



**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
2023-2024 ACADEMIC YEAR
DEPARTMENT OF PHYSICS

Programmes

1. B Sc. Physics
2. M.Sc. Physics

B.Sc. Physics Curriculum Reg 2021

SEMESTER V								
Type	Course Code	Course Title	L	T	P	SS	H	C
SEC 3	XPH501	Basic Instrumentation Skills	0	0	4	0	4	2
DSE 1	XPH502A	Communication Electronics	3	1	0	0	4	4
	XPH502B	Nuclear and Particle Physics						
DSE 2	XPH503A	Mathematical Physics	3	1	0	0	4	4
	XPH503B	Solid State Physics						
DSE 3	XPH504A	Measurement and Instrumentation	3	1	0	0	4	4
	XPH504B	Microprocessor and C Programming						
GE 3		Generic Elective – 3	3	0	0	0	3	3
DSE Lab	XPH505A	Measurement and Instrumentation - Laboratory	0	0	4	0	4	2
	XPH505B	Microprocessor and C Programming - Laboratory						
* Extra credit	XPH506	IPT (21 days)						4*
Total			12	3	8		23	19+4*

SEMESTER VI								
Type	Course Code	Course Title	L	T	P	SS	H	C
UMAN-3	XUMA601	Cyber Security	3	0	0	0	3	3
SEC	XPH602	Renewable and Energy Harvesting Skills	0	0	4	0	4	2
DSE4	XPH603A	Laser Physics	3	1	0	0	4	4
	XPH603B	Nano Material and Applications						
DSE5	XPH604A	Power Electronics	3	1	0	0	4	4
	XPH604B	Astronomy and Astrophysics						
DSE6	XPH605A	Introduction of Microcontroller	3	1	0	0	4	4
	XPH605B	Quantum Mechanics						
DSC	XPH606	Project	0	0	6	0	6	6
Total			12	3	10	0	25	23

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SEMESTER III								
Type	Course Code	Course Name	L	T	P	SS	H	C
SEC – 1	XPH301	Physics Workshop Skills	0	0	3	0	3	2
Core -9	XPH302	Thermal Physics and Statistical Mechanics	4	0	0	0	4	4
Core -10	XPH303	Basic Electronics	4	0	0	0	4	4
Core -10	XPH304	Thermal and Electronics – Laboratory	0	0	3	0	3	2
Core – 12	XPH305	Inorganic, Organic and Physical Chemistry – I	4	0	0	0	4	4
Core –13	XPH306	Volumetric and Organic Qualitative Analysis Practical – I	0	0	3	0	3	2
UMAN–3	XUM003	Disaster Management	1	0	0	1	1	1
GE – 1		*Open Elective – To be chosen by student	3	0	0	0	3	3
		Mentor / Library/Extension activities					4	
Total			16	0	9	0	29	22

SEMESTER IV								
Type	Course Code	Course Name	L	T	P	SS	H	C
SEC – 2	XPH401	Electrical Circuit Network Skills	0	0	3	0	3	2
Core – 14	XPH402	Waves and Optics	4	0	0	0	4	4
Core – 15	XPH403	Digital Electronics	4	0	0	0	4	4
Core – 16	XPH404	Optics and Digital Electronics - Laboratory	0	0	3	0	3	2
Core – 17	XPH405	Inorganic, Organic and Physical Chemistry – II	4	0	0	0	4	4
Core – 18	XPH406	Volumetric and Organic Qualitative Analysis –II Lab	0	0	3	0	3	2
UMAN–4	XUM003	Entrepreneurship Development	1	0	0	1	1	1
GE – 2		Generic Elective – 2	3	0	0	0	3	3
		Mentor/Extension activities					4	
Total			16	0	9	1	29	22

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Semester I									
Part	Category	Course Code	Course Name	L	T	P	SS	H	C
I	Language	XGT101/ XFT101	Tamil – 1/ Foundational Tamil – 1	3	0	0	0	3	3
II	Language	XGE102	English – I	3	0	0	0	3	3
III	CC 1	XPH103	Properties of Matter and Sound	3	1	0	0	4	4
	AT 1	XMG104	Allied Mathematics -I	4	1	0	0	5	4
	CC 2	XPH105	Physics Practical - I	0	0	3	0	3	2
IV	SEC-1(NME)	XPH106	Physics for Everyday Life	0	0	3	0	3	2
	UMAN-1	XUM001	Human Ethics, Values, Rights and Gender Equality	1	0	0	1	1	1
	FC	XPH107	Foundation Course	2	0	0	0	2	2
V	EA		Extension Activities NSS,NCC,NSO and RRC and YRC	0	0	0	0	2	0
			Library	0	0	0	0	2	0
			Mentoring	0	0	0	0	2	0
Total				16	2	6	1	30	21

