Educational courses

Bachelor of Geography Program:

The department teaches geography at the undergraduate level according to the credit hour system distributed over eight semesters.

Educational plan for a Bachelor of Geography

Course No.	Course Title	level	Accredited units
GEO 113	Introduction to Physical Geography	1	3
GEO 122	Introduction to Human Geography	1	3
IC 101	Introduction to Islamic culture	1	2
CS 101	Introduction to computers	1	3
PSYCH 101	Thinking skills and learning styles	1	2
HIST173	National history	2	2
GEO 427	Geopolitics	2	2
ENG 328	English speaking skills	2	2

ARAB199	Lexicology	2	2
ENG 304	English speaking skills	2	2
ENG 305	Principles of Language Learning and Teaching	2	2
FRA 103	Introduction to the French language	2	2
HIST366	Present Islamic world	2	2
GEO 415	Astrogeography	2	2
GEO 428	Geographic thought	2	2
GEO 102	Geographical texts in English (1)	2	2
GEO 334	Regional planning	2	2
GEO 112	climatic geography	2	3
HIST245	Islamic civilization	2	2
GEO 341	Environmental studies	2	2
IC 102	Islam and community building	2	2
ARAB 138	Linguistic library	2	2
SOC 318	Social security	2	2
ARAB 447	Media language	2	2
GEO 221	Population geography	3	2
GEO 252	Digital Geography	3	2

ARAB103	Arab Liberation	3	2
MGMT103	Communication skills	3	2
GEO 213	Introduction to Geology	4	2
IC 104	Foundations of the political system in Islam	4	2
GEO 354	Geological maps	5	2
GEO 314	Geomorphology	5	3
GEO 324	Geography of industry and energy	5	2
GEO 332	Urban geography	5	2
GEO 342	Climate changes	6	2
GEO 343	Dry regions	6	2
GEO 434	sustainable development	7	2
GEO 464	Applications of Geographic Information Systems in Planning	7	3
GEO 471	Field study	7	3
GEO 472	Application project (1)	7	3
GEO 425	Geography of transport and trade	8	3
SOC 410	Social issues	8	2

Master of Science in Geography and Environment

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
a. Compulsory courses (30 units)					
Geo 611	Natural and Human Geography	2	1	3	-
Geo 612	Geographic Information System	2	1	3	-
Geo 613	Remote Sensing Technology	2	1	3	-
Geo 614	Environmental Impact Assessment	2	1	3	-
Geo 615	Basics of Environmental Science	2	1	3	-
Geo 616	Application of Geographic Information System in Environmental Planning	2	1	3	-
Geo 617	Environmental Management	2	1	3	-
Geo 618	Safety and Environmental security	2	1	3	-
Geo 620	Interactive Digital maps	2	1	3	-
Geo 633	Special topic in the environment	2	1	3	-
b. Elective courses (9 units)					
Geo 619	Ecological Systems	2	1	3	-
Geo 621	Applied climate changes	2	1	3	-
Geo 622	Natural resources management	2	1	3	-
CE 676	Solid Waste management	3	-	3	-
CAVM 545	Cultivation and coordination of cities	2	1	3	-
c. Thesis (6 units)					
Geo 699	Research project	-	-	6	-
Total				**45**	

PhD in Environmental Studies

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
Compulsory courses (19 units)					
Geo 701	Contemporary trends in geography and the environment	2	-	2	-
Geo 702	Remote sensing applications in geography and the environment	2	1	3	-
Geo 703	Environmental safety and security	2	-	2	-
Geo 704	Environmental assessment	2	1	3	-
Geo 705	Applied statistical analysis in geography and the environment	2	1	3	-
Geo 706	GIS applications in geography and environment	2	1	3	-
Geo 707	Field study in geography and environment	1	2	3	
Geo 708	Special topic in the environment	1	2	3	-
Thesis (24 units)					
Geo 799	Thesis	-	-	24	-
Total				**46**	

Bachelor of Civil Engineering

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
CE 202	Mechanics of Materials	1	2	3	-
CE 205	Properties of Structural Materials	1	1	2	-
CE 206	Structural Analysis	1	2	3	-
CE 212	Plane Surveying	2	1	3	-
CE 230	Fluid Mechanics	1	2	3	-
CE 231	Fluid Mechanics Laboratory	-	1	1	-
CE 306	Structural Analysis - 2	1	1	2	
CE 307	Properties and Testing of Concrete	1	1	2	-
CE 318	Design of Reinforced Concrete Structures	1	3	4	-
CE 320	Construction Engineering	1	2	3	
CE 330	Hydraulics	1	1	2	
CE 331	Hydrology	1	2	3	
CE 343	Transportation and Traffic Engineering	1	2	3	
CE 353	Geotechnical Engineering	1	2	3	
CE 354	Geotechnical Engineering Laboratory	1	-	1	
CE 363	Foundation Engineering	1	2	3	
CE 370	Water and Wastewater Engineering	1	3	4	
CE 375	Steel Structures Design	1	2	3	
CE 447	Highway Engineering	1	1	2	
CE 491	Senior Design Project - 1	2	1	3	

