

Curriculum for Bachelor of Physics Program

Description of the plan:

The student should successfully 186 credit hours before graduation. The undergraduate study plan is distributed on the following semesters:

First level:

Code No.	Course Title	No. of units	Pre-requisite
Islam 101	Introduction to Islamic Culture	2 (2,0,0)	-
Math 1050	Calculus-1 (differentiations)	4 (2,2,0)	-
Eng 1210	Reading Skill	5 (2,3,0)	-
Eng 1220	Writing Skill	5 (2,3,0)	-
Total		16 (8,8,0)	

Second level:

Code No.	Course Title	No. of units	Pre-requisite
Arab 101	Arabic Language Skills	2 (2,0,0)	-
Math 1060	Calculus 2 (Integration)	4 (2,2,0)	Math 1050
Eng 1230	Listening Skill	5 (2,3,0)	-
Tech 1400	Principal of computer	3 (2,0,1)	-
Total		14 (8,5,1)	

Third level:

Code No.	Course Title	No. of units	Pre-requisite
Phys 1010	General Physics (1)	5 (3,1,1)	-
Sci 1400	Communication Skills	2 (2,0,0)	-
Eng 1604	English for science	5 (4,0,1)	-
Eng 1606	English for academic purpose	4 (2,2,0)	-
Total		16 (11,3,2)	

Fourth level:

Code No.	Course Title	No. of units	Pre-requisite
Chem 2010	General Chemistry (1)	5 (4,0,1)	-
Phys 2110	Optics (1)	4 (4,0,0)	Phys 1010
Phys 2210	Electromagnetics (1)	4 (4,0,0)	Phys 1010
Math 2230	Algebra and Analytical Geometry for Physics and Statistic Students	4 (4,0,0)	-
Total		17(16,0,1)	

Fifth level:

Code No.	Course Title	No. of units	Pre-requisite
Phys 2140	Classical Mechanics (1)	4 (4,0,0)	Phys 1010
Phys 2190	Electricity and Optics Lab.	2 (0,0,2)	Phys 1010
Phys 2250	Optics (2)	4 (4,0,0)	Phys 2110
Phys 2410	Thermodynamics	4 (4,0,0)	Phys 1010 Math 1060
Chem 2170 Or Chem 2470	Selective course from outside the department	3 (3,0,0)	Chem 2010
Total		17 (15,0,2)	

Sixth level:

Code No.	Course Title	No. of units	Pre-requisite
Islam 102	Islam and community building (University pr-requisites)	2 (2,0,0)	-
Phys 2430	Electromagnetic (2)	4 (4,0,0)	Phys 2210
Phys 2930	Optics Lab.	2 (0,0,2)	Phys 2250
Phys 3150	Classical Mechanics (2)	4 (4,0,0)	Phys 2140
Math 3320	Calculus (III)	4 (4,0,0)	Math 1060
Total		16 (14,0,2)	

Seventh level:

Code No.	Course Title	No. of units	Pre-requisite
Islam 103	(University pr-requisites)	2 (2,0,0)	-
Arab 103	(University pr-requisites)	2 (2,0,0)	-
Phys 3010	Mathematical Physics (1)	4 (4,0,0)	-
Math 3410	Differential equation For Physics	4 (4,0,0)	Math 3320
Phys 3920	Electromagnetic Lab.	2 (0,0,2)	Phys 2430

	Free course	3 (3,0,0)	
Total		17 (15,0,2)	

Eighth level:

Code No.	Course Title	No. of units	Pre-requisite
Islam 104	University pr-requisites	2 (2,0,0)	-
Phys 3420	Statistical Physics (1)	5 (4,1,0)	Phys 2410
Phys 3560	Quantum Mechanics (1)	5 (4,1,0)	-
Phys 3710	Solid State Physics (1)	5 (4,1,0)	-
Total		17 (14,3,0)	

Ninth level:

Code No.	Course Title	No. of units	Pre-requisite
Phys 3020	Mathematical Physics (2)	5 (4,1,0)	Phys 3010
Phys 3760	Atomic Physics	4 (4,0,0)	Phys 3560
Phys 3950	Solid State Physics Lab.	2 (0,0,2)	Phys 3710
Phys 4240	Analogue electronics	4 (3,0,1)	Phys 2210
Total		15 (11,1,3)	

Field Experience

- Students after passing 145 credits, should perform field experience training for a period of seven weeks as a prerequisite to obtain a bachelor's degree.

Code No.	Course Title	No. of units	Pre-requisite
Phys 4590	Field Training	2 (0,0,6)	

Tenth level:

Code No.	Course Title	No. of units	Pre-requisite
Phys 4340	Nuclear and Particle Physics	4 (4,0,0)	Phys 3760
Phys 4590	Field Training	2 (0,0,6)	-
Phys 4960	Modern Physics Lab.	2 (0,0,2)	-
	Free course	3 (3,0,0)	
Total		11 (7,0,8)	

Eleventh level:

Code No.	Course Title	No. of units	Pre-requisite
Phys 4010	Ethics of Scientific Research	2 (2,0,0)	-
Phys 4050	Computational Physics	4 (3,0,1)	-
Phys 4560	Quantum Mechanics (2)	5 (4,1,0)	Phys 3560

Phys xxxx	Selective course from inside the department	4 (4,0,0)	
Total		15 (13,1,1)	

Twelfth level:

Code No.	Course Title	No. of units	Pre-requisite
Phys 4990	Project	3 (0,1,2)	-
Phys xxxx	Selective course from inside the department	4 (4,0,0)	
Phys xxxx	Selective course from inside the department	4 (4,0,0)	
Phys xxxx	Selective course from inside the department	4 (4,0,0)	
Total		15 (12,1,2)	

Optional courses from outside Physics department (Free courses):
The student chooses one from these courses = 3 units

Code No.	Course Title	No. of units	Pre-requisite
Chem 2170	Inorganic Chemistry	3 (3,0,0)	Chem 2010
Chem 2470	Organic Chemistry	3 (3,0,0)	Chem 2010

Requirements of Elective courses from inside Physics department:
The student chooses Four courses from these courses (one course in the Eleventh level and Three courses in the Twelfth level):

Code No.	Course Title	No. of units	Pre-requisite
Phys 4080	Bio-Physics	4 (4,0,0)	Phys 2430
Phys 4081	Medical Physics	4 (4,0,0)	Phys 2430
Phys 4190	Nanophysics	4 (4,0,0)	Phys 3710
Phys 4220	Statistical Physics (2)	4 (4,0,0)	Phys 3420
Phys 4230	Plasma Physics	4 (4,0,0)	Phys 2430
Phys 4320	Experimental Physics	4 (4,0,0)	Phys 3710
Phys 4330	Digital electronics	4 (4,0,0)	Phys 4240
Phys 4350	Laser and its application	4 (4,0,0)	Phys 3760
Phys 4360	Radiation Physics	4 (4,0,0)	Phys 4340
Phys 4720	Solid State Physics (2)	4 (4,0,0)	Phys 3710
Phys 4740	Material Science	4 (4,0,0)	Phys 3710

Phys 4750	Solar Energy Physics	4 (4,0,0)	Phys 3710
Phys 4810	Non-Crystalline Materials	4 (4,0,0)	Phys 3710
Phys 4820	Introduction to astrophysics	4 (4,0,0)	Phys 3150