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

BPH 365

Corequisites

IPH 486

IPH 486 : Integrated pharmacotherapy III: - CNS - '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from central nervous system CNS pharmacotherapy course with regard to pathophysiology, pharmacology, and current management guidelines of common CNS disorders. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion. This course should parallel to integrated pharmacotherapy: CNS course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

BPH 366

Co-Requisite Courses

IPH 485

IPH 591 : Integrated pharmacotherapy V:- CVS and renal II

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. It will start by delivering lectures in pathophysiology about a certain disease that belongs to the system covered in the course, followed by pharmacology lectures that cover pharmacological actions of drugs designed to treat such condition and the physiological responses of the body to these drugs. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. This course in particular will build further the knowledge that the student acquired from basic cardiovascular and renal disease I course, by progressing to a more advanced scenarios with emergency presentation. Application of the knowledge acquired in this course will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

IPH 473

Corequisites

IPH 592

IPH 592 : Integrated pharmacotherapy V: CVS and renal II '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from cardiovascular and renal pharmacotherapy II course with regard to pathophysiology, pharmacology, and current management guidelines of advanced cardiovascular and renal conditions. Emergency scenarios and cases with complications will be covered in this course. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion This course should parallel integrated pharmacotherapy: cardiovascular and renal II course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

IPH 474

Co-Requisite Courses

IPH 591

IPH 593 : Integrated pharmacotherapy VI: Infectious diseases

Integrated pharmacotherapy courses aims to build the knowledge of the students about how to manage patients with different pathological conditions. This course in particular will focus on application of the knowledge acquired from microbiology, advanced microbiology, pharmacotherapy of antimicrobial agents, to progress with understanding the clinical microbiology, and pathophysiology of common infectious diseases. Current practice guidelines for the management for such diseases will follow along with a small exercise that introduces a one simple case to discuss the therapeutics options suitable. Application of the knowledge acquired in this course will be applied in the '93case based seminar'94 course that run in parallel to it in 7 weeks period.

Credits 3

Prerequisite Courses

BPH 365

BPH 367

Corequisites

IPH 594

IPH 594 : Integrated pharmacotherapy VI: Infectious diseases '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from microbiology, advanced microbiology, pharmacotherapy of antimicrobial agents, and infectious disease pharmacotherapy courses with regard to microbiology, pathophysiology, pharmacology, and current management guidelines of common infectious diseases. Case based seminars applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion This course should parallel to integrated pharmacotherapy: infectious disease course that will be delivered over 7 week'92s period.

Credits 1

Prerequisite Courses

BPH 366
BPH 367

Co-Requisite Courses

IPH 593

International Law

INL 431 : International Humanitarian Law of Armed Conflict

The course addresses international humanitarian law as part of general international law. It introduces the student to the history and codification of IHL, from the 16th century until today. The course is explained by highlighting the difference between jus ad bellum (the legitimacy of armed operations) and the jus in bello (law applicable during armed conflict). The four Geneva conventions of 1949 and the two additional protocols of 1977 are looked upon into detail as well. Attention is paid to the question of law enforcement, in particular the numerous resolutions of the UN Security Council. The course illustrates IHL in some practical armed conflicts such as the NATO air campaign in Kosovo, the Libyan civil war, the Syrian civil war and looks at some new challenges of IHL regarding armed drones, cyber warfare and '91foreign terrorist fighters'92.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INL 432 : GCC Charter and Statutes

This course focuses on the Cooperation Council for the Arab States of the Gulf (GCC). It explains history of the GCC, member states, the GCC charter, organizational structure, objectives and logo of the organization. Economic Cooperation Agreement is studied. Achievements of economic cooperation in the various fields is illustrated. This includes cooperation in agriculture, energy, planning statistics and development, telecommunication, transportation and communication, fight against harmful and injurious practices in international trade, VAT and other taxes, finance, the customs union, common market and economic nationality, monetary union and the single currency. Likewise, cooperation in intellectual property, human and environmental affairs, security, media and legal and judicial proceedings is reflected. Cooperation in environmental protection is focused on. The course in this respect looks into the GCC Environment Act 1997, The conservation of natural life and environment act 2010 and other environmental protection instruments in comparison with counterpart Saudi Arabia environmental law.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INL 433 : International Commercial Arbitration

This course will begin by reviewing the process of creating an international arbitration agreement and potential defenses to the establishment of the same. Then the course will focus on the actual international arbitration proceedings. It will highlight the specific procedural rules that govern such proceedings and which international arbitrators and practitioners must abide by. Given the abundance of such rules, the course will focus mainly on the ICC Arbitration Rules and any arbitral awards in the required text derived from the same.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INL 434 : International Negotiation & Dispute Settlement

In today'92s global marketplace, legal negotiations conducted by individuals in the context of international business, government matters, and dispute resolution are increasingly important. Negotiation is the process by which two or more parties overcome competing interests, needs, and desires to resolve a particular problem. In the field of law, every lawyer negotiates whether it relates to commercial agreements, business relationships, real estate transactions, employment concerns, intellectual property, finance, dispute resolution (litigation/ arbitration), governmental affairs, or other matters. One does not have to be a lawyer to negotiate though. Corporate workers, contract manager, governmental staff, and others negotiate on a daily basis. However, many people negotiate without sufficiently understanding the skills, strategies, approaches, and choices necessary to succeed. This course is designed to enhance your understanding of negotiations in an international context. More specifically, it is intended to teach you about the theory and practice of international business negotiations, international contract drafting, and dispute settlement.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INL 435 : European Union Law

The course offers an introduction into the European Union law. It basically provides insights into the way the EU functions and operates; the decision-making process of the EU; the sources of EU-law; the relationship between EU-law and the law systems of EU Member States; the internal market legislation of the EU as well as into the European Convention on Human Rights and the '93Treaty on European Union'94. In a second part, the course makes decision-making in the EU evident by focusing on EU anti-corruption legislation. By doing so, it provides students with insights about the problem of corruption in Europe in general and how this affects the efforts of the Community to combat corruption. Furthermore, the course intends to embed law related questions into the wider political, social and economic EU-context.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INL 436 : Use of Force in International Law

This course will provide students with exposure to the international laws and policies that focuses on counterterrorism efforts and will survey the wide range of legal issues implicated by such efforts within Saudi Arabia and abroad. Issues to be addressed will also include international and domestic law applicable to counterterrorism activities, the authorities that can use force, offensive operations overseas, surveillance of terrorists, capture, detention, and interrogation of terrorism suspects, prosecutions in military commissions and domestic courts, immigration matters, and other legal authorities for addressing terrorism issues. Moreover, this course will help answer the critical question of how to design and execute peacekeeping operations that assist new leaders to provide effective governance and new security forces to control borders, police cities and protect citizens.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

International Relations

INR 420 : Introduction to Global Politics and International Relations

This course is an introduction to International Relations with a focus on the '91global'92 dimension of politics. It gives an overview of the history and theory of international relations, paying attention to enduring concepts and contemporary issues of global politics. Students will study concepts and issues such as the role of the state, the nation and sovereignty in the international system; how the international relations theories conceptualize power; what are the conditions for peace and the causes of war. The knowledge of these concepts and the debates they shape in the IR field form the foundation of any understanding of past and current international affairs.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INR 421 : The International Relations of the Contemporary Middle East

This course examines the international relations of the Middle East, focusing on questions of how states developed, what drives conflict, and how the regional order has shifted over time. The course draws on theories of International Relations, and applies them to the politics of the Middle East. The course analyzes the interplay of levels of analyses, with specific attention to the role of ideology, identity, and the interaction between domestic and international politics, in the formulation of foreign policy. The course analyzes the development of the '93nation-state'94 system in the Middle East, and examines the nature of transnational identities and ideologies. We will consider a number of frameworks for understanding the region'92s international politics and Great Power involvement, roughly characterized as Realist, Liberal and Constructivist approaches, but we will always focus on how these approaches can help us understand real-world decisions and outcomes.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INR 422 : War and Diplomacy: The U.S in World Affairs

This course explores contemporary relations between the United States and the world. The primary goal is to give students conceptual and critical tools to understand and analyze how international relations theory, U.S. foreign policy outcomes, and current events fit together, especially in the post 9/11 world. It is designed to develop students'92 capacity both to explain the foreign policy-making process in the United States, and to better understand the underlying patterns, logic, and implications of American foreign policy in the world at large.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INR 423 : European Foreign Policy and Security Issues

This course will examine the issue of European foreign policy through the lens of EU integration. To what extent have EU member states constructed a coherent foreign and security policy? Is the European Union as a whole becoming a credible security actor with the ability not only to defend its common borders, but also to contribute to global security? We will also look on how forward-looking European leaders sought to end the possibility of another war by pooling the production of key military resources. Since then, despite the predominance of European economic, trade, and monetary issues and their global impact, the European Union has always been, explicitly or not, about security integration. There is much debate about whether the EU can even achieve this goal, especially in light of the recent financial crisis, declining defense budgets, division over the Iraq war, disagreement on the recognition of Kosovo, and so on. Nonetheless, some scholars have already labeled Europe a second superpower. Naturally, such developments have a strong bearing on the EU'92s relationship with the rest of the world.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INR 424 : The Asia Pacific in World Affairs

This course will introduce students to the international relations of Asia-Pacific (A-P) region and help them to think critically about the challenges facing actors in this region including the United States. This course will highlight the region'92s history, the latest developments in IR theory, and a healthy respect for the complexity of the region. It will also look into the impact of the region'92s history on contemporary politics, asking how imperialism, World War II, decolonization, the Cold War, and more recently the war on terror have influenced developments in the Asia-Pacific

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INR 425 : Foreign Policy of Russia, Eastern Europe, and the Eurasia

This course of Foreign Policy of Russia, Eastern Europe, and the Eurasia brings together two political regions '96Europe and the former Soviet Union. This merger is a product of the end of the Cold War and the reuniting of Europe. It is also a result of the convergence of different intellectual traditions that developed around the study of Europe, East and West. Students in this course will think critically about the histories, cultures, religions, politics and economies of the region of the former Soviet Union, as well the often-competing ideas and interests that have shaped these histories and cultures for the past thousand years.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

INR 429 : Advanced Topics in International Relations

This course examines theories of conflict and cooperation in contemporary world politics. During the first half of the semester we will examine the core concepts and assumptions of several (but not all) contemporary theories of international relations. Specifically, we will examine basic and advanced theoretical approaches to understanding the changing nature of the state system and state behavior, the instruments of national power, the role of international regimes and institutions, and the emerging role of non-state actors in global politics. During the second half of the semester, we will evaluate these concepts, assumptions and theories by asking how well these approaches help us understand contemporary international policy issues.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

Introductory Pharmacy Practice

IPP 5X5 : Introductory Pharmacy Practice Experience III

In these two introductory pharmacy practice experience courses, the student is required to spend 5 hours/week; comprising 75 hours of training in each course (150 hr of total training) in an institutional environment. These two courses will provide the students with great practice experiences in institutional outpatient pharmacy services and institutional inpatient pharmacy services, respectively. Students will apply basic practice skills and interface with patients and providers including evaluating medication orders, prescriptions, dispensing of medications and other pharmaceutical services.

Credits 2

IPP 489 : Introductory pharmacy practice experience I (IPPE)

In this introductory pharmacy practice experience, the student is required to spend 4 weeks of training (40 hours/week) for a total of 160 hours, to gain experience in clinical pharmacy practice in the community setting. The students will be distributed among community pharmacies via placement in traditional community pharmacies or in an outpatient pharmacy in primary health care centers. This course represent a great opportunity to apply basic practice and communication skills and to interface with patients and healthcare providers. Students will also participate in community service that can be planned with the college as an educational campaign focusing on face-to-face interaction with the community. It will serve as an important introduction of the clinical pharmacy profession to the community.

