

DEPARTMENT OF PHYSICS

(DST-FIST and UGC-SAP Sponsored)

SCHOOL OF PHYSICAL, CHEMICAL AND APPLIED SCIENCES

Course Structure-2014

M. Sc Integrated (SEM I to SEM X) and M.Sc (SEM VII to SEM X)



**PONDICHERRY UNIVERSITY
PUDUCHERRY – 605 014**

PONDICHERY UNIVERSITY

Department of Physics

Course Structure -M. Sc Integrated (SEM I to SEM X) and M.Sc (SEM I to SEM IV)

Semester – I

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 130	Physics Laboratory-I	HC	2	
2	PHYS 131	Mechanics	HC	3	
3	CHEM 100	General Chemistry Laboratory I	HC	2	
4	CHEM 101	General Chemistry I	HC	3	
5	ENGL 111	Functional English	HC	3	
6	MATH 111	Differential Calculus	HC	3	
7	EASC 111	Earth and Environment	HC	3	
Suggested Optional Soft Courses (Outside Department)					
8	PHED 111	Practical Course in Physical Education	SC	3	

Semester – II

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 140	Physics Laboratory-II	HC	2	
2	PHYS 141	Thermal Physics and Kinetic Theory	HC	3	
3	CHEM 120	General Chemistry Laboratory II	HC	2	
4	CHEM 102	General Chemistry II	HC	3	
5	ENGL 121	Functional English	HC	3	
6	MATH 121	Integral Calculus	HC	3	
7	EASC 121	Paleontology	HC	3	
Suggested Optional Soft Courses (Outside Department)					
18	BIOL121	General Biology I	SC	3	

Semester – III

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 230	Physics Laboratory-III	HC	2	
2	PHYS 231	Physics Of Waves And Continuous Media	HC	3	
3	PHYS 232	Electricity and Magnetism	HC	3	
4	EASC 211	Crystallography and Mineralogy	HC	3	
5	MATH 231	Multivariable Calculus	HC	3	
Suggested Optional Soft Courses (Outside Department)					
6	CHEM 201	Inorganic Chemistry I	SC	3	
7	CHEM 241	Physical Chemistry I	SC	3	
8	CHEM 200	Chemistry Laboratory III	SC	2	
9	BIOL 211	General Biology II	SC	3	
10	EASC 212	Structural Geology and Tectonics	SC	3	
11		A Language Course	SC	3	
12		Computer Science Course	SC	3	
13		Mathematics Course	SC	3	
14		Statistics Course	SC	3	

Semester – IV

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 240	Physics Laboratory-IV	HC	2	
2	PHYS 241	Modern Physics – I	HC	3	
3	PHYS 242	Electric Circuits Theory	HC	3	
4	MATH 242	Linear Algebra	HC	3	
Suggested Optional Soft Courses (Outside Department)					
5	CHEM 222	Organic Chemistry I	SC	3	
6		A Language Course	SC	3	
7		Computer Science Course	SC	3	
8		Mathematics Course	SC	3	
9		Statistics Course	SC	3	
10		Course from School of Management	SC	3	
11		Course from School of Social Science(Philosophy)	SC	3	
12	CHEM 210	Chemistry Laboratory IV	SC	2	
13		Course in Conversational English / Communication Skills	SC	3	

Semester – V

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 330	Physics Laboratory-V	HC	2	
2	PHYS 331	Classical Optics	HC	3	
3	PHYS 332	Electronic Devices and Circuits	HC	3	
4	PHYS 333	Modern Physics – II	HC	3	
5	MATH 351	Elements of Differential Equation	HC	3	
Suggested Optional Soft Courses (Outside Department)					
6	CHEM 321	Organic Chemistry II	SC	3	
7	CHEM 341	Physical Chemistry II	SC	3	
8		A Language Course	SC	3	
9		Computer Science Course	SC	3	
10		Mathematics Course	SC	3	
11		Statistics Course	SC	3	
12		Course from School of Management	SC	3	
13	EASC 313	Geochemistry	SC	3	
14		Course from Center for Electronic Media	SC	3	

Semester – VI

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 340	Physics Laboratory-VI	HC	2	
2	PHYS 341	Computational Physics	HC	3	
3	PHYS 342	Basics of Materials Science	HC	3	
4	PHYS 343	Modern Optics	HC	3	
5	PHYS 344	Geomagnetism and Paleomagnetism	SC	3	
6	MATH 361	Fundamentals Of Complex Analysis	HC	3	
Suggested Optional Soft Courses (Outside Department)					
7	CHEM 302	Inorganic Chemistry III	SC	3	
8	CHEM 322	Organic Chemistry III	SC	3	
9	CHEM 352	Analytical Chemistry	SC	3	
10		A Language Course	SC	3	
11		Computer Science Course	SC	3	
12		Mathematics Course	SC	3	
13		Statistics Course	SC	3	
14		Course from School of Management	SC	3	
15		Course from School of Social Science(Philosophy)	SC	3	
16	EASC 321	Geohydrology and Engineering Geology	SC	3	
17	EASC 322	Geomorphology and Remote Sensing	SC	3	