GE 201	Statics	1	2	3	
GE 202	Dynamics	1	2	3	
GEO 285	Engineering Geology	1	1	2	
ME 327	Building Thermal Loads	1	1	2	
GE406	Summer Training	-	-	2	
GE407	Cooperative Training	-	-	7	
CE 492	Senior Design Project- 2	1	1	2	

Master of Civil Engineering

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
Math 621	Engineering mathematics	1	2	3	-
Ham 605	Modeling and Simulation of Engineering Systems	1	2	3	-
Ham 608	Laboratory methods and analysis	1	2	3	
Hmad 600	Concrete technology	1	2	3	
Hmad 601	Advanced Structural Analysis	1	2	3	
Hmad 602	Finite element method in structural analysis	1	2	3	
Hmad 603	Plate theory and crustal structures	1	2	3	
Hmad 604	Structural dynamics	1	2	3	
Hmad 610	Advanced concrete design	1	2	3	
Ham 699	Master's thesis			6	

Bachelor of Electrical Engineering

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
REE635	Energy efficiency			3	-
REE611	Introduction to Renewable Energy Engineering			3	-
ME 350	Mechanics of materials			3	
REE 621	Solar thermal applications			3	
REE622	concentrated solar power plants			3	
REE 630	Energy conversion			3	
REE 640	Biomass energy			3	
REE 650	Wind energy			3	
REE 660	photovoltaic energy systems			3	
REE 665	Renewable energy electrical systems			3	
REE 670	Geothermal energy			3	
REE 680	Renewable Energy Economics and Planning			3	
REE 690	Selected Topics in Renewable Energy			3	
REE 699	message			6	
MGMT 411	Developing management skills			3	
EE457	Digital control systems			3	
CEN 354	Principles of network engineering			3	
EE 464	Coding for transmission error control			3	

EE 491	Graduation project (1)			3	
EE 437	Power Electronics Lab			1	
GE 406	Summer training			2	
EE 407	Cooperative training			7	
EE 492	Graduation Project (2)			2	
EE 483	Principles of photovoltaic energy systems			3	
EE 205	Electrical circuits laboratory			1	
EE 210	Logical Design Lab			1	
EE482	Design of electrical protection systems			3	
EE 339	electrical machines			2	
EE 313	Electronics Lab (1)			1	
EE446	High voltage engineering			1	
EE440	Design of industrial power systems			3	
EE 451	Systems simulation			2	
EE 498	Graduation project--1			2	
EE432	Power electronics			2	
EE 455	Applied control			2	
EE 443	Operation and control of electrical power systems			3	
EE 499	Graduation project--2			3	
EE 400	Graduation project			3	
EE 340	Principles of electrical power systems			3	
EE 353	Microprocessors and matching circuits			3	

Master of Science in Electrical Engineering

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
EE 618	Advanced Industrial Electronics	3	0	3	-
EE 619	Systems on Chip Design	3	0	3	-
EE 620	Optimization of communication networks	2	1	3	
EE 685	Introduction to Nanobiotechnology and Sensors	3	0	2	
EE 621	Statistical communication systems	3	0	3	
EE 622	Advanced digital communications systems	3	0	3	
EE 623	Digital signal processing	2	2	3	
EE 624	Digital image processing	2	2	2	
EE 625	Cellular and mobile communications systems	3	0	2	
EE 626	Antennas and Radio Wave Propagation	3	0	3	
EE 627	Data encryption and network security	3	0	3	
EE 628	Fiber optic communications	3	0	3	
EE 629	Selected Topics in Communications Engineering	3	0	3	
EE 651	Artificial Intelligence Technologies in Power Engineering	3	0	3	
EE 652	Control of power systems	3	0	3	
EE 699	- The message or research project	6	-	6	

Bachelor of Mechanical Engineering

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
ME 633	Advanced materials mechanics			3	-
ME 634	Polymer manufacturing methods			3	-
ME 635	Design and simulation of manufacturing systems			3	
ME 636	Computer-aided manufacturing applications			3	
ME333	Building energy and environment			2	
ME667	Design of digital control systems			3	
ME 668	Optimal control			3	
ME 669	Flight Dynamics and Control			3	
ME 670	Selected Topics in Mechanical Power Engineering			3	
ME 671	Advanced heat transfer			3	
ME 672	Advanced Thermodynamics			3	
ME 673	Advanced Fluid Mechanics			3	
ME 674	Energy conversions			3	
ME 675	Thermal power plants			3	
ME 676	Turbomachinery			3	
ME 677	Safety and environmental engineering			3	
ME 678	Combustion and fuel			3	
ME 679	Solar energy systems engineering			3	