Credits 3

IPP 596 : Introductory Pharmacy Practice Experience II

In these two introductory pharmacy practice experience courses, the student is required to spend 5 hours/week; comprising 75 hours of training in each course (150 hr of total training) in an institutional environment. These two courses will provide the students with great practice experiences in institutional outpatient pharmacy services and institutional inpatient pharmacy services, respectively. Students will apply basic practice skills and interface with patients and providers including evaluating medication orders, prescriptions, dispensing of medications and other pharmaceutical services.

Credits 2

Islamic Studies

ISL 101 : Islamic Studies I

Introduces Islamic culture and stresses its importance and contribution to humanity. It addresses Sharia Law in terms of sources, underpinnings, and objectives. It also enhances students'92 faith in viability of Sharia Law and its all-inclusiveness. The course counts as the social science component of the university'92s General Education Requirements.

Credits 2

Prerequisites

None

ISL 102 : Elective/ Islamic studies I
This course will introduce Islamic culture and stresses its importance and contribution to humanity. It addresses Sharia Law in terms of sources, underpinnings, and objectives. It also enhances students'92 faith in its viability and all-inclusiveness. The course counts as the social science component of the university General Education requirements.
Credits 2

ISL 102 : Islamic Studies I
Introduces Islamic culture and stresses its importance and contribution to humanity. It presents Sharia Law in terms of sources, underpinnings, and objectives. It also enhances students'92 faith in the viability of Sharia Law and its all-inclusiveness. The course counts as a social science component of the university General Education Requirements.
Credits 3
Prerequisites
None

ISL 112 : Islamic Studies II
Discusses both community and family systems in Islam, their underpinnings and mechanisms for reform. It examines the problems these systems encounter, and shatters misconceptions about them. It also presents the application of Sharia Law in pertinent contexts. The course counts as the social science component of the university'92s General Education Requirements.
Credits 2
Prerequisite Courses
ISL 101

ISL 113 : Islamic Studies II
Islamic Medical Jurisprudence introduces the importance of learning medicine in Islam and presents the Islamic legislative rulings related to various medical issues. It also includes the principles of jurisprudence and their legislative objectives. It presents contemporary medical issues and Islamic legislative stances. The course counts as the social science component of the university'92s General Education Requirements.
Credits 2
Prerequisite Courses
ISL 101

Law

LAW 121 : English Legal Writing
This course is designed to help students succeed in the College of Law and International Relations by focusing on and improving students'92 legal writing skills. Students will improve their English writing by learning proper grammar, punctuation, and word choice. Through various readings and writing exercises, students will learn how to structure arguments, explain the law, and organize information for a variety of legal documents. Students will become more proficient legal writers through both formative and summative assessments. By receiving and providing feedback, students will gain confidence in their written communication skills.
Credits 3
Prerequisites
NONE
Corequisites
NONE

LAW 122 : Arabic Legal Writing
This course is designed to help students succeed in the College of Law and International Relations by focusing on and improving students'92 legal writing skills. Students will improve their Arabic writing by learning proper grammar, punctuation, and word choice. Through various readings and writing exercises, students will learn how to structure arguments, explain the law, and organize information for a variety of legal documents. Students will become more proficient legal writers through both formative and summative assessments. By receiving and providing feedback, students will gain confidence in their written communication skills.
Credits 3
Prerequisites
NONE
Corequisites
NONE

LAW 130 : Introduction to Law

Introduction to Law is designed to give students an overview of the law and the legal system. This course will provide students with an overview of legal concepts, procedures, terminology and current issues in law including constitutional law, administrative law, criminal law, contracts, family law, renters and landlords, real estate, employment law and wills, trusts and probate. The course is also designed to develop the student'92s issue identification skills.

Credits 3

Prerequisites

NONE

Corequisites

NONE

LAW 131 : Introduction to Islamic Law

Introductory to learning the law, to know the scope and main divisions of Islamic Law system, to understand differences if any between Islamic Law and major legal systems and know and comprehend the meaning of law under Islamic and other systems and the place of law and its interaction within other social, normative, and behavioral sciences.

Credits 3

Prerequisites

NONE

Corequisites

NONE

LAW 132 : Islamic Jurisprudence

Explore, define and explain the sources of Islamic law as compared with sources of law in other systems, authoritative hierarchy of sources, juristic rules for specification and classification of sources and juristic and linguistic principles of interpretation of legal texts and sources.

Credits 3

Prerequisite Courses

LAW 131

Corequisites

NONE

LAW 133 : Administrative Law

Define explain and illustrate administrative law, its notions of due process and instances of abuses of authority and the right of persons of standing affected to file to the court for judicial review of administrative action.

Credits 3

Prerequisites

NONE

Co-Requisite Courses

LAW 130

LAW 134 : The Law of Contracts

Define explain and illustrate the concept of contract, contract law, its elements of offer and acceptance, Consideration, voidability, and discharge by performance or breach and instances of frustration, repudiation, revocation, illegality, and other vitiating factors and remedies of compensation, damages, and specific performance.

Credits 3

Prerequisites

NONE

Co-Requisite Courses

LAW 130

LAW 135 : The Real Estate Law

Define explain and illustrate the concept of Land Law, real estates and interests in land, freehold titles, buying and selling registered and unregistered land, modes of acquisition of title to land, freehold and leasehold estates, trust titles, easements, usufructuaries, contractual encumbrances, freehold covenants and Torrens land settlement and registration systems.

Credits 3

Prerequisite Courses

LAW 134

Corequisites

NONE

LAW 136 : Sale of Goods
Explore, define and explain the general principles relating to sale of goods, the extent to which general principles of contract are customized to fit this specific contract of sale, effect of Consumer Protection law on sale of goods, delivery, transfer of title, conditions of merchantability, suitability for the purpose and other statutory requirements, duties of the seller and the buyer , breach, frustration and remedies available respectively to the parties.
Credits 3
Prerequisite Courses
LAW 134
Corequisites
NONE

LAW 137 : Saudi Arabia Legal System
Explain and describe sources and origins of laws applicable in the KSA, legislative process, administration of justice, types and hierarchies of courts and tribunals, legal institutions, advocacy , public prosecution, solicitor general and the ministry of justice.
Credits 3
Prerequisite Courses
LAW 131
Corequisites
NONE

LAW 138 : Criminal Law
Define explain and illustrate codified types of crime inter alia against persons, property, the community, the crimes of strict responsibility, causation, responsibility of the offender and defenses.
Credits 3
Prerequisites
NONE
Co-Requisite Courses
LAW 130

LAW 139 : Constitutional Law
Define explain and illustrate the concept of Constitutional Law, distinct characteristics of the constitution as a fundamental law, the relationship of the executive, judicial and legislative branches of government vis a vis the constitution in different parliamentary democracies, challenging law'92s constitutionality, bill of rights, governance , organs of government and the limits of judicial review and remedies in constitutional litigation.
Credits 3
Prerequisite Courses
LAW 131
Corequisites
NONE

LAW 230 : Intellectual Property
Explore, define, and explain the meaning of intellectual property, the international framework and municipal laws, patentability, patents` use, grants, infringement and revocation, copyright and related issues, designs registered or unregistered, trademarks and other image rights, confidentiality and trade secrets, computer technology and intellectual property and remedies in intellectual property litigation.
Credits 3
Prerequisite Courses
LAW 130
Corequisites
NONE

LAW 232 : Company Law

Explore, define and explain companies as opposed to other business associations, the general principles and statutory requirements relating to formation of a company , different types of companies, capital of the company ,organs of the company and its stakeholders, publicly traded companies, oversight by capital market authority, trade and investment and the central bank as applicable , functioning of a company , board of directors` mandate , ordinary and extra-ordinary general meeting , protection of and investors, restructuring , merger , amalgamation, take over, dissolution and insolvency. The course focusses also on corporate liability, corporate governance, liability of the directors and that of the company and limitation of liability of the shareholders and exceptions thereof.

Credits 3

Prerequisite Courses

LAW 131

LAW 134

Corequisites

NONE

LAW 233 : Islamic Finance

Introduction to institutions of Islamic finance focusing on banks and cooperative insurance, explain products of Islamic financing including Murabahah, Leasing or Ijara, Salam, Istisna`a, Tawarruq, Benevolent Loaning and Sukuk. Examining how different jurisdictions deal with Islamic banking and, the feasibility of Islamic banking and central banking regulation and Islamic banking.

Credits 3

Prerequisite Courses

LAW 131

LAW 132

Corequisites

NONE

LAW 234 : Bills of Exchange

Explore, define and explain bills of exchange including cheques , bills of exchange and promissory notes, how different from each other these species of negotiable instruments are , how different they are from financial and trade documents, form and content of bills of exchange , the concept of negotiability and transfer of bills of exchange, rights and obligations of the drawer and the drawee, criminal and civil liability for dishonored cheques , bills of exchange in international trade and issues of conflicts of laws , parties to a negotiable instrument transaction and judicial enforcement of honoring payment of negotiable instruments.

Credits 3

Prerequisite Courses

LAW 134

LAW 136

Corequisites

NONE

LAW 235 : Capital Market Law

Explain the goals and strategies of financial regulation, theory of financial markets , capital market law and regulation , authorized persons , intermediaries and brokers, market structure, issuer disclosure rules, trading on line , protection of investors, preconditions of listing , qualification periods, the capital market authority , the buying and selling of securities , the security depository center, types of tradeable security, the stock exchange market, brokers` regulation, investment funds , disclosure, manipulation and insider trading, price stabilization mechanism, special purpose entities, listed companies with accumulated losses, corporate governance, prudential rules, resolution of securities disputes, merger and acquisition, securities business regulation, authorized persons, market conduct, investment accounts and listing.

Credits 3

Prerequisite Courses

LAW 134

LAW 136

Corequisites

NONE

LAW 236 : Banking Law

Explain the structure of banks, legal definition and privileges of banks, bank`s role as depository, current accounts, other specific accounts, clearance of cheques and other negotiable instruments, bank as payor, payment cards, bank as financier, bank securities and collaterals, guarantees, bank`s role in international trade, bank customer relationship, duty of confidentiality, money laundering and terrorism financing and prudential supervision.

Credits 3

Prerequisite Courses

LAW 134

LAW 136

Corequisites

NONE

LAW 237 : Insurance Law

Explain the meaning of insurance, the nature of insurance and insurable interest, the contract of insurance, Insurance policy, payment of premiums, warranties and other terms of the policy, misrepresentation, fraud, non-disclosure, the loss, subrogation, indemnity, contribution, insurance companies, specific insurances; general principles relating to compulsory insurances, third party insurance and statutory regulation of insurance business and practices.

Credits 3

Prerequisite Courses

LAW 134

Corequisites

NONE

LAW 238 : Law of Tort

Explain the meaning of Tort, difference between tort and other grounds of liability, general principles relating to Negligence, duty of care, neighbourhood concept. Causation, remoteness of damage, specific types of negligence, liability of public bodies, intentional torts against the person, torts against moveable and immoveable property, defamation and libel, malicious prosecution, stricter tortious liability, employer`s liability, vicarious liability, tortious liability of corporate persons, remedies in tort litigation and the comparative perspective of tortious liability and issues of jurisdiction and applicable law.

Credits 3

Prerequisite Courses

LAW 130

LAW 131

Corequisites

NONE

LAW 239 : Labour Relations Law

Explain selection for employment, hiring, contract of employment, employer and employee rights and obligations, rights on the job, rights in the job, rights after the job, termination of employment, expiry of a fixed term contract, dismissal, redundancy, retirement, disciplinary dismissal, hours of work, leave of absence and types thereof, occupational hazards, equality of treatment, foreign and domestic workers, employer liability insurance, severance benefits, social insurance and pensionary schemes, collective Labour relations, trade unions, collective bargaining, freedom of association, collective labour contracts and effect therefore on individual employment contract.

