

Physics Study Plan in the Department of Physics and Astronomy with Common First Year

2017 – 1439 H

1 st Semester (Common First Year)				
Course No. and Code	Course Title	Requisite		Credits (Lect.- Exer.-Pract.)
		Pre.	Syn.	
ENG 104 Or ENG 105 Or ENG 106	English Language	-	-	6
MATH 101	Differential Calculus	-	-	3
ENT 101	Entrepreneurship	-	-	1
CHEM 101	General Chemistry	-	-	4
ARAB 100	Written Skills	-	-	2
Total of Credit Hours				16

2 nd Semester (Common First Year)				
Course No. and Code	Course Title	Requisite		Credits (Lect.- Exer.-Pract.)
		Pre.	Syn.	
ENG 111 Or ENG 112 Or ENG 113	Academic English Language	-	-	6
CI 101	University skills	-	-	3
CT 101	Computer Skills	-	-	3
STAT 101	Introduction to Statistics	-	-	3
CHS 101	Fitness and healthy culture	-	-	1
Total of Credit Hours				16

(Lect.+ Exer. + Pract.) = (Lecture – Exercise – Practical)

3rd Semester

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+ Exer.+ Pract.)
PHYS 110	General Physics-1	MATH 101	PHYS 111	4(3+0+2)
PHYS 111	General Physics-2		PHYS 110	4(3+0+2)
MATH 111	Methods of Integration		-	4(3+2+0)
ASTR 102	Introduction to Stellar and Solar System		-	3(2+0+2)
Elective course from University requirement (List C)				2(2+0+0)
Total of Credit Hours				17

4th Semester

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+ Exer. + Pract.)
PHYS 201	Mathematical Physics I	MATH 111	-	3(2+2+0)
MATH 209	Differential Equations		-	4(3+2+0)
PHYS 212	Classical Mechanics I	PHYS 110	-	3(3+0+0)
PHYS 221	Electromagnetism I	PHYS 111	-	3(3+0+0)
PHYS 230	Vibrations and Waves		MATH 209	3(3+0+0)
Elective course from University requirement (List C)				2(2+0+0)
Total of Credit Hours				18

5th Semester

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+ Exer. + Pract.)
PHYS 241	Thermal Physics	PHYS 111	-	3(3+0+0)
PHYS 312	Classical Mechanics II	PHYS 212	-	3(3+0+0)
PHYS 323	Electromagnetism II	PHYS 221	-	3(3+0+0)
PHYS 331	Optics	PHYS 230	-	3(3+0+0)
PHYS 353	Modern Physics I	MATH 209	-	3(3+0+0)
PHYS 394	Electromagnetism Laboratory	PHYS 221	-	2(0+0+4)
Total of Credit Hours				17

6th Semester

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+ Exer. + Pract.)
PHYS 301	Mathematical Physics II	MATH 209	-	3(2+2+0)
PHYS 325	Electronics	PHYS 221	-	3(2+0+2)
PHYS 342	Statistical Physics	PHYS 241	-	3(3+0+0)
PHYS 371	Solid State Physics I	PHYS 353	-	3(3+0+0)
PHYS 391	Thermodynamic Laboratory	PHYS 241	-	2(0+0+4)
PHYS 395	Wave Physics Laboratory	PHYS 331	-	2(0+0+4)
Elective course from University requirement (List C)			-	2(2+0+0)
Total of Credit Hours				18

7th Semester

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+Exer.+Pract.)
PHYS 393	Modern Physics Laboratory	PHYS 353	-	2(0+0+4)
PHYS 400	Computational Physics	PHYS 301	-	2(1+0+2)
PHYS 404	Mathematical Physics III		-	3(3+0+0)
PHYS 452	Quantum Mechanics	PHYS 353	-	3(3+0+0)
PHYS 481	Nuclear physics I		PHYS 452	3(3+0+0)
PHYS 490	Research Skills	--	PHYS 400	2(0+0+4)
One Elective course from (list A)			-----	3(3+0+0)
Total of Credit Hours				18

