

DEPARTMENT OF PHYSICS

Preamble

UG : Course Profile, list of courses offered to other departments and the syllabi of courses offered in semesters V and VI along with evaluation components III & IV **(with effect from 2015-2018 batches onwards)**

PG : Course Profile, PG –Service learning **(with effect from 2015-2018 batches onwards)**

COURSE PROFILE: B.Sc. (Physics)

Semester	Part	Category	Course code	Course Title	Contact Hrs/week	Credit	
						Min	Max
I	I	Language	UTAL105,UTAL106/ UHIL101/UFRL101	Basic Tamil-I/Advanced Tamil I/Hindi/French	4	2	3
	II	English	UENL107,UENL108	Basic English-I/Advanced English-I	5	3	4
	III	Core I	UPHM101	Fundamentals of Physics	2	1	1
	III	Core II	UPHM103	Mechanics	5	5	5
	III	Core III	UPHM104	Thermal and Statistical Physics	4	4	4
	III	Core Practical-I	UPHR101	Mechanics and Thermal Physics Practical's	3	2	2
	III	Allied	UMAA104	Algebra, Differential Calculus and Trigonometry	5	5	5
	IV	Value Education			2	1	1
TOTAL					30	23	25
II	I	Language	UTAL205,UTAL206 UHIL201/UFRL201	Basic Tamil-II/Advanced Tamil-II/Hindi/French	4	2	3
	II	English	UENL207,UENL208	Basic English-II/Advanced English-II	5	3	4
	III	Core IV	UPHM202	Properties of Matter and Acoustics	3	3	3
	III	Core V	UIDM201	Material science	4	4	4
	III	Core Practical-II	UPHR202	Properties of Matter and Acoustics Practical's	3	2	2
	III	Allied	UMAA212	Integral Calculus, Laplace Transform and Ordinary Differential equation	5	5	5
	IV	NME	-	-	4	2	2
	IV	Soft Skill			2	1	1
	V	Extension Programme/ Physical Education/NCC	-	-	-	1	2
Total					30	23	26
III	I	Language	UTAL305,UTAL306/ UHIL301/UFRL301	Basic Tamil-III/Advanced Tamil-III/Hindi/ French	4	2	3
	II	English	UENL307,UENL308	Basic English-III/Advanced English-III	5	3	4
	III	Core VII	UPHM302	Optics and Laser Physics	6	5	5
	III	Core Practical-III	UPHR302	Optics and Laser Physics Practical	3	2	2

	III	Allied	UCSA304	Mathematical Programming using C	3	3	3
	III	Allied Practical	UCSR307	Mathematical Programming using C Lab	3	2	2
	IV	NME	-	-	4	2	2
	IV	Value Education	-	-	2	1	1
TOTAL					30	20	22
Semester	Part	Category	Course Code	Course Title	Contact Hrs/week	Credit	
						Min	Max
IV	I	Language	UTAL405,UTAL406/ UHIL401/UFRL401	Basic Tamil-IV/Advanced Tamil-IV/Hindi/ French	4	2	3
	II	English	UENL407, UENL408	Basic English-IV/Advanced English-IV	5	3	4
	III	Core VIII	UPHM402	Electricity and Magnetism	4	4	4
	III	Core IX	UPHM405	Atomic and Molecular physics	6	5	5
	III	Core Practical-IV	UPHR404	Electricity and Magnetism Practical	3	3	3
	III	Allied	UCHA401/UCHA402	Chemistry-II	3	3	3
	III	Allied Practical	UCHA402/UCHR403	Volumetric and Organic Analysis-I	3	2	2
	IV	Soft Skill			2	1	1
	V	Extension Programme / Physical Education			-	-	2
TOTAL					30	23	27
Semester	Part	Category	Course Code	Course Title	Contact Hrs/week	Credit	
						Min	Max
V	III	Core XI	UPHM501	Quantum Mechanics and Relativity	5	5	5
	III	Core XII	UPHM505	Basic Electronics	5	4	4
	III	Core XIII	UPHM509	Mathematical physics	6	5	5
	III	Core XIV	UPHM510	Radiation physics	4	3	3
	III	Core Practical-V	UPHR501	Electronics Practical -I	3	3	3
	III	Allied Optional			5	4	4
	IV	Value Education			2	1	1
TOTAL					30	23	23
Semester	Part	Category	Course Code	Course Title	Contact Hrs/week	Credit	
						Min	Max
VI	III	Core XV	UPHM608	Solid State Physics	5	5	5
	III	Core XVI	UPHM609	Numerical methods and Basic Computational Physics	5	5	5
	III	Core XVII	UPHM607	Digital Electronics and Microprocessor	5	4	4
	III	Core XVIII	UPHM603	Nuclear Physics	5	5	5
	III	Core Practical VI	UPHR604	Electronics Practical II	3	3	3
	III	Major Elective	UPHO601/ UPHO602/UPHO603	Nanophysics/ Astrophysics/ Functional Materials	5	4	4