Credits 3

Prerequisite Courses

LAW 133

LAW 134

Corequisites

NONE

LAW 240 : Commercial & Consumer Law
This course introduces students to statutory and common law concerning business and consumer transactions. An overview of the laws of contracts and torts forms the basis of business and producer/ consumer relationships. Discussion topics include sale of goods and consumer protection legislation; debtor-creditor relations; competition law; intellectual property rights and manufacturers' product liability.

Credits 3
Prerequisite Courses
LAW 134

LAW 291 : Research Methods & Legal Research
The main objective of this course is to acquaint the student of law with the scientific method of social science research. This course is expected to provide the knowledge of the technique of selection, collection, and interpretation of primary and secondary data in socio legal research. Emphasis would be laid on practical training in conducting research in this course. By the end of the course the students are expected to develop a scientific approach to socio legal problems. They should be able to design and execute small scale research problems. The practical skill in conducting research will be evaluated on their performance in field research and workshops/ seminars.
Credits 3
Prerequisite Courses
LAW 121
Corequisites
NONE

LAW 330 : Muslims Family Law
Explain Islamic family law relating to marriage, competence to marry, contract of marriage, formal and essential requirements of validity, wedlock, parenthood, rights and obligations of the husband and wife inter se and vis a vis children, duty of maintenance and private accommodation, marital disputes, arbitration, extra judicial divorce, judicial separation, custody of children, obligation of the maintenance on the husband, grounds for judicial separation, who may file action for judicial separation, the effect of judgment for or against judicial separation and termination of my marriage by demise of spouse and the effects thereof.
Credits 3
Prerequisite Courses
LAW 131
LAW 132
Corequisites
NONE

LAW 331 : Contracts of Guarantees
Explain the full range of legal issues that need to be encountered when dealing with guarantees and sureties, the statutory and contractual requirements that need to be met, the type of guarantee and the law and regulation that may apply to each type, differences of land and movables guarantees, corporate guarantees and mandate to issue such guarantees, terms of guarantee, renewable and nonrenewable guarantees, impact of debt restructuring, waiver, death or bankruptcy on the guarantee and comparative analysis with Islamic contracts of surety, Kefala, assignment, mortgage and pledge.
Credits 3
Prerequisite Courses
LAW 134
Law 231
Corequisites
NONE

LAW 332 : Jurisprudence

Explains the nature of jurisprudence, the meaning of law, classical positivist theories of law, pure theory of law, modern trends in analytical jurisprudence, theories of justice, sociological jurisprudence, American and Scandinavian realism, historical and anthropological jurisprudence, Economic theories of law, critical legal studies, and postmodernist jurisprudence.

Credits 3

Prerequisite Courses

LAW 130
LAW 131

Corequisites

NONE

LAW 333 : Criminal Procedure

Explain rules and principles applicable in criminal Saudi courts, specifies inaugurator general principles, lodging of criminal action, Powers and procedures of interrogation, search, and detention, release on bail, criminal courts jurisdiction, trial procedure and maintenance of order in the court, public right and private rights, hearing and judgment, nullification of judgment, appeals, review and cassation, final and conclusive judgment, executable judgments and judgment issuance.

Credits 3

Prerequisite Courses

LAW 138

Corequisites

NONE

LAW 334 : Muslims` Personal Property Law

Explain Islamic personal property law, effect of marriage on spouses` property rights as compared with other legal systems, familial financial rights and obligations of the spouses, rules of inheritance, rules of testaments and bequeathals, gifts and rules of endowment and trusts.

Credits 3

Prerequisite Courses

LAW 131
LAW 132

Corequisites

NONE

LAW 335 : International Business Transactions

Explains and tackles legal issues that arise in export and import trade, describe the rules pertaining to finance of export trade, letters of credit, stand by letter of credit, documentary collection, applicable ICC Uniform Customs and Practices, transfer of export and import and responsibilities and risks of the seller, the financer, the carrier, the buyer and the in-transit insurer, Incoterms relating to CIF, FOB, C & F and other templates, resolution of disputes and overlapping of municipal law and international commercial law and ways and means to reconcile discrepancies.

Credits 3

Prerequisite Courses

LAW 235
LAW 236

Corequisites

NONE

LAW 336 : Economic Crimes

Explain the concept of economic crime, focus on money laundering and financing of terrorism discuss the commercial fraud law and regulation, examine harboring of unlicensed commercial activities law and regulation, cover bribery, corruption and abuse of power law and regulation and explore insider dealing and market manipulation law and regulation.

Credits 3

Prerequisite Courses

LAW 138
LAW 232
LAW 236

Corequisites

NONE

LAW 337 : Conflict of Laws

International Private Law, often referred to as 'Conflict of Laws', is that body of law which deals with disputes which involve the laws of more than one country because some of their constituent elements are connected with more than one such jurisdiction. Those elements might be the events which have given rise to the dispute, the locations which might be involved, or the residential location of the parties. The study of International Private Law is necessarily an exercise in comparative legal analysis. This course provides an advanced treatment of International Private Law consisting of three modules. The first, Jurisdiction, deals with the question of which of the state's courts will adjudicate the dispute. The second module, choice of law, deals with the question of whether the merits of the dispute will be resolved under the substantive law of the state of adjudication or under the law of another involved state. The third module, recognition of judgments, deals with the requirements under which the courts of one state will recognize /enforce a judgment rendered elsewhere.

Credits 3

Prerequisite Courses

LAW 138

LAW 232

Corequisites

NONE

LAW 338 : Evidence Law

Explain procedural and substantive rules of evidence, burden of proof, judicial notice, standard of proof, weight of evidence, presumptions, types of proof, confession, admission, circumstantial evidence, material evidence, witness testimony, examination in chief, cross examination, reexamination, hostile witness, credibility of witness, impeachment, competence and compellability of witness, evidence of character, similar facts evidence, documentary evidence, expert evidence, opinion evidence and the difference between process of evidence under Common law (accusatorial process) and Civil law(inquisitorial process).

Credits 3

Prerequisite Courses

LAW 132

LAW 138

Corequisites

NONE

LAW 339 : Civil & Commercial Procedure Law

Explain rules and principles applicable in non-criminal Saudi courts, specifies rules of standing, service of notice, international jurisdiction of Saudi Courts, jurisdiction of kind and venue, procedure of case filing, presence and absence of litigants and representatives, trial procedure and order in the court, defences, joinder, enjoinder and interlocutory orders, stay, abrogation and abandonment of claim, rules of evidence and eventual judgment and revisions. This course is of a vocational nature indispensable for those planning to join any of the legal professions.

Credits 3

Prerequisite Courses

LAW 232

LAW 238

Corequisites

NONE

LAW 430 : Domestic and International Arbitration

Introduction to Alternative Dispute Resolution (ADR). overview of ADR methods, factors influencing the choice of arbitration, funding arbitration, professional ethics, approach of the courts to arbitration, the sanctions for refusing to engage in arbitration, recovery of arbitration fee in litigation, negotiation, and mediation, evaluation and conciliation, arbitral tribunal, arbitral award and orders, enforcement of settlement and awards and international arbitration.

Credits 3

Prerequisite Courses

LAW 134

LAW 232

Corequisites

NONE

LAW 431 : Public International Law

This course is an introduction to the legal rules governing the conduct of states vis-'e0-vis other states, individuals, and international organizations, with special reference to major current events and issues. Topics include the nature, sources, and effectiveness of international law; the establishment and recognition of states; principles concerning state sovereignty, territory, and jurisdiction; the law of treaties; state responsibility; international criminal and humanitarian law; the use of force; terrorism; human rights; international trade and environmental law; and the law of the sea.

Credits 3

Prerequisite Courses

LAW 130

Corequisites

NONE

LAW 432 : Legal Professional Ethics

Explain codes of ethics of lawyers and other members of the legal profession, lawyers` client relationship, conflict of interests, confidentiality, fee, professional privilege, third parties, authorization and matters that are ultra vires, UN standards for the judiciary, judges, members of public prosecutions and other legal officers.

Credits 3

Prerequisite Courses

LAW 130
LAW 131

Corequisites

NONE

LAW 433 : International Economic Law

This course focuses on the law governing international trade as established by the World Trade Organization. It engages in an in-depth analysis of WTO rules and case law. The class will examine the strengths and weaknesses of the existing regime and discuss the difficulties in reforming the system. Besides focusing on the basic principles governing international monetary law, the world bank the international monetary fund and international regulation of the banking sector. The course will also examine specialized areas such as technical standards, agriculture, food safety, environment, and barriers to trade. In addition, the course will focus on the geopolitical tensions between major trading powers, particularly with respect to the US, EU, and emerging powers (China, India, Brazil).

Credits 3

Prerequisite Courses

LAW 234
LAW 335
LAW 430

Corequisites

NONE

LAW 434 : Medical Law

This course focuses on medicine and the law. It explores the interrelationship of the two disciplines in areas such as morality, ethics, proof, and professional responsibility. Patient`s consent to treatment, confidentiality, genetic information, and duty of care are typical areas of interaction. Furthermore, ethical, and moral issues surrounding contraceptives, abortion and other fertility risks are considered. Likewise, childlessness and respective treatment of. in-vitro fertilization, donation and surrogacy are explored. Scientific research and use of human embryos in experimentation and the limits of such use are explained. Negligence and medical injuries are focused on under both statutory and general principles of liability. Medical evidence no doubt is crucial in the proof of sanity, insanity, diminished responsibility, causation, psychopathology, and other determinants of voluntary or involuntary action. Forensic medicine is of such an importance to law that it has developed into a discipline sui generis.

Credits 3

Prerequisite Courses

LAW 238
LAW 333

Corequisites

NONE

LAW 435 : Internet and Cybersecurity Law

This course focuses on computer technology and the law. Focus is centered on transborder data flow and ways and means legislatures around the world are pursuing to protect against computer related crimes. The US and European Union amass the biggest arsenal of laws and regulation in this respect. The course is geared towards studying Saudi Arabia relevant law and regulations against a comparative background survey of legal protection in other countries. The scope of data protection is explored. Likewise, sectoral nature of the data to be protected and the varying degree of protection allocated to government data bases, energy, financial markets, children, medicine, industrial sector, biological research and intellectual property are respectively examined.

Credits 3

Prerequisite Courses

LAW 336
LAW 338

Corequisites

NONE

LAW 436 : International Criminal Law

This course focuses on substantive and procedural rules relating to international criminal law. It engages in an in-depth analysis of nominate crimes of geocide, crimes against humanity, crimes of aggression and torture and war crimes. The course explains types of international criminal courts including but not limited to ad hoc criminal tribunals to deal with specific events constituting any of the crimes above. It also focuses on the permanent international criminal court established by the Rome statute. The course investigates elements of crime as mutatis mutandis applicable to international crimes. Acts by subordinate and superior are examined to know the limit if any of liability. Issues of jurisdiction, sovereign immunity, availability of domestic judicial redress are central to the discussion. Instances where the international criminal court takes cognizance of a crime are discussed. Original jurisdiction of the court and jurisdiction by referral from the UN Security Council is examined.

