



**PERIYAR
MANIAMMAI**
INSTITUTE OF SCIENCE & TECHNOLOGY
(Deemed to be University)
Established Under Sec. 3 of UGC Act, 1956 • NAAC Accredited
think • innovate • transform

Criterion 1 – Curricular Aspects

Key Indicator	1.2	Academic Flexibility
Metric	1.2.2	Percentage of Programmes in which Choice Based Credit System (CBCS)/elective course system has been implemented (Data for the latest completed academic year)

DEPARTMENT OF PHYSICS STRUCTURE OF THE PROGRAM CLEARLY INDICATING COURSES, CREDITS/ELECTIVES

Programmes

1. B Sc Physics
2. M.Sc Physics

**CURRICULUM
B.Sc. Physics
REGULATION 2021**

SEMESTER – I

Category	Code	Subject Name	Credits				Hours				
			L	T	P	Total	L	T	P	SS	Total
AECC-1	XGL101	Basic English Communication Skills	2	0	0	2	2	0	0	0	2
LAN	XGL102A / XGL102B	Ariviyal Tamil / English for employability	3	0	0	3	3	0	0	0	3
CC-1	XMG103	Algebra, Trigonometry and Transform	4	1	0	5	4	1	0	0	5
CC-2	XPH104	Properties of Matter and Sound	3	1	0	4	3	1	0	0	4
CC-3	XPH105	Mechanics	3	1	0	4	3	1	0	0	4
UMAN-1	XUMA106	Human Ethics, Values, Rights, and Gender Equality	3	0	0	3	2	0	0	1	2
CC-4	XPH107	Mechanics and properties of matter lab	0	0	2	2	0	0	4	0	4
Total			18	3	2	23	17	3	4	1	24

SEMESTER – II

Category	Code	Subject Name	Credits				Hours				
			L	T	P	Total	L	T	P	SS	Total
AECC-2	XGL201	Advanced English Communication Skills	2	0	0	2	2	0	0	0	2
AECC-3	XUMA202	Environmental Studies	2	0	0	2	2	0	0	0	2
CC5	XMG203	Calculus and Differential Equations	4	1	0	5	4	1	0	0	5
UVM	XVM204	Entrepreneurship Development	2	0	0	2	2	0	0	0	2
CC-6	XPH205	Electricity and Magnetism	3	1	0	4	3	1	0	0	4
CC-7	XPH206	Atomic Physics	3	1	0	4	3	1	0	0	4
CC-8	XPH207	Electricity and Magnetism lab	0	0	2	2	0	0	4	0	4
Total			16	3	2	21	16	3	4	0	23

SEMESTER – III

Category	Code	Subject Name	Credits				Hours				
			L	T	P	Total	L	T	P	SS	Total
SEC 1	XPB301	Physics Workshop Skills	0	0	2	2	0	0	4	0	4
CC-9	XCG302	Inorganic, Organic and Physical Chemistry I	3	0	0	3	3	0	0	0	3
CC-10	XPB303	Heat and Thermodynamics	3	0	0	3	3	0	0	0	3
CC-11	XPB304	Basic Electronics	3	0	0	3	3	0	0	0	3
GE-1		*Open Elective - To be chosen by student	3	0	0	3	3	0	0	0	3
CC-12	XCG305	Volumetric and Organic Qualitative Analysis Practical - I	0	0	2	2	0	0	4	0	4
UMAN-2	XUM306	Disaster Management	3	0	0	3	3	0	0	0	3
CC-13	XPB307	Physics Practical III	0	0	2	2	0	0	4	0	4
Total			15	0	6	21	13	3	9	2	25

SEMESTER – IV

Category	Code	Subject Name	Credits				Hours				
			L	T	P	Total	L	T	P	SS	Total
SEC 2	XPB401	Electrical Circuit Network Skills	0	0	2	2	0	0	4	0	4
CC-14	XCG402	Inorganic, Organic and Physical Chemistry II	3	1	0	4	3	1	0	0	4
CC-15	XPB403	Waves and Optics	3	1	0	4	3	1	0	0	4
CC-16	XPB404	Digital electronics	3	1	0	4	3	1	0	0	4
GE-2		Generic Elective – 2	3	0	0	3	3	0	0	0	3
CC-17	XCG405	Volumetric and Qualitative Analysis II Lab	0	0	2	2	0	0	4	0	4
CC-18	XPB406	Optics and digital electronics lab	0	0	2	2	0	0	4	0	4
Total			12	3	6	21	12	3	10+2*	0	25