8th Semester

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+ Exer. + Pract.)
PHYS 491	Solid state Physics laboratory	PHYS 371	-	2(0+0+4)
PHYS 492	Nuclear physics laboratory	PHYS 481	-	2(0+0+4)
PHYS 499	Research Project	PHYS 490	-	3(0+0+6)
One Elective course from (list A)			-	3(3+0+0)
One Elective course. (list B)			--	2(2+0+0)
One Elective course. (list B)			--	2(2+0+0)
Elective course from University requirement (List C)			-	2(2+0+0)
Total of Credit Hours				16

Lists of Elective Courses

(List A): Student chooses 2 courses (6 credit hours)

Course Code	Course Title	Prerequisite	Credits (Lect.+ Exer. + Pract.)
PHYS 435	Laser Physics	PHYS 331	3(3+0+0)
PHYS 460	Biophysics	PHYS 481	3(3+0+0)
PHYS 478	Material Science	PHYS 371	3(3+0+0)
PHYS 477	Energy & Environment Physics	PHYS 371	3(3+0+0)

(List B): Student chooses 2 courses (4 credit hours)

Course Code	Course Title	Prerequisite	Co-requisite	Credits (Lect.+Exer.+Pract.)
PHYS 411	Astrophysics I	ASTR 102	-	2 (2+0+0)
PHYS 412	Astrophysics II		-	2 (2+0+0)
PHYS 423	Semiconductor Physics	PHYS 371	-	2 (2+0+0)
PHYS 456	Atomic and Molecular Spectroscopy	PHYS 353	-	2 (2+0+0)
PHYS 457	Laser laboratory	-	PHYS 435	2 (0+0+4)
PHYS 462	Medical Physics	-	PHYS 460	2 (2+0+0)
PHYS 463	Solid State Physics II	PHYS 371	-	2 (2+0+0)
PHYS 476	Nano Science and Technology		PHYS 478	2 (2+0+0)
PHYS 480	Elementary Particles Physics	PHYS 452	-	2 (2+0+0)
PHYS 483	Nuclear Physics II	PHYS 481	-	2 (2+0+0)
PHYS 485	Accelerators Physics		-	2 (2+0+0)
PHYS 486	Radiation Physics		-	2 (2+0+0)
PHYS 488	Nuclear Reactors Physics		-	2 (2+0+0)

(List C) University Requirement: Student chooses 4 courses (8 credit hours)

Course Code	Course Title	Prerequisite	Credits (Lect.+ Exer. + Pract.)
IC 100	Studies in the Biography of the Prophet	-	2 (2+0+0)
IC 101	Introduction of Islamic Culture	-	2 (2+0+0)
IC 102	Islam and Building up the Society	-	2 (2+0+0)
IC 103	Economic System in Islam	-	2 (2+0+0)
IC 104	Political system in Islam	-	2 (2+0+0)
IC 105	Human Rights	-	2 (2+0+0)
IC 106	Islamic Jurisprudence	-	2 (2+0+0)
IC 107	Ethics of Occupation	-	2 (2+0+0)
IC 108	Contemporary Issues	-	2 (2+0+0)
IC 109	Woman and Her Developmental Role	-	2 (2+0+0)

List of Service Courses given to other Departments and Colleges.

Course Code	Course Title	Credits (Lect.+ Exer. + Pract.)	Department/College of
PHYS 101	General Physics I	4 (3+0+2)	GEO - GPH - Agriculture
PHYS 102	General Physics II	4 (3+0+2)	CHEM - GPH
PHYS 103	General Physics	4 (3+0+2)	Engineering
PHYS 104	General Physics	4 (3+0+2)	Engineering - Computer Sciences
PHYS 105	General Physics	3 (2+0+2)	Architecture and Planning
PHYS 109	General Physics	4 (3+0+2)	Health Sciences
PHYS 201	Mathematical Physics (1)	3 (2+2+0)	GPH
PHYS 205	Biophysics	2 (2+0+0)	ZOOL
PHYS 209	General Biophysics I	3 (3+0+0)	BOT MBIO
PHYS 221	Electromagnetism I	3 (3+0+0)	GPH
PHYS 232	Vibration and waves	3 (2+2+0)	

CHEM: Chemistry

GEO: Geology

GPH: Geophysics

ZOOL: Zoology

BOT& MBIO: Botany and Microbiology