Credits 3

Prerequisite Courses

LAW 138
LAW 333
LAW 431

Corequisites

NONE

LAW 437 : International Labour Standards

This course focuses on international labour conventions governing individual and collective Labour relations. The course aims to explain the conventions applicable to1. right to a job ,2. right in the job, 3.rights on the job ,4. rights after the job and 5. collective labour relations rights. Right to a job focuses on ILO conventions relating to selection for employment, equality of opportunity in employment and occupation and unemployment benefits. Rights in the job studies ILO conventions relating to protection against arbitrary termination of employment and redundancies and remedies thereof. Rights on the job comprise the bulk of employment rights including but not limited to wages, leaves, paternity and maternity rights, occupational safety, and hours of work. Rights after the job contrast ILO conventions relating to severance benefits, pensions, and social insurance. Collective labor relations rights will focus on 8 ILO fundamental conventions that are deemed binding on all states irrespective of ratification by any such states.

Credits 3

Prerequisite Courses

LAW 232
LAW 239
LAW 431

Corequisites

NONE

LAW 438 : International Investment Law

This course focuses on the object and purpose of international investment law , history of international investment treaties, sources of international investment law, model treaties, investors and investments covered by the regime, the concept of investment, investment contracts, admission and establishment of foreign investment, fair and equitable treatment, full protection and security, protection from expropriation, access to courts, most favored nation treatment, transfer of payment, direct and indirect investment, investing in stocks, state responsibility, settlement of investment disputes and domestic investment laws and compatibility with international standards.

Credits 3

Prerequisite Courses

LAW 232
LAW 235
LAW 335

Corequisites

NONE

LAW 440 : Summer Internship

(8 weeks, 320 hours, Full Time)

Intensive experience with a law firm or legal public or government agency. The purpose of a Law internship is to gain full-time practical work experience to apply and further your understanding of the legal term and topics covered in the law. During the internship, the student will remain in contact with the College and the designated internship Coordinator/Supervisor. The student will create a weekly log and summary of work activity. A final report is also required. In the course of the internship, the student must not violate the company’s policies on intellectual property and/or confidentiality and must abide by all other relevant government and company policies. A mandatory advisement appointment with the College is required prior to registration.

Credits 0

Prerequisite Courses

LAW 134
LAW 140
LAW 239
LAW 339

LAW 441 : Intellectual Property Law

This course explores, defines and explains the meaning of intellectual property, the international framework and municipal laws , patentability , patents` use , grants, infringement and revocation, copyright and related issues , designs registered or unregistered, trademarks and other image rights , confidentiality and trade secrets, computer technology and intellectual property and remedies in intellectual property litigation.

Credits 3

Prerequisite Courses

LAW 134
LAW 232
LAW 338

Law 231 : Agency Law
Explore, define and explain the general principles relating to Agency Law, the extent to which general principles of contract are customized to fit this specific contract, rights and responsibility of the principal and agent, disclosed and undisclosed agency, rights of third parties vis a vis the principal and agent, ostensible agency, requirement of registration of commercial agencies and franchises.
Credits 3
Prerequisite Courses
LAW 133
LAW 134
Corequisites
NONE

Mathematics

CAL 351 : Pharmacy calculations
This course will introduce the students to the knowledge and skills of fundamental mathematical calculations utilized in pharmacy practice. It will explain to the students the important basic conversions, how drugs strengths are expressed, and how to do the required calculations for compounding medications. Topics include: systems of measurement, expressions of concentrations, general considerations in calculation of doses, calculation of doses according to the patient parameters, buffer system calculations, isotonicity calculations and electrolytes specific calculations. Principles taught in this course will allow the students to interpret and dispense prescriptions and medication orders.
Credits 1
Prerequisite Courses
MAT 235
Corequisites
None

MAT 100 : Pre-calculus
This course builds sound and strong basic mathematics that are required for studying undergraduate mathematics. This course is particularly important to students whose mathematical skills are not sufficiently developed at the high school level. The course covers materials that include algebraic operations, radical and rational expression, equalities and in-equalities, functions and analytic geometry, special types of functions (linear, quadratic, inverse, polynomial, rational, exponential, logarithmic and trigonometric), solution to equations, and identities involving some types of functions.
Credits 3
Prerequisites
None

MAT 101 : Calculus I
This course introduces the basic concepts of mathematical analysis used in science and engineering. The course teaches an introduction to differential and integral calculus. Topics include limits; the derivative; rates; Newton's method; the mean-value theorem; max-min problems; the integral and the fundamental theorem of integral calculus; areas, volumes, and average values.
Credits 3
Prerequisites
None

MAT 102 : Mathematics for Medical Students
This course will cover basic topics in algebra and serves as an introduction to trigonometry. Topics covered include the real line and coordinate system, functions and graphs, symmetry and translation, inverse functions, polynomial and rational functions, exponential and logarithmic functions, trigonometric functions and special identities. Some applications of these concepts to problems that may be helpful to the further study of quantitative methods in the medical sciences will be considered.
Credits 2
Prerequisites
None

MAT 105 : Calculus for Biomedical Sciences I

This course offers a solid introduction to differential and integral calculus and is designed for students in the biomedical sciences. The course begins with an intensive review of important topics from pre-calculus and an introduction to discrete time and population models. Then it proceeds to cover limits, continuity, differentiation, derivative rules, curve sketching, optimization, difference equations, anti-derivatives, Riemann sums, definite integral, fundamental theorem of calculus, applications of integration.

Credits 3

Prerequisites

UPP College Algebra or Equivalent.

MAT 111 : Business Calculus

The main objective of this course is to help the student in understanding the basic concepts of calculus on the one hand, and to develop the skills needed for using calculus as a viable tool to solve problems that arise in the study of business and economics. Topic covered include, limits, types of functions (polynomial, rational, exponential and logarithmic), their derivatives, anti-derivatives and their various applications.

Credits 3

Prerequisite Courses

MAT 100

MAT 112 : Calculus II

This course is a continuation to Calculus I. The course covers basic mathematical analysis and mathematical tools that are widely used and are essential for mathematical analysis and applications. Topics include sequences; infinite series; power series; conics; polar, cylindrical, and spherical coordinates; vectors and the geometry of space; and vector valued functions.

Credits 3

Prerequisite Courses

MAT 101

MAT 116 : Calculus for Biomedical Science II

This course is a continuation of MAT 105. The course covers further integration techniques, such as integration by parts, by substitution and by partial fractions. Other topics include improper integrals, sequences and series, convergence tests, power and Taylor series, solving differential equations, limits and continuity of functions of two variables, partial derivatives, the double integral.

Credits 3

Prerequisite Courses

MAT 105

MAT 211 : Calculus III

This course deals with multi-dimensional calculus. It is designed primarily for engineering majors and is taken by other technical majors. The student will develop an understanding of limits and continuity of functions of several variables; compute partial derivatives and apply to optimization problems; set up and compute iterated integrals to compute areas, volumes of solids; understand and apply Green's Theorem, the Divergence Theorem and Stoke's Theorem.

Credits 3

Prerequisite Courses

MAT 112

MAT 212 : Linear Algebra

The course teaches an introduction to linear algebra. Topics include complex numbers, geometric vectors in two and three dimensions and their linear transformations, the algebra of matrices, determinants, and solutions of systems of equations, vector space, eigenvalues and eigenvectors.

Credits 3

Prerequisite Courses

MAT 112

MAT 213 : Differential Equations

This course is an introduction to the theory and application of ordinary differential equations and the Laplace transform. The main objective is for the student to develop competency in the basic concepts and master certain solution methods. Topics covered include linear and nonlinear first order equations; higher order linear differential equations; undetermined coefficients method; variation of parameters method; Cauchy-Euler equation; Laplace transform; linear systems solution; solution by series method.

Credits 3

Prerequisite Courses

MAT 112

MAT 224 : Numerical Methods

This course introduces the basic concepts of numerical analysis that are employed in science and engineering. It includes a solid introduction to the basic methods and approximation techniques in use, and to the reliability and accuracy of the approximations. Applications of the methods to simplified/model problems that represent real-life problems are also included. Programming skills (based on MATLAB/ OCTAVE) needed to implement the methods on a computer are also covered.

Credits 3

Prerequisites

MAT 212, CSC 112 or equivalent

MAT 235 : Calculus

Calculus is the mathematical study of change with two major branches, differential calculus (concerning rates of change and slopes of curves), and integral calculus (concerning accumulation of quantities and the areas under and between curves). This course will provide a comprehensive introduction to calculus as applied to the study of pharmacokinetics and the practice of pharmacy. In this the course, concepts of functions, domain and range, composition and finding the inverse of a function, limits (understand the concept of limits, one- sided and two-sided limits, existence of limits, infinite limits, vertical asymptotes and learn the limit rules), continuity, and develop skills for their determinations. They will recognize the derivative, and develop skills for using rules of differentiation. They will also understand the integral concept and its use in computing areas of various regions with curved boundaries.

Credits 3

Prerequisite Courses

PAM 101

Corequisites

None

PAB 101 : Preparatory Algebra for Business I

This course reviews and develops basic and intermediate Algebra skills. The primary learning outcome for this course is quantitative reasoning, which will require students to read and analyze data, develop mathematical models, draw inferences and support conclusions based on mathematical reasoning. A graphical approach will be utilized throughout the course with an emphasis on solving application problems. Topics include properties of exponents, algebraic expressions, polynomials, functions, the graphs of functions, linear functions, linear equations and systems of linear equations.

Credits 3

PAB 112 : Preparatory Algebra for Business II

This course reviews and develops basic and intermediate Algebra skills. The primary learning outcome for this course is quantitative reasoning, which will require students to read and analyze data, develop mathematical models, draw inferences and support conclusions based on mathematical reasoning. A graphical approach will be utilized throughout the course with an emphasis on solving application problems. Topics include rational expressions, radical expressions, quadratic functions, exponential functions, logarithmic functions, graphs of functions and equations (rational, radical, quadratic, exponential and logarithmic).

Credits 3

Prerequisite Courses

PAB 101

PAM 101 : Preparatory Algebra for Medicine

This course reviews and develops basic and intermediate Algebra skills. The primary general learning outcome for this course is quantitative reasoning, which will require students to read and analyze data, develop mathematical models, draw inferences and support conclusions based on mathematical reasoning. A graphical approach will be utilized throughout the course with an emphasis on solving application problems. Topics include properties of exponents, algebraic expressions, polynomials, functions, the graphs of functions, linear functions, linear equations, systems of linear equations, rational expressions, radical expressions, quadratic functions, exponential functions, logarithmic functions, graphs of functions and equations (rational, radical, quadratic, exponential and logarithmic)

Credits 3

PAM 101/MAT 103 : Algebra

This course specifically aims to review and develop basic and intermediate Algebra skills. It focuses on the fundamentals of algebra with an emphasis on linear, quadratic, rational, radical, exponential and logarithmic functions. All topics include applications and problem solving techniques. The primary general education learning outcome for this course is quantitative reasoning, which will require students to read and analyze data, develop mathematical models, draw inferences and support conclusions based on mathematical reasoning. A graphical approach will be utilized throughout the course with an emphasis on solving application problems.

Credits 3

Prerequisites

None

PBS 112 : Business Statistics

This course of Statistics is the collection, display, and analysis of data; it is the art of making wise decisions in the face of uncertainty. The purpose of this course is to introduce students on how to think critically about data'97how it was collected and analyzed'97and its uses in addressing relevant questions. Basic statistical concepts and methods are presented in a manner that emphasizes understanding the principles of data collection and analysis rather than theory. There is an emphasis on statistical terminology and the use of Microsoft Excel for applications of data analysis and presentation.

Credits 3

PPC 101 : Preparatory Pre-Calculus for Engineering and Science I

This course reviews and develops intermediate and advanced Algebra skills. The primary learning outcome for this course is quantitative reasoning, which will require students to read and analyze data, develop mathematical models, draw inferences and support conclusions based on mathematical reasoning. A graphical approach will be utilized throughout the course with an emphasis on solving application problems. Topics include algebraic expressions, mathematical models, polynomials, functions, graphs of functions, systems of linear and non-linear equations and equations (linear, absolute value, quadratic, polynomial, rational and radical).

