

**CURRICULUM**  
**B.Sc. Physics**  
**REGULATION 2021 (Revision – 1)**

**SEMESTER – I**

Category	Code	COURSE NAME	L	T	P	SS	H	C
Part – I	XGT101/ XFT101	Tamil – 1/ Foundational Tamil – 1	2	1	0	0	3	3
Part – II	XGE102	English – I	2	1	0	0	3	3
Core – 1	XPH103	Properties of Matter and Sound	4	0	0	0	4	4
Core – 2	XPH104	Mechanics and Relativity	4	0	0	0	4	4
Core – 3	XPH105	Mechanics and Properties of Matter - laboratory	0	0	3	0	3	2
Core – 4	XMG106	Algebra, Trigonometry Applications of Laplace Transforms and Fourier series	4	1	0	0	5	5
UMAN–1	XUM001	Human Ethics, Values, Rights, and Gender Equality	1	0	0	1	2	1
		Library					1	
		Mentoring					1	
		Extension Activities NSS,NCC,NSO and RRC					2	
		<b>Total</b>					<b>28</b>	<b>22</b>

**SEMESTER – II**

<b>Category</b>	<b>Code</b>	<b>COURSE NAME</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>SS</b>	<b>H</b>	<b>C</b>
Part – I	XGT201/ XFT201	Tamil – II / Foundational Tamil - II	2	1	0	0	3	3
Part – II	XGE202	English – II	2	1	0	0	3	3
Core – 5	XPH203	Electricity and Magnetism	4	0	0	0	4	4
Core – 6	XPH204	Atomic Physics	4	0	0	0	4	4
Core – 7	XPH205	Electricity and Magnetism - laboratory	0	0	3	0	3	2
Core – 8	XMG206	Calculus and Differential Equations	4	1	0	0	5	5
UMAN–2	XUM002	Environmental Studies	1	0	0	1	2	1
		Library					1	
		Mentoring					1	
		Field Visit						2
		Extension Activities NSS,NCC,NSO and RRC					2	
		<b>Total</b>					<b>28</b>	<b>24</b>

### SEMESTER – III

Category	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 –11	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	2	1
GE – 1		*Open Elective – To be chosen by student	3	0	0	0	3	3
		Library					1	
		Mentoring					1	
		Extension Activities NSS,NCC,NSO and RRC					2	
		<b>Total</b>					<b>30</b>	<b>22</b>

### SEMESTER – IV

Category	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	2	1
GE – 2		Generic Elective – 2	3	0	0	0	3	3
		Library					1	
		Mentoring					1	
		Extension Activities NSS,NCC,NSO and RRC					2	
		<b>Total</b>					<b>30</b>	<b>22</b>

**SEMESTER – V**

<b>Category</b>	<b>Code</b>	<b>COURSE NAME</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>SS</b>	<b>H</b>	<b>C</b>
SEC – 3	XPH501	Basic Instrumentation Skills	0	0	3	0	3	2
DSE1	XPH502A	Communication Electronics	4	0	0	0	4	4
	XPH502B	Nuclear and Particle Physics						
DSE2	XPH503A	Mathematical Physics	4	0	0	0	4	4
	XPH503B	Solid State Physics						
DSE3	XPH504A	Measurement and Instrumentation	4	0	0	0	4	4
	XPH504B	Microprocessor and C Programming						
DSE Lab	XPH505A	Electronics and Instrumentation - Laboratory	0	0	3	0	3	2
	XPH505B	Microprocessor and Microcontroller - Laboratory						
	XPH506	IPT (21 days)	–	–	–	–	–	4
GE – 3		Generic Elective – 3	3	0	0	0	3	3
		Library					1	
		Mentoring					1	
		Extension Activities NSS,NCC,NSO and RRC					2	
		<b>Total</b>					<b>25</b>	<b>23</b>

### SEMESTER – VI

Category	Code	COURSE NAME	L	T	P	SS	H	C
SEC – 4	XPH601	Renewable and Energy Harvesting Skills	0	0	3	0	3	2
DSE 4	XPH603A	Laser Physics	4	0	0	0	4	4
	XPH603B	Nano Material and Applications						
DSE 5	XPH604A	Power Electronics	4	0	0	0	4	4
	XPH604B	Astronomy and Astrophysics						
DSE 6	XPH605A	Introduction of Microcontroller	4	0	0	0	4	4
	XPH605B	Quantum Mechanics						
DSE	XPH606	Project	–	–	8	–	8	8
UMAN–5	XUM005	Cyber Security	1	0	0	1	2	1
		Library					1	
		Mentor					1	
		Extension Activities NSS,NCC,NSO and RRC					2	2
<b>Total</b>							<b>29</b>	<b>25</b>