	III	Viva Voce	UPHM610	Comprehensive Viva Voce	-	1	1
	IV	Soft Skill			2	1	1
	V	Extension Programme/Physical Education			-	-	2
TOTAL					30	28	30
GRAND TOTAL					180	140	153

**LIST OF COURSES OFFERED TO OTHER DEPARTMENTS
NON-MAJOR ELECTIVES**

Semester	Part	Category	Course Code	Course Title	Contact Hrs/week	Credit	
						Min	Max
II	IV	Non Major elective	UPHE202	Applied physics	4	2	2
			UPHE203	Biomedical instrumentation			
			UPHE204	Electrical appliances			
III	IV	Non Major Elective	UPHE304/UPHE 503	Telecommunication System	4	2	2
			UPHE303	Servicing and maintenance of home appliances			

ALLIED

Semester	Part	Category	Course Code	Course Title	Contact Hrs/week	Credit	
						Min	Max
I	III	Allied	UPHA102	Allied Physics-I	3	3	3
II	III	Allied	UPHA203	Allied Physics-II	3	3	3
III	III	Allied	UPHA303	Digital Electronics	3	3	3
III	III	Allied	UPHR303	Digital Electronics Practical	3	2	2
IV	III	Allied	UPHA402	Electronics(For Mathematics major)	3	3	3
IV	III	Allied	UPHR402	Electronics(For Mathematics major) Practical	2	2	2

ALLIED OPTIONAL

Semester	Part	Category	Course Code	Course Title	Contact Hrs/week	Credit	
						Min	Max
V	III	Allied Optional	UPHA501	Conservation of Energy	5	4	4
			UPHA502	Laser for medical diagnosis	5	4	4
			UPHA503	Fibre optic communication	5	4	4

INTERDISCIPLINARY

Semester	Part	Category	Course Code	Course Title	Hrs /week	Credit	
						Min	Max
VI	III	Core XVIII	UIDM601	Solid state chemistry	4	4	4

COURSE PROFILE: B.Sc. (PHYSICS)

EXTRA CREDIT EARNING PROVISION

Semester	Part	Category	Course Code	Course Title	Hrs/week	Credit	
						Min	Max
V	III	Core XX	UPHS508/UPHP603	Solar Energy Applications / Project (self study)	-	-	1
II	III	Core VI	UPHI201	Summer Internship	-	-	1
IV	III	Core X	UPHI401	Summer Internship	-	-	1

COURSE PROFILE: M.Sc., (Physics)

PSO1: Proficiency in various mathematical concepts for the proper understanding of application in all physical systems especially in electronics, electromagnetism, material science, classical and quantum mechanics.

PSO2: Learning of laboratory skills, enabling measurements in a physics and electronics laboratory and analysis of the measurements to draw valid conclusions.

PSO3: Operation of the different electronic and physical devices such as microprocessor, microcontroller, laser, linear and nonlinear optical instruments in atomic scale.

PSO4: Ability to synthesis crystals and nanomaterials for various technological applications.

Semester	Category	Course Code	Course Title	Contact Hrs/week	Credit	
					Min	Max
I	Core I	PPHM101	Mathematical Physics I	5	4	4
	Core II	PPHM102	Classical Mechanics	5	4	4
	Core III	PPHM105	Electronics	5	4	4
	Core IV	PPHM104	Electromagnetic Theory	5	4	4
	Core V	PPHM106/ PPHM203	Molecular Spectroscopy	5	4	4
	Core Practical I	PPHR202	General practical –I	5	3	3
Total				30	23	23
II	Core VI	PPHM205/ PPHM401	Mathematical Physics II	5	4	4
	Core VII	PPHM201	Quantum Mechanics I	5	5	5
	Core VIII	PPHM202	Statistical Mechanics	5	4	4
	Core Elective -I	PPHM207/ PPHM302	Solid State Physics I	5	3	3
	Core Practical I	PPHR202	General practical –I	5	3	3
	NME			5	4	4
Total				30	23	23
III	Core IX	PPHM301	Quantum Mechanics II	6	5	5
	Core X	PPHM302	Microprocessor and Microcontroller	6	4	4
	Core XI	PPHM305	Material Science	6	4	4
	Project	PPHP301		2	-	-
	Core Practical- II	PPHR402	General practical –II	5	3	3
	Core XII	PIDM301	Sustainable Materials And Technologies	5	5	5
Total				30	21	21
IV	Core Elective-II	PPHM406/ PPHM303	Laser and nonlinear optics	5	3	3
	Core XIII	PPHM402	Nuclear and Particle Physics	6	4	4
	Core XIV	PPHM403	Solid State Physics-II	5	5	5
	Core Elective -II	PPHM405	Crystal growth and Thin Films	5	4	4
	Core Practical-II	PPHR402	General practical –II	5	3	3
	Project	PPHP401		4	4	4
TOTAL				30	23	23
GRAND TOTAL				120	90	90