Credits 3

PPC 112 : Preparatory Pre-Calculus for Engineering and Science II

This course reviews and develops intermediate and advanced Algebra skills. The primary learning outcome for this course is quantitative reasoning, which will require students to read and analyze data, develop mathematical models, draw inferences and support conclusions based on mathematical reasoning. A graphical approach will be utilized throughout the course with an emphasis on solving application problems. Topics include exponential functions, logarithmic functions, and trigonometric functions, analytic trigonometry, polar coordinates and graphs of polar equations.

Credits 3

Prerequisite Courses

PPC 101

Medical Imaging

MIM 599 : Medical imaging for pharmacists

This course will discuss the principles and applications of medical imaging in patient care. Great emphasis will be on radiopharmaceuticals and nuclear medicine imaging (SPECT and PET) but other imaging technologies such as; MRI, ultrasound, x-ray, mammography and CT scan will be discussed briefly. These technologies are applied greatly in diagnosing various disease states such as; infectious diseases, cancer, cardiovascular, hepatobiliary, renal and neurological disorders. The emerging role of molecular imaging using PET and SPECT in selecting patients for personalized medicines for cancer as well as monitoring response to these new therapies will be also discussed.

Credits 3

Medical Informatics

MIF 356 : Medical Informatics

This course provides the future healthcare leaders an understanding of the value and capability of information and technology to lead the transformation of healthcare, contain costs, reduce medical errors, and optimize the delivery of services across all healthcare professions. Understand the nature of medical data and the electronic medical records (EMR), knowledge of standards, coding and classifications in medical informatics, an overview of the informatics tools and systems in healthcare and their associated medical departments and clinical support systems, familiar with the foundations of quality, patient safety, and risk management sciences. Demonstrate best practices through quality improvement tools and techniques and educate students to be agents to facilitate patient safety culture.

Credits 2

Prerequisites

None

Medication Safety

MSF 5X3 : Medication safety and health informatics

Medication safety deals with the identification and prevention of medication errors. Students will learn about different types of medication errors, factors that contribute to their occurrence, their severity, and the steps required for their prevention. They will be provided with the core knowledge and skills needed to understand the background and culture of patients'92 safety, data privacy and security. Students in this course will gain experience in collecting data on medication errors, analyzing the findings, communicating with other health care professionals and administrators through a reporting mechanism, and tracking and trending an area of failure and success. The students will encourage developing their own ideas of implementing patient'92s safety, especially for those graduate seeking careers in: health-system, ambulatory, and community pharmacy management and leadership. This course will also teach the concepts and tools required to understand informatics in pharmacy practice. The field of health informatics includes the development, deployment, and use of hardware and software technologies to enhance patient care including improvements in efficiency and safety. Key items that will be discussed include software'92s, such as; electronic medical records, computerized provider order entry/e-prescribing, and clinical decision support tools as well as hardware solutions, such as; robotic dispensing/ picking, bar code medication administration, and automated dispensing cabinets.

Credits 3

Medication Therapy Management

MTM 471 : Medication therapy management
Medication Therapy Management (MTM) is a distinct service that optimize therapeutic outcomes for individual patients. This course will introduce the students to the MTM service in pharmacy practice and its five core elements; medication therapy review (MTR), personal medication record (PMR), medication-related action plan (MAP), intervention and/or referral, documentation and follow-up, with brief discussion of topics in social and cognitive pharmacy. MTM service emphasizes on performing a comprehensive medication therapy review to identify medication-related problems, and to create an individualized therapy plan to resolve them. Part of MTM is to enhance the patient understanding of appropriate drug use, improve patient adherence with prescribed drugs and reduce the risk of adverse events associated with inappropriate drug use. It will introduce the student to the concept of evaluating complicated medication regimens as a scope of therapy management career. Ultimately this service is capable of increasing safety of healthcare practices. Practical application of the knowledge gained in this course will be done in patient care and health system management laboratory courses I-IV.
Credits 2
Prerequisite Courses
BPH 365
Corequisites
None

Medicinal Chemistry

MCH 241 : Medicinal chemistry
This course introduces the concepts required to understand how the biological activities of drugs will be derived from their chemical structures and physicochemical properties of various organic functional groups. In this course the students will understand functional groups, drug pKa, lipophilicity/ hydrophilicity, potency, stereochemistry, the effect of structural modifications on stability, and molecular targets. In general these properties will determine drug'92s metabolic pathways, types of metabolites expected to have biological activity, signal transduction and drug-receptor interactions. The course will discuss different analytical methods used to assay pharmaceuticals and will classify drugs acting on different systems, their mechanisms of action, structure activity relationship and issues related to their pharmacology and clinical use.
Credits 4
Prerequisite Courses
CHM 232
Corequisites
None

Microbiology

BIO 223 : Microbiology
The course provides a basic understanding of modern medical microbiology with emphasis on the contribution microorganisms make to human health and welfare and intensive study of the processes by which microorganisms cause human disease, how the pathogens can be recognized (identified) and what steps can be taken for the prevention and treatment of infections. The emphasis on the development of observational, practical and analytical skills through supervised laboratory work and demonstrations.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisite Courses
BIO 101
CHM 112

MIC 243 : Microbiology

This course will provide the students with a basic understanding of modern medical and general microbiology with emphasis on role of microorganisms in human health and disease. The course will address the fundamental concepts on characteristics of microorganisms of medical importance including bacteria, virus, fungi, protozoa, and helminthes. The basics of the taxonomy and classification, morphology, nutrition, growth conditions, metabolism and genetics of these microbes will be discussed. The concept of host-parasite relationship, pathogenicity and microbial virulence factors will also be addressed. Using an integrated approach, the students will then be able to explore how these concepts relate to the infectious disease process, laboratory diagnosis and identification of microbes and targets of antimicrobial drugs. The students will explore the development of antimicrobial resistance and correlate microbial gene transfer mechanisms with dissemination of resistance genes. This course will use a diversity of teaching approaches such as lectures, laboratory practical sessions and interactive large group discussions, through which, it is expected that this course will equip students with the basic principles of microbiology. This will serve as a basis for their continuing understanding of infectious diseases in later stages of the curriculum.

Credits 3

MIC 354 : Advanced Microbiology

This course will introduce students to key concepts and principles of infection control in relation to pharmaceutical practice. The various approaches to control of growth of microbial agents and the types of microbial control agents utilized in healthcare and industrial settings will be addressed. In this course students learn about the indications, approaches, equipment and agents utilized for cleaning, sterilization and disinfection processes in the healthcare setting as well as in industrial pharmaceutical settings. They will begin to understand the criteria for selecting and monitoring the usefulness of the agents, equipment and monitoring approaches used for sterilization & disinfection. The course will also address approaches to infection control practices in the community with special emphasis on community pharmaceutical practices.

Credits 2

Prerequisite Courses

MIC 243

Corequisites

None

Molecular Medicine

MOL 114 : Molecular Medicine I (Biochemistry & Cell Biology)

The overall objective of this course to introduce the student to the molecular mechanisms by which cells interact with their environment and some of the biochemical processes involved in the generation of metabolic energy. To achieve this objective, the course will address basic biochemical properties of amino acids and proteins, protein assembly and folding into three dimensional structures required for function, and principles of enzyme kinetics. In addition, key topics on cell structure, protein trafficking, extracellular matrix and cell signaling will also be discussed. Finally, a review of carbohydrate metabolism and the generation of usable chemical energy by the cell will be presented.

Credits 3

Prerequisites

None

MOL 125 : Molecular Medicine II (Biochemistry & Cell Biology)

The overall objective of this course to introduce the student to the molecular mechanisms by which cells interact with their environment and some of the biochemical processes involved in the generation of metabolic energy. Molecular Medicine II is a continuation of the Molecular Medicine I course. The cell cycle and cell response to external stresses will be addressed. The biochemical pathways involved in lipid metabolism will be reviewed and clinically relevant topics discussed, such as atherosclerosis, obesity, diabetes. Further, protein metabolism and disposal of nitrogen will be addressed. Other relevant topics covered include vitamins and trace elements, haemoglobin, and biomarkers of disease

Credits 3

Prerequisites

None

Musculoskeletal Block

MSI 361 : Musculoskeletal and integumentary block

This course examines the etiology, epidemiology, predisposing factors, pathophysiology, and classification of common major musculoskeletal and skin diseases. Relate clinical signs and symptoms, result of laboratory diagnostic tests, and radiological changes with underlying pathogenesis of common major musculoskeletal and skin diseases. Describe the principles of deferential diagnosis and clinical investigations of musculoskeletal and skin disorders. Discuss the mechanism of action of drugs used in the management of common major musculoskeletal and skin diseases.

Credits 3

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242

Co-Requisite Courses

CVP 351
HEM 352

MSK 112 : Musculoskeletal Block

This is a multidisciplinary course (block) integrating topics in basic and applied clinical anatomy, histology, embryology and physiology related to musculoskeletal system.

Credits 4

Prerequisites

None

Corequisites

FON 111, GIT 113

Nanomaterials & Nanotechnology

BSN 430 : Nanomaterials & Nanotechnology
The course is designed to introduce students to the emerging area of nanomaterials and nanotechnology. The course intends to prepare and train students in the evolving areas of nanoscience and nanotechnology which lies at the interfaces of chemistry, physics, and biology. It will cover the basic fundamentals of Nanoscience and Nanotechnology including properties of nanomaterials, nanoscale phenomena, synthesis and fabrication, and characterization of nanomaterials. In addition, the emerging and potential applications of nanomaterials will be reviewed with more focus on applications related to life sciences.
Credits 3
Prerequisite Courses
CHM 310

Neuroscience Block

NEU 241 : Neuroscience Block
This block is fully integrated covering normal structure and function as well as integrating disease processes and pharmacotherapy of the diseases related to neurology and psychiatry. The course is runs over eleven weeks. All the learning activities are centered on weekly themes. A typical week starts with the teaching of structure and function followed by disease processes and pharmacotherapy. In the last part of the week clinical lectures are delivered to relate clinical features with the disease processes, and to discuss diagnostic approaches to different clinical presentations. A PBL case relevant to the theme of the week is discussed and serves to anchor the learning around that theme.
Credits 6
Prerequisite Courses
FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
Corequisites
HNS 242

Nutrition

NTN 368 : Nutrition
In this course students will learn how to recognize the major macro and micronutrients relevant to human health, and understand their roles and importance, understand the scientific grounds of determining the nutritional requirements of healthy individuals and communities, as well as specific populations, such as children, elderly, and pregnant and lactating women, discuss how nutrition relates to preventing or causing various illnesses, particularly chronic diseases, discuss major nutrition-related disorders and conditions and Suggest a community-based nutritional awareness plan.
Credits 2
Prerequisites
None

Orientation and Academic Success

COB 100 : Student Orientation and Academic Success
Credits 1

Parenteral Therapy

PTH 362 : Parenteral Therapy

This course will introduce the students to parenteral routes of drug administration, including; Intramuscular, Intravenous, Intra-arterial, Intra-cardiac, Intra-thecal, Intradermal (Intra-cutaneous) and Subcutaneous route (Hypodermic). Topics such as intravenous admixture preparation, compatibility of parenteral products, hazardous drugs and radiopharmaceuticals preparations will be covered. This course will also focus on the clinical aspects of enteral feeding and parenteral nutrition therapy. The practical sessions of the course will enable the student to prepare individualized sterile medications, suitable for specific patient needs; containing the prescribed ingredients in the correct amounts, free from microbial and pyrogenic contaminants as well as undesirable levels of particulate or other toxic contaminants. Product stability, compatibility, labelling, and storage according to the principles of good drug quality control will be emphasized. This course will be highly dependent on mathematical and pharmaceutical knowledge the students acquired in previous courses to make this service feasible and efficient.