Semester II									
Part	Category	Code	COURSE NAME	L	T	P	SS	H	C
I	Language	XGT201/ XFT201	Tamil – II / Foundational Tamil – II	3	0	0	0	3	3
II	Language	XGE202	English – II	3	0	0	0	3	3
III	CC 3	XPH203	Heat, Thermodynamics and Statistical Physics	3	1	0	0	4	4
	AT 2	XMG204	Allied Mathematics -2	4	1	0	0	5	4
	CC 4	XPH205	Physics Practical – II	0	0	3	0	3	2
IV	SEC-2	XPH206	Home Electrical Installation	0	0	3	0	3	2
	SEC-3	XPH207	Numerical Methods and C Programming	2	1	0	0	3	2
	UMAN-2	XUM002	Environmental Studies	1	0	0	1	1	1
			Field Visit	0	0	0	0	0	2
V	EA		Extension Activities NSS,NCC,NSO and RRC	0	0	0	0	1	0
			Library	0	0	0	0	2	0
			Mentoring	0	0	0	0	2	0
Total				16	3	3	1	30	23

M.Sc. Physics Physics Reg 2021 R1

SEMESTER - III								
Category	Course Code	Course Name	L	T	SS	P	H	C
Core Course-X	YPH301	Solid State Physics	4	1	0	0	5	5
Core Course-XI	YPH302	Nuclear and Particle Physics	4	1	0	0	5	5
Core Course-XII	YPH303	Quantum Mechanics - II	4	1	0	0	5	5
Core Course-XIII	YPH304	Electromagnetic Theory	4	1	0	0	5	5
Elective Core -III	YPH305A	Micro Electro Mechanical System (MEMS)	3	1	0	0	4	4
	YPH305B	Solar Thermal and Photovoltaic Technology						
	YPH305C	Industrial Electronics						
Core Course-XIV (Lab)	YPH306	Advanced General and Electronics Laboratory	0	0	0	6	6	3
Total			18	5	0	6	30	27

SEMESTER-IV								
Category	Course Code	Course Name	L	T	SS	P	H	C
Core Course-XV	YPH403	Project Work and Viva voce	0	0	30	0	30	10
Total			15	4	0	12	30	26

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SEMESTER -III								
Category	Course Code	Course Name	L	T	SS	P	H	C
Core Course I	YPH101	Mathematical Methods of Physics - I	4	1	0	0	5	5
Core Course II	YPH102	Classical Mechanics	4	1	0	0	5	5
Core Course III	YPH103	Electronics	4	1	0	0	5	5
Elective Core -I	YPH104A	Numerical Methods and Computation	4	0	0	0	4	4
	YPH104B	Aerospace Dynamics						
	YPH104C	Physics Linear and Non – Linear circuits						
Core Course- IV (Lab)	YPH105	General and Electronics Laboratory	0	0	1	5	5	3
		Library	0	0	1	0	0	0
Total			15	5	0	12	28	28

SEMESTER- II								
Category	Course Code	Course Name	L	T	SS	P	H	C
Core Course- V	YPH201	Mathematical Physics - II	4	1	0	0	5	5
Core Course- VI	YPH202	Quantum Mechanics	4	1	0	0	5	5
Core Course- VII	YPH203	Atomic and Molecular Spectroscopy	4	1	0	0	5	5
Core Course- VIII	YPH204	Microprocessor and Microcontroller	4	1	0	0	5	5
Elective Core -I	YPH205A	Physics and Technology of thin film	4	0	0	0	4	4
	YPH205B	Crystal Growth and characterization Technique						
	YPH205C	Nano science and Technology						
Core Course- IX	YPH206	Digital and Microprocessor Laboratory	0	0	1	5	5	3
Core Course- X	YRM001	Research Methodology	1	0	1	0	1	2
Total			21	4	2	5	30	29