

College of Science and General Studies Degree Programs

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

Vice Dean for Academic & 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).

Bachelor of Science in Life Sciences Program Curriculum

Study Plan: Biological Sciences & Nanotechnology						
1 st Year	Fall (19 CRHs)			Spring (19 CRHs)		
	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 ***	English Elective	(3+0)
	ISL 101	Islamic Studies I	(2+0)	***	Islamic Elective	(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)	***	Free Elective	(2+0)
				***	Free Elective	(3+0)
	Fall (18 CRHs)			Spring (17 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)
	BIO 315	Genetics	(3+0)	***	Advanced Sci. Elective II	(3+0)
	***	Advanced Sci. Elective I	(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 439	Clinical Laboratory Science	(3+0)	***	Advanced Sci. Elective III	(3+0)
	BSN 430	Nanomaterials & Nanotechnology	(3+0)	***	Advanced Sci. Elective IV	(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)

*** 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 ***	English Elective	(3+0)
	ISL 101	Islamic Studies I	(2+0)	***	Islamic Elective	(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)	***	Free Elective	(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 325	Conservation Biology	(3+0)
	CHM 310	Instrumental Analysis	(3+1)	LSR 302	Research Methodology	(3+0)
	ENV 305	Environmental Health	(3+0)	ENV 330	Energy & Sustainability	(3+0)
	BIO 315	Genetics	(3+0)	ENV 410	Environmental Monitoring	(3+0)
	***	Advanced Sci. Elective I	(3+0)	***	Advanced Sci. 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
	ENV 420	Waste Management	(3+0)	***	Advanced Sci. Elective III	(3+0)
	ENV 425	Environ. Policy & Economics	(3+0)	***	Advanced Sci. Elective IV	(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)

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