Credits 2

Prerequisite Courses

CAL 351

Corequisites

None

Pathogenesis of Diseases

POD 233 : Pathogenesis of Diseases (Basic Principles of Pharma, Micro, Patho & Immuno)

During this course, students will become conversant with basic characteristics of disease, classification, etiology, pathogenesis, structural and functional manifestations, complications, sequelae, and prognosis. This course deals with basic principles of pharmacology, pathology, immunology, and microbiology in an integrated approach.

Credits 5

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123

Co-Requisite Courses

END 231
REP 232

Patient Care

PCL 5X4 : Patient care and health system management laboratory IV

Patient care and health system management laboratory courses are designed to build and reinforce contemporary pharmacy practice skills in the provision of patient care and health systems management. Throughout the course series students will participate in practicum and simulation components of the lab, to expand their practice skills in preparation for advanced pharmacy practice experience (APPE) rotations. In particular, patient care and health system management laboratory courses III and IV will give the student the experience required in hospital, and other alternative settings by focusing on foundational practice skills that are aligned with the fifth year '93integrated pharmacotherapy courses'94 and their '93case-based seminars'94, such as;

- Hospital medication order processing and dispensing (automated medication dispensing devices, and bar coding)
- Handling prescription and dispensing of commonly used prescription and non-prescription medications in a patient with multiple co-morbidities
- Advanced level patient assessment
- Patient counselling on medications, especially those with communication barriers
- Patient counselling in a team-based setting
- Development of comprehensive patient care plans
- Identification of complex drug therapy problems
- Pharmacy-based immunization training
- Interprofessional education

Credits 2
Prerequisites
PCL 477, PCL 487
Co-Requisite Courses
IPH 591
IPH 592
IPH 593
IPH 594

PCL 477 : Patient care and health system management laboratory I

Patient care and health system management laboratory courses are designed to build and reinforce contemporary pharmacy practice skills in the provision of patient care and health systems management. Throughout the course series students will participate in practicum and simulation components of the lab, to expand their practice skills in preparation for advanced pharmacy practice experience (APPE) rotations. In particular, patient care and health system management laboratory courses I and II will give the student the experience required in community, hospital, ambulatory care, and alternative settings by focusing on foundational practice skills that are aligned with the fourth year '93integrated pharmacotherapy courses'94 and their '93case-based seminars'94, such as;

- Handling prescription and dispensing of commonly used prescription and non-prescription medications and various dosage formulations
- Patient assessment
- Communication skills including patient counselling on medications and/or devices
- Development of patient care plans
- Community and hospital medication review and dispensing (including intravenous dosage forms)
- Application of medication safety principles while handling community/ ambulatory/ institutional prescription orders

Credits 2
Prerequisite Courses
BPH 366
Co-Requisite Courses
IPH 473
IPH 474
IPH 475
IPH 476

PCL 487 : Patient care and health system management laboratory II

Patient care and health system management laboratory courses are designed to build and reinforce contemporary pharmacy practice skills in the provision of patient care and health systems management. Throughout the course series students will participate in practicum and simulation components of the lab, to expand their practice skills in preparation for advanced pharmacy practice experience (APPE) rotations. In particular, patient care and health system management laboratory courses I and II will give the student the experience required in community, hospital, ambulatory care, and alternative settings by focusing on foundational practice skills that are aligned with the fourth year '93integrated pharmacotherapy courses'94 and their '93case-based seminars'94, such as;

- Handling prescription and dispensing of commonly used prescription and non-prescription medications and various dosage formulations
- Patient assessment
- Communication skills including patient counselling on medications and/or devices
- Development of patient care plans
- Community and hospital medication review and dispensing (including intravenous dosage forms)
- Application of medication safety principles while handling community/ ambulatory/ institutional prescription orders

Credits 2
Prerequisite Courses
BPH 366
Co-Requisite Courses
IPH 473
IPH 474
IPH 475
IPH 476

PCL 595 : Patient care and health system management laboratory III

Patient care and health system management laboratory courses are designed to build and reinforce contemporary pharmacy practice skills in the provision of patient care and health systems management. Throughout the course series students will participate in practicum and simulation components of the lab, to expand their practice skills in preparation for advanced pharmacy practice experience (APPE) rotations. In particular, patient care and health system management laboratory courses III and IV will give the student the experience required in hospital, and other alternative settings by focusing on foundational practice skills that are aligned with the fifth year "integrated pharmacotherapy courses" and their "case-based seminars", such as;

- Hospital medication order processing and dispensing (automated medication dispensing devices, and bar coding)
- Handling prescription and dispensing of commonly used prescription and non-prescription medications in a patient with multiple co-morbidities
- Advanced level patient assessment
- Patient counselling on medications, especially those with communication barriers
- Patient counselling in a team-based setting
- Development of comprehensive patient care plans
- Identification of complex drug therapy problems
- Pharmacy-based immunization training
- Interprofessional education

Credits 2
Prerequisite Courses
PCL 477
PCL 487
Co-Requisite Courses
IPH 591
IPH 592
IPH 593
IPH 594

Pharmaceutical Industry

PHI 597 : Pharmaceutical industry

This course is designed to expose students to the pharmaceutical industry, its environment, inner workings, and approach to engaging customers and stakeholders. It is intended to broaden the pharmacy students'92 understanding of this industry, introduce critical concepts and terminology, build confidence and prepare students who may seek a career in Pharmaceutical industry. Pharmacy students will learn the principles of pharmaceutical manufacturing and the requirements for good manufacturing practices (GMP) certification. The basic operations involved in the production of a dosage form; from research and development (R&D) until quality control (QC) procedures involved will be demonstrated. It involves different visits to local pharmaceutical companies to follow the manufacturing processes in general and tableting process, in particular, starting with excipients'92 selection, tableting steps and coating techniques, and ending with the required QC procedures to evaluate the outcome.

Credits 3

Pharmaceutics

PHC 353 : Pharmaceutics I: Dosage Forms and Stability

This course introduces the student to the technologies involved in pharmaceuticals development processes and their required pharmaceutics components or excipients. Students will learn the basic requirements of good manufacturing practices (GMP) followed worldwide for drug or pharmaceuticals development. The students will differentiate between the most common dosage forms, their routes of administrations, and the use of bioavailability and bioequivalence for formulations'92 assessments. The major classifications and pharmaceutical compounding of dosage forms will be covered, including; powders and granules, capsules, tablets (coating, disintegration, dissolution), solutions (solubility, polymorphism, crystal structure), polyphases systems (colloids, gels, suspension, emulsions, surface tension, surfactants, HLB), topical dosage forms (creams, ointments, absorption), and mucosal delivery (nasal, pulmonary, buccal). Stability and quality control studies of each dosage form will be addressed. The basic principles associated with pharmaceutical (extemporaneous) compounding will be explained. There will be laboratory sessions to provide general principles and hands-on experience in the preformulation, formulation, manufacturing, and quality control fields that are necessary in design, formulation, compounding and manufacturing of drug dosage forms.

Credits 3

PHC 361 : Pharmaceutics II: Drug Delivery

This course will introduce students to the pharmaceutical aspects of drug delivery systems as well as alternative application sites with a view to optimize therapeutic effect. It will discuss selected modern formulation principles (applied as well as potential) theoretically and methodically to explain problems/issues concerning the optimization of absorption, selective transport and targeting as well as the properties and effect of excipients. The course will cover drug classes (small molecules, prodrugs, peptides, proteins, nucleotides, etc.); applicable delivery systems (solid dispersions, self-emulsifying systems, cyclodextrins, polymeric nanoparticles, liposomes, etc.) and administration routes (oral, IV, IM, topical, pulmonary, nasal, etc.). Students will learn the development and characterization of drug delivery systems, release models, transport and absorption studies in in vitro and in vivo models.

Credits 2

Prerequisite Courses

PHC 353

Corequisites

None

Pharmacogenomics

PHG 478 : Pharmacogenomics and personalized medicine

This course will teach the students the basic principles of human genetics and how it contributes to inter-individual variation in treatment strategies. They will apply the principles of molecular and cellular biology to understand how genetic variability in genes encoding drug metabolizing enzymes, drug transporting proteins, and drug receptors (targets) can contribute to variability in drug disposition and action. Accordingly the genetic makeup of an individual will lead to major changes in pharmacokinetics, pharmacodynamics, and clinical outcome. They will be able to discuss the impact of pharmacogenomics in different therapeutic areas, using case studies reporting the clinical consequences of pharmacogenomics on therapeutic efficacy or toxicity. They will apply pharmacogenomics concept to a particular drug therapy to solve relevant problems in pharmaceutical care. The societal and ethical implications of genetic testing and the resultant individualization of drug therapy will be covered in this course. By the end of this course, the students will be equipped to critically evaluate the current and future literature in the area of pharmacogenomics.

Credits 2

Pharmacokinetics

KIN 352 : Pharmacokinetics

The interrelationship of the physical-chemical properties of the drug, and the LADME properties of a drug (liberation, absorption, distribution, metabolism and excretion) will be explained in this course. Drug modelling such as one and two compartment open models will be covered. Effect of route of administration on the drug disposition after IV bolus, IV continuous infusion and oral administrations will be also addressed. In this course, the students will understand the difference between linear and non-linear pharmacokinetics, drug interactions, bioavailability, bioequivalence, and the factors affecting drug elimination (metabolism and excretion). The relationship between drug concentration, effect, and side effects will be explored in this course. Tutorial sessions for problem based learning using case scenarios will be an integral part of this course. The aim of these tutorial sessions is to help students grasp the basic theories and basic skills of pharmacokinetics, and to develop the students' ability to analyze and solve problems. At the end of this course, the student will be able to design and adjust a patient'92s drug dosage regimen to obtain a plasma/serum concentration within a desired therapeutic range.

Credits 3

Prerequisite Courses

MAT 235

Corequisites

None

KIN 481 : Clinical Pharmacokinetics

This course involves clinical applications of pharmacokinetic principles. Emphasis is placed on the identification of actual and theoretical factors that contribute to variabilities in pharmacokinetic parameters and associated pharmacological responses. Design of optimized dosing regiments for patient care utilizing drug monitoring techniques and computer technology will be also covered in this course. Case studies with different patient population and with co-morbidities are utilized whereby students will apply pharmacokinetic concepts in a clinical context and discuss drug dosing and therapeutic drug monitoring. Latest standardized techniques and dosing methods are critically explored, contrasted, and applied to patient-specific dosing scenarios. The student will apply the principles for pharmacokinetics and therapeutic drug monitoring in decision-making and improvement of patient care.

Credits 2

Prerequisite Courses

KIN 352

Corequisites

None

Pharmacotherapy

BPH 365 : Basic pharmacotherapy

Integrated pharmacotherapy courses in this program will be introduced via an introductory basic pharmacotherapy course, where it will teach the students basic pharmacodynamic principles. It will introduce the students to the normal physiology of Autonomic nervous system ANS and the pharmacology of drugs acting on parasympathetic and sympathetic nervous system. This knowledge will give the student a fundamental background to understand the actions of various groups of drugs and their clinical applications. This course also will cover drug toxicity and poisoning lectures along with principles of treatment of poisoning. The concepts of environmental, occupational, and forensic toxicology will be introduced to the students by the end of the course. This course is quiet important because it will introduce the student to the concept of integration in learning process as, various discipline are involved such as; pharmacology, physiology, pathology, as well as pharmaceutical practice.