**Total Credit : 22 + 24 + 22 + 22 + 23 + 25 = 138 Credits**

### LIST OF SKILL BASED COURSES

#### Semester – III

Category	Code	Course Name	L	T	P	SS	H	C
SEC – 1	XPH301	Physics Workshop Skills	0	0	3	0	3	2

#### Semester – IV

Category	Code	Course Name	L	T	P	SS	H	C
SEC – 2	XPH401	Electrical Circuit Network Skills	0	0	3	0	3	2

#### Semester – V

Category	Code	Course Name	L	T	P	SS	H	C
SEC – 3	XPH501	Basic Instrumentation Skills	0	0	3	0	3	2

**Semester – VI**

Category	Code	Course Name	L	T	P	SS	H	C
SEC – 4	XPH601	Renewable and Energy Harvesting Skills	0	0	3	0	3	2

**LIST OF DISCIPLINE SPECIFIC ELECTIVE COURSES****Semester – V**

Category	Code	Course Name	L	T	P	SS	H	C
DSE1	XPH502A	Communication Electronics	4	0	0	0	4	4
	XPH502B	Nuclear and Particle Physics	4	0	0	0	4	4
DSE2	XPH503A	Mathematical Physics	4	0	0	0	4	4
	XPH503B	Solid State Physics	4	0	0	0	4	4
DSE3	XPH504A	Measurement and Instrumentation	4	0	0	0	4	4
	XPH504B	Microprocessor and C Programming	4	0	0	0	4	4

**Semester – VI**

Category	Code	Course Name	L	T	P	SS	H	C
DSE 4	XPH603A	Laser Physics	4	0	0	0	4	4
	XPH603B	Nano Material and Applications	4	0	0	0	4	4
DSE 5	XPH604A	Power Electronics	4	0	0	0	4	4
	XPH604B	Astronomy and Astrophysics	4	0	0	0	4	4
DSE 6	XPH605A	Introduction of Microcontroller	4	0	0	0	4	4
	XPH605B	Quantum Mechanics	4	0	0	0	4	4

**Note:**

**L – Lecture**  
**SS – Self Study**

**T – Tutorial**  
**H – Hours**

**P – Practical**

### Total Credit and Mark Distribution

Parts	Category & Courses	No of Courses ×Credits	Semesters						Total Credits	UGC Credits	Deviation %
			I	II	III	IV	V	VI			
Part – I	Tamil – I / Foundational Tamil – I and Tamil – II / Foundational Tamil – II	2 × 3	3	3					6	-	+6
Part – II	English I and II	2 × 3	3	3					6	8	-2
Part – III	Core Theory and Lab	16 × 4 = 64 7 × 2 = 14 2 × 5 = 10	15	15	16	16	-	-	62	72	-10
Part – III	SEC: Skill Based Elective Course	4 × 4 = 16			2	2	2	2	8	16	-8
Part – III	DSE: Discipline Specific Elective	6 × 4 = 24 1 × 2 = 2					14	12	26	24	+ 2
Part – IV	GE: Open Elective	3 × 3			3	3	3		9	12	-3
Part – IV	IPT: Internship Programme Training	1 × 4					4		4	-	+4
Part – IV	UMAN001: Human Ethics, Values, Rights, and Gender Equality UMAN002: Environmental Studies UMAN003: Disaster Management UMAN004: Entrepreneurship Development UMAN005: Cyber Security	5 × 1	1	1	1	1	-	1	5	-	+5
Part – IV	Project	1 × 8						8	8	-	+8
Part – IV	Field Visit	1 × 2		2					2	-	+2
Part – V	Extension Activity	1 × 2						2	2	-	+2
	<b>Total</b>		<b>22</b>	<b>24</b>	<b>22</b>	<b>22</b>	<b>23</b>	<b>25</b>	<b>138</b>	<b>132</b>	<b>6</b>