SEMESTER – V

Category	Code	Subject Name	Credits				Hours				
			L	T	P	Total	L	T	P	SS	Total
SEC 3	XP501	Basic Instrumentation Skills	0	0	2	2	0	0	4	0	4
DSE1	XP502A	Communication electronics	3	1	0	4	3	1	0	0	4
	XP502B	Nuclear and Particle Physics									
DSE2	XP503A	Mathematical Physics	3	1	0	4	3	1	0	0	4
	XP503B	Solid State Physics									
DSE3	XP504A	Measurement and Instrumentation	3	1	0	4	3	1	0	0	4
	XP504B	Microprocessor and C programming									
GE 3		Generic Elective – 3	3	0	0	3	3	0	0	0	3
DSE Lab	XP506A	Measurement and Instrumentation Lab									
	XP506B	Microprocessor and C programming Lab	0	0	2	2	0	0	4	0	4
	XP507	IPT (21 days)	-	-	-	4	-	-	-	-	-
Total			12	3	4	23	12	3	8	0	23

SEMESTER – VI

Category	Code	Subject Name	Credits				Hours				
			L	T	P	Total	L	T	P	SS	Total
UMAN-3	XUMA601	Cyber Security	3	0	0	3	3	0	0	0	3
SEC	XPH602	Renewable and Energy Harvesting Skills	0	0	2	2	0	0	4	0	4
DSE4	XPH603A	Laser Physics	3	1	0	4	3	1	0	0	4
	XPH603B	Nano Material and Applications									
DSE5	XPH604A	Power electronics	3	1	0	4	3	1	0	0	4
	XPH604B	Astronomy and Astrophysics									
DSE6	XPH605A	Introduction of Microcontroller	3	1	0	4	3	1	0	0	4
	XPH605B	Quantum mechanics									
DSC	XPH606	Project	0	0	6	6	0	0	6	6	6
		Total	12	3	8	23	12	3	10	6	25

Total = 132 Credits

M.Sc Physics Curriculum

Course	Subject Code	Course Title	Credits				Hours			
			L	T	P	Total	L	T	P	Total
Core Course I	YPH101	Mathematical Methods of Physics - I	4	1	0	5	4	1	0	5
Core Course II	YPH102	Classical Mechanics	4	1	0	5	4	1	0	5
Core Course III	YPH103	Electronics	4	1	0	5	4	1	0	5
Elective Course I	YPH104A	Numerical Methods and Computation								
	YPH104B	Thermodynamics and Statistical Mechanics	4	0	0	4	4	0	0	4
	YPH104C	Instrumental Methods of Analyses								
Core Course IV (Lab)	YPH105	Basic General & Electronics Laboratory	0	0	3	3	0	0	6	6
Total						22				25
SEMESTER – II										
Course	Subject Code	Course Title	Credits				Hours			
			L	T	P	Total	L	T	P	Total
Core Course V	YPH201	Mathematical Methods of Physics-II	4	1	0	5	4	1	0	5
Core Course VI	YPH202	Quantum Mechanics -I	4	1	0	5	4	1	0	5
Core Course VII	YPH203	Microprocessor and Microcontroller	4	1	0	5	4	1	0	5
Elective Course II	YPH204A	Physics and Technology of Thin films								
	YPH204B	Crystal Growth and Characterization Techniques	4	0	0	4	4	0	0	4
	YPH204C	Nanoscience and Technology								
Core Course VIII (Lab)	YPH205	Digital & Microprocessor Laboratory	0	0	3	3	0	0	6	6
Total						22				25

SEMESTER – III										
Course	Subject Code	Course Title	Credits				Hours			
			L	T	P	Total	L	T	P	Total
Core Course IX	YPH301	Solid State Physics	4	1	0	5	4	1	0	5
Core Course X	YPH302	Quantum Mechanics -II	4	1	0	5	4	1	0	5
Core Course XI	YPH303	Electromagnetic Theory	4	1	0	5	4	1	0	5
Elective Course III	YPH304A	Micro Electro Mechanical Systems (MEMS)	4	0	0	4	4	0	0	4
	YPH304B	Solar Thermal and Photovoltaic Technology								
	YPH304C	Industrial Electronics								
Core Course XII (Lab)	YPH305	Advanced General & Electronics Laboratory	0	0	3	3	0	0	6	6
Total						22				25

SEMESTER IV

Course	Subject Code	Course Title	Credits				Hours			
			L	T	P	Total	L	T	P	Total
Core Course XIII	YPH401	Atomic and Molecular Spectroscopy	4	1	0	5	4	1	0	5
Core Course XIV	YPH402	Nuclear and Particle Physics	4	1	0	5	4	1	0	5
Project	YPH403	Project Work and Viva voce	-	-	10	10	-	-	15+5*	15 +5*
Total						20				25+5*