ME 680	Water torture			3	
ME 699	Scientific dissertation			6	
ME 661	Advanced dynamics and control systems			3	
ME 662	Advanced Mechanical Vibrations			3	
ME 637	Design for manufacturing			3	
ME 638	Automation in manufacturing			3	
ME 639	Fracture mechanics			3	
ME 640	Applications of precise elements			3	
ME 659	Mechatronics systems			3	
ME 660	Selected Topics in Systems Dynamics and Control			3	
ME 496	Energy efficiency basics			3	
ME 400	Graduation project			3	
ME 425	Solar energy			3	
ME 380	Fluid mechanics			4	

Master of Science in Renewable Energy Engineering

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
ME 371	Thermodynamics 1			3	-
ME 395	Heat transfer			3	-
EE 318	Basics of electrical circuits			3	
EE 339	Electrical machines			3	
MAT 621	Engineering mathematics			3	
HAM 605	Modeling and protection of engineering systems			3	
HAM 608	Laboratory methods and analysis			3	
HAM 611	Introduction to Renewable Energy Engineering			3	
HAM 621	Solar thermal energy applications			3	
HAM 622	Concentrated solar power plants			3	
HAM 630	Energy conversion			3	
HAM 633	Energy storage systems			3	
HAM 635	Energy and environment			3	
HAM 640	Energy efficiency			6	
HAM 699	- The message			6	

Master of Science in Animal Production

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
APB 521	Advanced Animal Breeding and Genetics			3	-
APB 522	Advanced Animal Nutrition			3	-
APB 523	Farm Animal Physiology			3	
APB 529	Advanced Poultry Breeding and Genetics			3	
APB 524	Advanced Poultry Production			3	
APB 526	Advanced Poultry Nutrition			3	
APB 527	Advanced Poultry Physiology			3	
PPP 521	Economic Insects (Advanced)			3	
PPP 522	Pesticide Chemistry and Toxicology			3	
PPP 523	Parasitic Physiology			3	
PPP 524	Biotechnology in Plants			3	
PPP 525	Analytical Chemistry (Advanced)			3	
PPP 526	Instrumentation and Analytical Methods			3	
PAP 611	Biochemistry (Advanced)			3	
PAP 612	Experimental Design and Analysis			3	
PAP 614	Plant Physiology (Advanced)			3	
PPP 513	Plant Diseases (Advanced)			3	
PPP 531	Integrated Pest Management			3	
PPP 540	Pathogenic Fungi of Plants			3	
PPP 542	Special Studies			3	
PPP 552	Advanced Flower and Ornamental Plant Production			3	
PPP 548	Organic and Hydroponic Farming			3	

Master of Science in Plant Protection

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
PPP 511	Plant Biochemistry (Advanced)			3	-
PPP 512	Design and analysis of experiments			3	-
PPP 513	Advanced plant diseases			3	
PPP 521	Economic insects (advanced)			3	
PPP 522	Chemistry and Toxicity of Pesticides (Advanced)			3	
PPP 523	Childhood physiology			3	
PPP 600	Message			3	
PPP 531	Integrated pest management			3	
PPP 532	Physiology and Biochemistry Insects			3	
PPP 533	Spiders			3	
PPP 534	Insect classification			3	
PPP 535	plant nematodes			3	
PPP 536	plant pathogenic bacteria			3	
PPP 537	Plant viruses			3	
PPP 538	Biocontrol			3	
PPP 539	Pesticide analysis			3	
PPP 540	plant pathogenic fungi			3	
PPP 541	Animal pest environment			3	
PPP 542	Special studies			3	

Master of Science in Plant Production

Course No.	Course Title	Credits			prerequisite
		Th.	Pr.	Total	
PPP 511	Plant Biochemistry (Advanced)			3	-
PPP 512	Design and analysis of experiments			3	-
PPP 514	Plant Physiology (Advanced)			3	
PPP 524	Plant biotechnology			3	
PPP 525	Chemistry and Toxicity of Pesticides (Advanced)			3	
PPP 526	Analysis devices and methods			3	
PPP 600	Message			3	
PPP 531	Integrated pest management			3	
PPP 543	Vegetable crop production			3	
PPP 544	Pastures and forage crops			3	
PPP 545	Urban afforestation and landscaping			3	
PPP 546	Plant Breeding (Advanced)			3	
PPP 547	Fertilizers and soil fertility			3	
PPP 548	Organic and hydroponic farming			3	
PPP 549	Field Crop Production (Advanced)			3	
PPP 550	The relationship between soil microbes and plants			3	
PPP 551	Postharvest techniques and physiology			3	
PPP 552	Production of flower and ornamental plants			3	
PPP 553	Fruit Crop Production (Advanced)			3	
PPP 554	Advanced palm production			3	

PPP 555	Irrigation systems			3	
PPP 556	Agricultural Production Economics			3	
PPP 557	(Agriculture and Environment (Advanced			3	
PPP 558	Plant tissue culture			3	
PPP 559	Special studies			3	