Semester – VII

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 430	Physics Laboratory	HC	2	
2	PHYS 431	Mathematical Methods in Physics – I	HC	4	
3	PHYS 432	Classical Mechanics	HC	4	
4	PHYS 434	Electronic Devices, Circuits	HC	4	
5	PHYS 435	Numerical Methods	SC	3	
6	PHYS 436	UNIX, Fortran 90 and C++	SC	3	
7	PHYS 437	Differential Equations and Transform Techniques	SC	3	
Suggested Optional Soft Courses (Outside Department)					
8	CHEM 403	Advanced Inorganic Chemistry I	SC	3	
9	CHEM 422	Advanced Organic Chemistry I	SC	3	
10	CHEM 443	Symmetry and Group Theory in Chemistry	SC	3	
11	CHEM 463	Quantum Chemistry I	SC	3	
12	EASC 415	Basic Geochemistry	SC	3	
13		A Language Course	SC	3	
14		Computer Science Course	SC	3	
15		Mathematics Course	SC	3	
16		Statistics Course	SC	3	
17		Course from School of Management	SC	3	
18		Course from School of Social Science(Philosophy)	SC	3	

Semester – VIII

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 440	Physics Laboratory	HC	2	
2	PHYS 441	Quantum Mechanics – I	HC	4	
3	PHYS 442	Classical Electrodynamics	HC	4	
4	PHYS 443	Solid State Physics	HC	4	
5	PHYS 444	Nonlinear Dynamics	SC	3	
6	PHYS 445	Measurement Systems and Data Acquisition	SC	3	
7	PHYS 446	Microprocessors and Applications	SC	3	
8	PHYS 447	Basics of Astronomy and Astrophysics	SC	3	
9	PHYS 448	Mathematical Methods in Physics – II	HC	4	
Suggested Optional Soft Courses (Outside Department)					
10	CHEM 404	Advanced Inorganic Chemistry II	SC	3	
11	CHEM 424	Spectroscopic Identification Of Organic Compounds	SC	3	
12	CHEM 444	Statistical Thermodynamics and Reaction Dynamics	SC	3	
13		A Language Course	SC	3	
14		Computer Science Course	SC	3	
15		Mathematics Course	SC	3	
16		Statistics Course	SC	3	
17		Course from School of Management	SC	3	
18		Course from School of Social Science(Philosophy)	SC	3	

Semester – IX

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 530	Condensed Matter Physics Specialization Experiment	HC	3	
2	PHYS 550	Electronic Specialization Experiment	HC	3	
3	PHYS 570	LASER Specialization Experiment	HC	3	
4	PHYS 531	Quantum Mechanics – II	HC	4	
5	PHYS 532	Atomic and Molecular Physics	HC	4	
6	PHYS 533	Condensed Matter Physics	SC	3	
7	PHYS 534	Advanced Electronic Devices and Circuits	SC	3	
8	PHYS 535	Laser Theory	SC	3	
9	PHYS 536	Nonlinear Optics and Materials	SC	3	
10	PHYS 537	Experimental Design	SC	3	
11	PHYS 539	Plasma Physics and Controlled Fusion	SC	3	
12	PHYS 551	Statistical Physics	HC	4	
Suggested Optional Soft Courses (Outside Department)					
13	CHEM 544	Spectroscopy: Theory and Applications	SC	3	
14		A Language Course	SC	3	
15		Computer Science Course	SC	3	
16		Mathematics Course	SC	3	
17		Statistics Course	SC	3	
18		Course from School of Management	SC	3	
19		Course from School of Social Science(Philosophy)	SC	3	

Semester – X

<i>S. No</i>	<i>Code</i>	<i>Course Name</i>	<i>Type</i>	<i>Credits</i>	<i>Page</i>
1	PHYS 540	Project work	HC	4	
2	PHYS 541	Nuclear Physics	HC	4	
3	PHYS 542	Laser Systems	SC	3	
4	PHYS 543	Physics of Amorphous and Crystalline Solids	SC	3	
5	PHYS 544	Magnetism and Magneto- transport	SC	3	
6	PHYS 545	Signal Processing and Communication	SC	3	
7	PHYS 546	Electronic Measurement Techniques and Analysis	SC	3	
8	PHYS 547	Visual Programming (Pre-requisite: PHYS-436)	SC	3	
9	PHYS 548	Quantum Entanglement	SC	3	
10	PHYS 549	Laser Spectroscopy	SC	3	
Suggested Optional Soft Courses (Outside Department)					
11	CHEM 548	Nano-materials and Photo-catalysis	SC	3	
12	CHEM 506	Ligand Filed Theory	SC	3	
13	CHEM 546	Electro- Analysis Techniques	SC	3	
14	CHEM 542	Advanced Magnetic Resonance and Solid State Chemistry	SC	3	
15		A Language Course	SC	3	
16		Computer Science Course	SC	3	
17		Mathematics Course	SC	3	
18		Statistics Course	SC	3	
19		Course from School of Management	SC	3	
20		Course from School of Social Science(Philosophy)	SC	3	