Credits 3

Prerequisites

None

Corequisites

BPH 366

BPH 366 : Basic Pharmacotherapy '93case-based seminars'94

Case based seminars is a practical application of the knowledge the students acquired from the concomitant pharmacotherapy course. This course in particular will focus on application of the knowledge acquired from basic pharmacotherapy course with regard to pharmacodynamics, autonomic nervous system, drug poisoning and environmental as well as occupational toxicology. The course will start with a series of lectures focusing on communication and presentation skills. Followed by the usual conduct of such course via '93case based seminars'94 which applies '93case-based collaborative learning'94 which integrate problem-based learning (PBL), with team-based learning (TBL). The students are divided into small groups with the help of the tutor, to work on a case-based scenario that works as a problem they might see in the future. The group will analyze the case, and determine the learning objectives that helps to find the best management plan for it. The group needs to work as a team on the management plan that will be eventually presented as student seminars to their colleagues. Seminar presentation is a good experience to develop their presentation and communication skills, and their ability to handle discussion. This course should parallel basic pharmacotherapy course delivery over 7 week'92s period.

Credits 1

Prerequisites

None

Co-Requisite Courses

BPH 365

BPH 367 : Pharmacotherapy of antimicrobial agents

Antimicrobials are a large group of diverse structures with myriad mechanisms of actions against bacteria, viruses, fungi, and parasites. This course will introduce the student to general classes of antimicrobial drugs. The student will understand how the biological activities will be derived from their chemical structures and physicochemical properties. Pharmacological principles of these classes will be covered afterwards, such as pharmacokinetics, mechanism of action, patterns of kill, adverse effects and mechanisms of resistance. The concept of antimicrobial stewardship will be introduced to the student to emphasize its goals; to enhance patient health outcomes, reduce resistance to antimicrobial agents, and to decrease unnecessary costs.

Credits 3

Prerequisite Courses

MIC 354

Corequisites

None

Pharmacy & Marketing

MRT 598 : Marketing for pharmacists

This course examines the underpinning theoretical concepts and applied techniques of marketing that are used in the delivery of pharmaceutical care in the for-profit and/or not-for-profit environment as well as the practical marketing strategies that can be used in day to day pharmacy management. Throughout the course, topics relevant to public policy formation and evaluation will be central to discussion. Topics will include important marketing concepts, managing service performance, advertising and promotion, significant laws affecting pharmacy practice management, consumer behavior, strategic marketing planning, segmentation, communication, pricing pharmacist services, channels of distribution and marketing ethics. Lectures will focus on theoretical concepts and examples of strategies currently being used within pharmacy and the broader health care environment. This course will be of value to pharmacy students seeking careers in pharmaceuticals companies, management, and industrial pharmacy.

Credits 3

Pharmacy Practice

PRC 356 : Pharmacy Practice and Health Care Systems

This course introduces students to the profession of pharmacy and the diversity of pharmacy-related services that relates to the modern health care system. Students will be introduced to the contribution of pharmacy to health care systems in different settings such as; community-, hospital-based. It will also enable the students to develop a more specialized range of attributes to the healthcare system. It will introduce the student to clinical pharmacy practice, patient counselling and compliance, drug utilization reviews, drug interactions, treatment of poisoning and other areas of practice. Special emphases will be on the role of pharmacist'92s in patient care and public health in Saudi Arabia-health care system.

Credits 3

Pharmacy Regulations

REG 363 : Pharmacy Regulations and Health Ethics

This course will introduce the students to pharmacy law and the regulatory aspects applicable to pharmaceutical products and the practice of pharmacy internationally. Students should learn the various laws and regulations that will govern their daily practice in connection with the principal authority that is; Saudi Food and Drug authority (SFDA). The role of such authority in drug registration, licensing and control will also be explained. Laws and regulation set by ministry of health that govern medication dispensing and control substances will be also explained.This course will teach the students the ethics related to pharmacy practice and ethical consideration in clinical trials and research. These ethics are set via rules and regulations of SFDA.

Credits 2

Philosophy

PHL 369 : Medical Ethics
This course introduces students to the ethical dimensions of clinical medicine and the related sciences. It offers them basic language and methodology to critically examine these dimensions. The course format integrates lecture and active case discussion to provide both the necessary philosophical grounding and the real-world skills sought by students.
Credits 2
Prerequisites
Semester 8, Year 4

Physics

PHU 101 : Astronomy
This elective course is designed for the students of the College of Business to fulfil part of their science requirements. The material of the course is presented in a survey manner using only pre-calculus mathematics. The covered material includes spectroscopy, telescopes, the solar system and its formation theories, the life cycle of stars, galaxies and the general structure of the universe, and an introduction to cosmology.
Credits 3
Prerequisites
None

PHU 102 : Science of Energy and the Environment
This elective course is designed for College of Business students to fulfil part of their science requirements. The material of the course is presented in an interactive manner with the students with a minimum use of mathematics. The course material covers topics ranging from basic energy concepts to fossil fuels, including oil and gas, renewable and nuclear energy sources and usage. The course also covers the environmental issues as they pertain to the Kingdom of Saudi Arabia, the Gulf region and globally.
Credits 3
Prerequisites
None

PHU 103 : Mechanics and Waves for Engineers
The material of this course requires knowledge of differential and integral calculus. The covered material includes the basics of vectors, kinematics, Newtonian Mechanics, energy and momentum conservation, harmonic motion, mechanical waves, and sound.
Credits 3
Prerequisite or Corequisite
MAT 101

PHU 103 L : Mechanics and Waves for Engineers Labs
This material constitutes the laboratory related to the course PHU 103.
Credits 1
Prerequisite or Corequisite
PHU 103

PHU 124 : Electromagnetism and Waves for Engineers
The material of this course requires knowledge of differential and integral calculus. The covered material includes the basics of electricity and magnetism, electromagnetic radiation, and optics.
Credits 3
Prerequisite Courses
PHU 103

PHU 124 L : Electromagnetism and Waves for Engineers Labs
This material constitutes the laboratory related to the course PHU 124.
Credits 1
Prerequisite or Corequisite
PHU 124

PHU 205 : Mechanics for Life Sciences
The material of the course is Algebra based. The covered material includes the basics of vectors, kinematics, Newtonian Mechanics, solids/fluids, harmonic motion and mechanical waves.
Credits 4
Lab Hours 1
Lecture Hours 3
Prerequisites
None

PHU 205 L : Mechanics for Life Sciences
This constitutes the laboratory related to the course PHU 205.
Credits 1
Prerequisite or Corequisite
PHU 205

PHU 216 : Electromagnetism and Optics for Life Sciences

The material of the course is Algebra based. The covered material includes the basics of electricity and magnetism, electromagnetic radiation, and optics.

Credits 4

Lab Hours 1

Lecture Hours 3

Prerequisite Courses

PHU 205

PHU 216 L : Electromagnetism and Optics for Life Sciences Labs

This material constitutes the laboratory related to the course PHU 216.

Credits 1

Prerequisite or Corequisite

PHU 216

PPHYE 101 : Preparatory Physics for Engineering and Science I

This course is designed to give students a solid foundation in basic physics as a preparation for undergraduate studies. The course includes a mandatory laboratory that includes a set of experiments that run parallel to the theoretical materials covered in class. Topics include Newtonian mechanics, the physical concepts of force and motion, energy, energy transformation, conservation laws.

Credits 3

Corequisites

Pre-Calculus

PPHYE 112 : Preparatory Physics for Engineering and Science II

This course is designed to give students a solid foundation in basic physics as a preparation for undergraduate studies. The course includes a mandatory laboratory that includes a set of experiments that run parallel to the theoretical materials covered in class. Topics include the basics of electrostatics, simple circuits, magnetism, electrometric waves, and the electromagnetic spectrum.

Credits 3

Prerequisite Courses

PPC 101

PPHYE 101

PPHYM 112 : Preparatory Physics for Medicine

This course is designed to give students a solid foundation in basic physics, as it relates to the human body, as a preparation for undergraduate studies. The covered material will include the basics of mechanics, thermodynamics, electricity and electromagnetism, and modern physics covering basic concepts of quantum physics, atomic nucleus and radioactivity.

Credits 3

Prerequisite Courses

PAM 101

PPHYM 112/PHU 113 : Physics for medicine and health sciences

This is an introductory physics course required from students applying for the medicine and life sciences pathway in the University Preparatory Program (UPP) of Alfaisal University. The covered material will include the basics of mechanics, thermodynamics, electricity and electromagnetism, optics, wave optics, and modern physics covering basic concepts of quantum physics, atomic nucleus and radioactivity.

Credits 3

Prerequisites

None

Physiology

PHY 234 : Physiology

The course is designed to expand physiological concepts gained from human structure and function courses in the first year. It will teach the students basic principles of human physiology that keeps the human body functioning and in homeostasis. The principal level of focus on physiology in this course is at various levels of organization, ranging from cellular and molecular to tissue and organ system levels. The physiology of cardiovascular, endocrine, central nervous systems, respiratory, gastrointestinal tract, and others will be covered in detail where emphasis will be placed on understanding the integrated regulation of various body processes among these major systems. Such knowledge will prepare the students to the pathophysiological basis of diseases incorporated into pharmacotherapy courses starting in the fourth year. This course will run parallel to the anatomy and histology course with regard to the sequence of the covered subjects.

Credits 3

Prerequisites

PHSF 101 112

Co-Requisite Courses

ANT 233

Primary Health Care & Rural Health

COM 116 : Primary Health Care & Rural Health

Upon completion, students will be able to define the role of community medicine in promoting healthcare in the KSA, conceptually define the meaning and purposes of primary healthcare and community medicine and relate them to the healthcare systems in the Kingdom, realize the role of the primary care physician in community health and healthcare, develop supportive attitudes towards health concerns of local communities, learn about some of the scientific perspectives and basic methods of conducting community research relevant to common health problems in local communities and understand the role of epidemiology, and biostatistics in conducting roper community-based research.

Credits 2

Prerequisites

None

COM 358 : Family Medicine

This course identifies clinical presentations common to the field of family medicine; understand concept of preventive medicine and importance of family medicine in implementing community based disease prevention, cancer screening and health promotion programs. Apply family medicine oriented diagnostic approach; introduce students to inter-professional multidisciplinary team approach in the management family medicine patients. Create opportunities to acquire knowledge and skills pertinent to the specialty of family medicine through self-reflection and previously studied courses. Appreciate family physicians important roles as health advocates and resources for their practice and community and relationship in managing patients with on-going health concerns.

Credits 2

Prerequisite Courses

COM 116

COM 366 : Family Medicine-II (Women's H, Prenatal C, Geriatrics, Palliative and Alternative M)

The objective of this course is to introduce undergraduate medical learners to family medicine as a clinical yet general medical course. This course covers a broad range of acute and chronic clinical presentations and involves the care of diverse patient population of both genders and across the life cycle with the notion in mind of providing holistic health care to the entire community.

Credits 2

Prerequisite Courses

COM 116
COM 358

Psychology

PSY 101 : Introduction to Psychology

The course introduces psychology and its key concepts, theories, research methods, and contributions to the understanding of human behavior. Topics include the nervous system, perception, motivation, learning and memory, social behavior, personality, developmental, and clinical psychology. The course also introduces past and current theories and contributions of eminent psychologists.

