COMSATS Institute of Information Technology

Scheme of Studies

(BS (Phy) for 2011-2012)

FA011 – SP12

Total Semesters / Credit Hours
8 Semesters
134

Course Code	Course Title	Credit Hours	Corequisite(s)	Prerequisite(s)
Semester: 1				
HUM100	English Comprehension and Composition	3(3, 0)		
CSC101	Introduction to Computing	4(3, 1)		
MTH101	Calculus I	3(3, 0)		
PHY101	Mechanics of Particles	3(3, 0)		
PHY108	Physics Lab I	1(0, 1)		
******	Minor I	3(3, 0)		
Semester: 2				
MTH102	Calculus II	3(3, 0)		MTH101
PHY103	Heat and Thermodynamics	3(3, 0)		
PHY109	Physics Lab II	1(0, 1)		
CSC141	Introduction to Computer Programming	4(3, 1)		CSC101
MTH231	Linear Algebra	3(3, 0)		
******	Minor II	3(3, 0)		
Semester: 3				
HUM103	Communication Skills	3(3, 0)		HUM100
HUM111	Pakistan Studies	3(3, 0)		
PHY208	Physics Lab III	1(0, 1)		
PHY222	Electric and Magnetic Fields I	3(3, 0)		MTH101 MTH102 PHY101
PHY232	Vibrations and Waves	3(3, 0)	MTH241 PHY222	
MTH241	Ordinary Differential Equations	3(3, 0)		MTH102
******	Minor III	3(3, 0)		
Semester: 4				
HUM110	Islamic Studies	3(3, 0)		
EEE121	Electric Circuits Analysis I	3(3, 0)		PHY222
PHY209	Physics Lab IV	1(0, 1)		

Course Code	Course Title	Credit Hours	Corequisite(s)	Prerequisite(s)
PHY223	Electric and Magnetic Fields II	3(3, 0)		MTH102 PHY222
PHY225	Modern Physics Concepts	3(3, 0)		PHY232
PHY241	Classical Mechanics	3(3, 0)		PHY101 PHY232
PHY271	Boundary Value Problems	3(3, 0)		MTH241
Semester: 5				
EEE222	Electric Circuits Analysis II	3(3, 0)		EEE121
PHY308	Physics Lab V	1(0, 1)		
PHY341	Relativity	3(3, 0)		PHY222
PHY342	Quantum Mechanics I	3(3, 0)		PHY101 PHY225 PHY232
PHY352	Engineering Optics	3(3, 0)		PHY232
PHY361	Mathematical Methods of Physics	3(3, 0)		MTH102 PHY271
******	Minor IV	3(3, 0)		
Semester: 6				
PHY309	Physics Lab VI	1(0, 1)		
PHY343	Quantum Mechanics II	3(3, 0)		PHY342
PHY345	Statistical Mechanics	3(3, 0)		PHY103
PHY354	Fundamental Properties of Solids	3(3, 0)		
PHY362	Computational Physics	3(3, 0)		PHY361
PHY363	Theory of Errors and Research Methodology	3(3, 0)		
Semester: 7				
PHY422	Electromagnetic Theory and Applications	3(3, 0)		PHY223 PHY232
PHY433	Nuclear Physics	3(3, 0)		PHY342
PHY441	Electronic Properties of Solids	3(3, 0)		PHY354
PHY499	Project I	3(0, 3)		
PHYXXX	Elective I	3(3, 0)		
Semester: 8				
PHY499	Project II	6(0, 6)		
PHYXXX	Elective II	3(3, 0)		
PHYXXX	Elective III	3(3, 0)		

Elective Courses

Course Code	Course Title	Credit Hours	Corequisite(s)	Prerequisite(s)
EEE241	Digital Logic Design	4(3, 1)		
EEE342	Microprocessor Systems and Interfacing	4(3, 1)		EEE241
PHY351	Lasers and Fiber Optics	4(3, 1)		PHY223 PHY232
PHY451	Semiconductor Devices	3(3, 0)		PHY354
PHY453	Device Design and Simulation	4(3, 1)		PHY425 PHY451
PHY454	Optoelectronics	3(3, 0)		PHY451
PHY455	Introduction to Biophysics	3(3, 0)		
PHY457	Lasers and Their Applications	3(3, 0)		PHY352
PHY462	Introduction to Nanoscience and Technology	3(3, 0)		PHY354
PHY465	Introduction to Materials Science	3(3, 0)		PHY354
PHY468	Introduction to Group Theory	3(3, 0)		
PHY469	Introduction to Astrophysics and Cosmology	3(3, 0)		PHY341
PHY471	High Energy Physics I	3(3, 0)		PHY343
PHY478	Quantum Computing	3(3, 0)		PHY343
PHY425	Microelectronics	3(3, 0)		PHY354
PHY476	High Energy Physics II	3(3, 0)		PHY343
PHY464	Introduction to Photonics	3(3, 0)		PHY352

Minors Courses: subject to the availability of teachers.

Course Code	Course Title	Credit Hours	Corequisite(s)	Prerequisite(s)
BSC100	Introduction to Biosciences	3(3, 0)		
BIO100	Fundamentals of Biology	3(2, 1)		
ENV101	Fundamentals of Environmental Sciences	3(3, 0)		
CHM211	Introduction to Physical Chemistry	3(2, 1)		
ECO102	Economics	3(3, 0)		
HUM320	Introduction to Sociology	3(3, 0)		
MGT100	Introduction to Business	3(3, 0)		
MGT101	Introduction to Management	3(3, 0)		
HUM310	Islamic History	3(3, 0)		
MET105	Climatology	3(3, 0)		
MET101	Introduction to Meteorology	3(3, 0)		
MET201	Satellite Remote Sensing	3(3, 0)		

Note

Note for Pre-Requisite(s) Course(s):

1. PHY223 or PHY232 are Pre-requisites for PHY351 in the list of Electives.
2. PHY425 or PHY451 are Pre-requisites for PHY453 in the list of Electives.

Note for Elective Course(s):

1. Any other newly introduced subject
2. Elective I,II,III have been displayed with 3(3, 0) credit hours but the students can also opt an elective course having 4(3, 1) credit hours.

Note for Minor Course(s):

1. Any other subject; subject to the availability of teacher
2. Minor I,II,III,VI have been displayed with 3(3, 0) credit hours but the students can also opt a minor course having 3(2, 1) credit hours.

General Note:

In a semester system, courses are normally defined in terms of credit hours. Some courses have further subdivision in theory and lab work. One credit hour of theory is normally equal to one lecture hour in the class room per weak per semester. One credit hour of lab work, however, is equivalent to three contact hours in the lab per semester.

Courses with prerequisites can only be registered if the prerequisite courses have been passed.