Credits 3

Prerequisites

None

Public Policy

GPP 450 : Policy Making Process

Regardless of where one sits in the policy system, there are opportunities to create change'97 intentionally and unintentionally. This course aims to familiarize students with the public policy process, equipping students with analytical frameworks and practical tools to improve their engagement with the process through their work as elected public officials, public agency managers, nonprofit executives, policy analysts, street-level service providers and/or participatory citizens. The first component of the course will equip students with terminology and frameworks to help make sense of the complex moving parts that make up the policy and implementation system/subsystem. The second component of the course focuses in on three different levels of the policy ecosystem: policy fields, organizations and frontlines. Finally, the third component of the course concludes with an exploration of policy analysis and policy learning.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

GPP 451 : Health and Environment Policy: A Global Perspective

This course will explore how health and environment problems are controlled within Saudi Arabia and abroad. We will examine the policies and practices of environment and health and look upon various government programs that are established, organized, and operated to prevent or control hazards in the community, and the legal and regulatory framework behind them. This course will also provide an overview of the development, structure, function, and implementation of health and environment policy at local, national, and global scales. Case-examples will provide an in-depth understanding of health and environment policy. This course will shed enough light on the health policy, i.e., the various ways in which the government plays a role in health and in the provision of health care and it will look upon the policies that relate to the environment.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

GPP 452 : Managing Government Organizations

This course examines the enduring and changing nature of governance from both theoretical and practical perspectives. It will introduce you to a wide range of concepts in public policy. It will look into how policy-makers seek to formulate and implement public policy effectively and legitimately in the face of evolving state structures and fast shifting global context so as to serve the public good. This course will focus on governmental organization management in terms of organizational theory and management challenges facing organizations that carry out public purposes. We will also look into traditional public sector organizations, government funded bureaus and agencies that deliver public services directly to citizens but will also consider other organizations that operate in the public sector (e.g. nonprofits, private firms under contract). We will examine the backbone of public management - organizations - and ways to evaluate and understand organizations. We will also pull from organizational theory and practice to distill the core similarities and differences between public, nonprofit and private organizations.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

GPP 453 : Public Policy and Social Issues

This course will cover a wide range of topics, from the norms and values informing democratic policymaking to the basics of cost-benefit and other tools of policy analysis. This course will also examine a variety of issues considered to be '93social problems. The course will look into how particular issues came to be considered as '93problems'94 in the first place, while other issues do not. Though emphases will differ, all sections will address the institutional arrangements for making public policy decisions, the role of various actors-including nonprofit and private-sector professionals-in shaping policy outcomes, and the fundamentals (and limits) of analytic approaches to public policy.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

GPP 454 : Corporate Governance and Regulations
The value of a firm depends on good corporate governance practices protecting investors. Greater protection of shareholders lowers the cost of capital due to better risk mitigation. Thus, the set of governance practices, rules, and regulations that promote private sector investment and jobs creation also promote firm value. Topics include the role and responsibilities of shareholders (principals), the boards of directors (the principals' representatives), and the executive management (agent). They also include executive compensation policies, boardroom structure and practices, corporate disclosure and transparency, and the value of the shareholder vote. The course looks into corporate pyramidal structures, hostile takeovers, and the failure of the market for corporate control. It examines the role of financial institutions and credit rating agencies in promoting corporate governance, and how transparency, accountability, responsibility, and fair and equitable treatment of all shareholders help improve corporate governance and reduce agency conflicts between principals, management, and the board of directors.
Credits 3
Prerequisite Courses
LAW 433
LAW 434
LAW 436
LAW 437
LAW 438
Corequisites
NONE

GPP 456 : Ethics and Politics of Public Service
This course examines ethical and political questions that arise in doing public service work, whether volunteering, service learning, humanitarian endeavours overseas, or public service professions such as medicine and teaching. What motives do people have to engage in public service work? Are self-interested motives troublesome? What is the connection between service work and justice? Should the government or schools require citizens or students to perform service work? Is mandatory service an oxymoron? This course will aid you conduct a critical investigation of ethics, ideals and values commonly attributed to public service in Saudi Arabia.
Credits 3
Prerequisite Courses
LAW 433
LAW 434
LAW 436
LAW 437
LAW 438
Corequisites
NONE

GPP 459 : Advanced Topics in Public Policy: International Development

This course introduces undergraduates to the basic theory, institutional architecture, and practice of international development. We take an applied, interdisciplinary approach to some of the '93big questions'94 in our field: What does development mean? Why are some countries persistently poorer than others? How have different stakeholders sought to address the challenges of development in the past, and how are they approaching these challenges now? Then we will look into how policy students can explore the complexities of the policy-making process from the perspective of specific policy topics. Students will learn about and discuss subject- based issues in a seminar format led by faculty and policy experts. Site visits to federal agencies, guest speakers, and round table sessions ensure that students receive a variety of real-world perspectives on their chosen policy area. This course will also examine the way that policies, politics, and the kingdom intersect and coevolve. To address these concepts, the course will draw on theoretical and empirical literature from comparative public policy, institutionalism, public administration, governance theory, and political sociology.

Credits 3

Prerequisite Courses

LAW 433
LAW 434
LAW 436
LAW 437
LAW 438

Corequisites

NONE

Renal Block

REN 123 : Renal Block

This is a multidisciplinary course (block) integrating topics in basic and applied clinical anatomy, histology, embryology and physiology of renal system.

Credits 3

Prerequisites

None

Co-Requisite Courses

CVP 121
HLS 122

REN 364 : Renal Block

The Renal course in Phase II is directed towards the learning and understanding the disorders of the kidney and urogenital system and their treatment. This is a multidisciplinary block integrating topics in basic and applied pathology, pharmacology, immunology, microbiology, clinical pathology, nephrology, urology, radiology, and clinical medicine.

Credits 2

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242

Co-Requisite Courses

GIT 353
END 362
REP 363

Reproductive Block

REP 232 : Reproductive Block

By the end of the block students should be able to know embryonic development, fetal maturation, and perinatal changes of the reproductive system, know the structure of female reproductive organs, including breast, know the functions of female reproductive system (eg, menstrual cycle, puberty, and menopause), know the structure of the male reproductive organs, Know the functions of the male reproductive system (eg, spermatogenesis, puberty) and understand the hypothalamic-pituitary-gonadal axis, sex steroids, and gestational Hormones.

Credits 2

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123

Corequisites

END 231, POD 233

REP 363 : Reproductive Block and Breast
This course examines the functions and regulation of hormones related with the female reproductive system. It describes the epidemiology, risk factors, pathogenesis and diagnostic workup of disorders of female reproductive system and breast. It describes the epidemiology, risk factors, pathological classifications and morphology of tumors of female reproductive organs and breast.
Credits 2
Prerequisite Courses
FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
Corequisites
GIT 353, END 363, REN 364

Research Methodology

LSR 302 : Research Methodology
The course aims to provide students with the basic concepts of research, types of research and the research method. The ultimate aim of this course is to equip students with skills on how to formulate a research hypothesis, review literature, design research projects, acquire & analyze data and report the research findings. The students will also be introduced to research writing and ethical issues associated with research.
Credits 3
Prerequisite Courses
ENG 112

LSR 421 : Life Science Research Project I
The courses represent a two-semester-term individually guided investigation project involving laboratory work and/or computational investigation in some aspect of Biomedical Science. The background, results and conclusions of the study to be reported in the form of an oral presentation and progress report by the end of Fall semester, and a thesis and final defense at the end of the course.
Credits 3
Prerequisite Courses
LSR 302

LSR 422 : Life Science Research Project II
The courses represent a two-semester-term individually guided investigation project involving laboratory work and/or computational investigation in some aspect of Biomedical Science. The background, results and conclusions of the study to be reported in the form of an oral presentation and progress report by the end of Fall semester, and a thesis and final defense at the end of the course.
Credits 3
Prerequisite Courses
LSR 302

LSR 423 : Integrative Life Science Research Seminar
LSR 423 course is designed to train students to summarize results obtained during student research project courses, built up scientific hypotheses and discuss their merits in group seminars with assessment of the subsequent self-directed learning in oral presentations, coursework or undergraduate thesis writing and defence. This course develops transferable skills, associated with analysis and presentation of laboratory-based experimental research in Life Sciences in the form of poster and podium presentation.
Credits 3
Prerequisites
BIO 357; BIO 358

Respiratory Block

RES 5X6 B : Research project

Students will enroll themselves in a graduation research project during semester 10 of the fifth year. The aim of the course is to give the students an opportunity to perform a research project within the field of an emerging area of pharmaceutical sciences/ practice of interest under direct supervision of a faculty member from the college of pharmacy. Students will apply research knowledge and skills to design, implement, show independence, critical and creative thinking, and to execute their research projects. Students will summarize the results in a research report and present the results of the project to the academic community as a poster presentation in the '93Research week'94.

Credits 3

Prerequisite Courses

BST 245

Corequisites

None

Self-Care and Non-Prescription Drugs

SCR 364 : Self-care and Non-Prescription Drugs

Self-care is the independent act of preventing, diagnosing, and treating one'92s own health conditions without seeking medical advice. This practice includes, but is not limited to, general care measures and dispensing of nonprescription drugs. This course is designed to prepare future pharmacists to assess whether patients are candidates for self-care and to recommend appropriate self-care measures for commonly encountered self-manageable conditions. The students will learn how to assess, manage and recommend over-the-counter OTC medications or natural medicines for the following common complaints/disorders: cough, common cold, pain, allergic rhinitis, nausea, vomiting, dyspepsia, muscle injury, dermatologic disorders (acne, insect bites, and sunburn), wound care, and many others. Students will apply the concepts acquired from this course to different courses such as integrated pharmacotherapy '93case-based seminars'94 and patient care and health system management laboratory courses.

Credits 1

Prerequisites

BPH 365

Corequisites

None

Sociology

SOC 101 : Introduction to Sociology

Introduces the basic concepts in the field, research methods, and theories. It addresses the interrelations among human societies, individuals, groups and organizations. Topics include social interaction, social institutions, social stratification, community, and social change strategies. This course elaborates on the social structure of Saudi Arabian society, its social institutions and stages of social transformation.

Credits 3

Prerequisites

None

Statistics

STA 211 : Probability and Statistics

STA 211 introduces the basics of probability and statistics as used in sciences. It covers introduction to probability, random variables, some common probability distributions, random vectors, sample statistics, regression, and applications in experimental sciences.

Credits 3

Prerequisite Courses

MAT 116

STA 212 : Probability and Statistics for Engineers

The course is designed to teach students the basics of probability and statistics as used in engineering and the sciences. The course covers introduction to probability theory, random variables, statistics, and regression.

Credits 3

Prerequisite Courses

MAT 112

Sub-Specialty Medicine

IMD 591 : Sub-Specialty Medicine

At the end of this clerkship, the student should understand the relationship between the basic and clinical sciences as it applies to the fields of cardiovascular medicine, hematology/oncology. Demonstrate the ability to assess cardiology/cardiac surgery, hematology/oncology patients and differentiate the need for urgent versus non-urgent care, employ viable treatment plans within the confines of clinical data available, and within the socioeconomic capability of those patients.

Credits 9

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364
MED 471
PED 472
SUR 481
GYN 482

Corequisites

INS 592, SSP 5X1, AMB 5X2

Surgical Subspecialty

SSP 5X1 : Surgical Sub-Specialty

This course consists of three rotations in Ophthalmology, Otolaryngology '96 Head and Neck Surgery (ENT) and Orthopedics. By the end of this clerkship the students will improve their skills and techniques of head and neck examinations, understand the purpose, values and results of numerous laboratory assessments of various otolaryngologic disorders, identify eye movement systems, describe the types of the refractive error, discuss various methods of measuring visual acuity, understand how to record visual acuity, assess patients with orthopedic problems.

Credits 9

Prerequisite Courses

FON 111
MSK 112
GIT 113
CVP 121
HLS 122
REN 123
END 231
REP 232
POD 233
NEU 241
HNS 242
CVP 351
HEM 352
MSI 361
GIT 353
REN 123
END 362
REP 363
REN 364
MED 471
PED 472
SUR 481
GYN 482

Corequisites

IMD 591, INS 592, AMB 5X2

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