

## 2025 Batch

### Curriculum for B.S in Physics

#### Semester 1

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH1050	Foundation of Computational Physics	2	0	0	3	4	9	C
2	MA1101	Calculus	3	1	0	0	6	10	S
3	PH1010	Physics I	3	1	0	0	6	10	S
4	PH1030	Physics Lab	0	0	0	3	1	4	S
5	PH1080	Thermodynamics & Kinetic Theory	3	1	0	0	6	10	P
6	GN1101	Life Skills I	0	0	0	0	4	4	GN
7	GNXXX	NCC (NC1010)/NSO (NS1020)/NSO(NS1030)	0	0	0	0	2	2	GN
8	ID1300	Recreation-1	0	0	0	0	2	2	GN
	ID1200	Ecology and Environment	2	0	0	0	0	2	GN
		<b>Credits for semester 1</b>						<b>53</b>	

#### Semester 2

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	CY1002	Chemistry Lab	0	0	0	3	0	3	S
2	CY1001	Chemistry I	3	1	0	0	6	10	S
3	HSE-1	Humanities Elective-I	3	0	0	0	6	9	H
4	MAE-1	Mathematics Elective-I	3	0	0	0	6	9	S
5	PH1020	Physics II	3	1	0	0	6	10	S
6	PH1040	Physics Lab II	0	0	0	3	1	4	S
7	GNWWW	NCC (NC1010)/NSO (NS1020)/NSO(NS1030)	0	0	0	0	2	2	GN
8	ID1300	Recreation-2	0	0	0	0	2	2	GN
9	GN1102	Life Skills II	0	0	0	0	2	2	GN
		<b>Credits for semester 2</b>						<b>51</b>	

#### Semester 3

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	EP2110	Introduction to Mathematical Physics	3	1	0	0	6	10	P
2	MAE-2	Mathematics Elective-II	3	0	0	0	6	9	S
3	PH2170	Basic Electronics	3	0	0	0	6	9	P
4	HSE-2	Humanities Elective - II	3	0	0	0	6	9	H
5	PH2050	Physics Lab - III	0	0	0	6	2	8	P
6	HS3050	Professional Ethics	2	0	0	0	0	2	GN
		<b>Credits for semester 3</b>						<b>47</b>	

#### Semester 4

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH2070	Introduction to Biophysics	3	0	0	0	6	9	P
2	HSE-3	Humanities Elective - III	3	0	0	0	6	9	H
3	MS	Entrepreneurship Elective	3	0	0	0	6	9	M
4	FE 1	Free Elective -1	3	0	0	0	6	9	F

5	PH2080	Physics Lab - IV	0	0	0	6	2	8	P
6	PH3500/ 5820	Classical Physics	3	0	0	0	6	9	P
		<b>Credits for semester 4</b>						<b>53</b>	

### Semester 5

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	BT1010	Life Sciences	3	0	0	0	6	9	S
2	PH5030	Classical Mechanics	3	1	0	0	6	10	P
3	PH5100	Quantum Mechanics - I	3	1	0	0	6	10	P
4	PH5040	Electronics	3	0	0	0	6	9	P
5	PH5050	Mathematical Physics-II	3	0	0	0	6	9	P
6	PH5060	Physics Lab – I (PG)	0	0	0	6	3	9	P
		<b>Credits for semester 5</b>						<b>56</b>	

### Semester 6

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH5020	Electromagnetic Theory	3	1	0	0	6	10	P
2	PH5080	Statistical Physics	3	1	0	0	6	10	P
3	PH5160	Condensed Matter Physics -I	3	1	0	0	6	10	P
4	PH5170	Quantum Mechanics - II	3	0	0	0	6	9	P
5	FE-2	Free Elective - 2	3	0	0	0	6	9	F
6	PH5120	Physics Lab - II (PG)	0	0	0	6	3	9	P
		<b>Credits for semester 6</b>						<b>57</b>	

### Semester 7

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	FE-3	Free Elective - 3 *	3	0	0	0	6	9	F
2	FE-4	Free Elective – 4*	3	0	0	0	6	9	F
3	FE-5	Free Elective - 5 *	3	0	0	0	6	9	F
4	DPE-1	Department Elective - 1	3	0	0	0	6	9	P
5	DPE-2	Department Elective - 2	3	0	0	0	6	9	P
		<b>Credits for semester 7</b>						<b>45</b>	

### Semester 8

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DPE-3	DPE-12 Credit Elective-3 (Experimental / Computational Stream) **	3	0	0	3	6	12	P
2	DPE-4	Department Elective - 4	3	0	0	0	6	9	P
3	DPE-5	Department Elective - 5	3	0	0	0	6	9	P
4	FE-6	Free Elective -6	3	0	0	0	6	9	F
		<b>Credits for semester 8</b>						<b>39</b>	

**\*\*Choice between PH5720 Numerical Methods and Programming / PH 5520**

**Advanced Electronics for pursuing either experimental or computational streams of specialization.**

**UGRP:** Students can pursue up to 2 UGRP courses in lieu of 2 DPE courses, if these courses are pursued in the Department. If UGRP is pursued in other Department, it will be counted as FE.

Semester	I	II	III	IV	V	VI	VII	VIII	Total
Credits	53	51	47	53	56	57	45	39	401

Category	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un- allotted Credits	Total
Credits	9	158+48	27	78	18	9	54	401

**BS (Honours):** (Total credit requirement:  $401 + 27 = 428$ )

- **Eligibility:** minimum CGPA of 8.5 at the end of 5th sem without U grade in any course. They need to maintain these conditions until graduation.
- **Extra credit requirement:** 27 elective credits over and above regular program. These credits **have** to be completed in VI, VII and VIII semester.

# Curriculum for BS-MS Physics (upgraded Dual degree)

## Summer

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	PH5221	Summer Project	0	0	0	0	15	15	P
		<b>Total</b>						<b>15</b>	

## Semester 9

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DPE – 6 / FE-7***	Departmental Elective – 6 / Free Elective - 7	3	0	0	0	6	9	P
2	PH5410	Atomic and Molecular Physics	3	1	0	0	6	10	P
3	PH5270	Physics Lab-3 (PG)	1	0	0	6	2+2	11	P
4	PH5222	Project	0	0	0	0	30	30	P
5		<b>Credits for semester 9</b>						<b>60</b>	

## Semester 10

\*\*\* Students can either complete DPE-6 in Sem. 9 and FE-8 in Sem. 10, or vice versa.

Only 1 Free elective can be taken in the final year of DD(BS-MS). A Physics Department elective can also be taken as a Free elective.

S.No	Course No	Course Name	L	T	E	P	O	C	Cat
1	DPE – 6 / FE-7***	Departmental Elective – 6 / Free Elective - 7	3	0	0	0	6	9	F
2	PH5223	Project	0	0	0	0	40	40	P
		<b>Credits for semester 10</b>						<b>49</b>	

Semester	I	II	III	IV	V	VI	VII	VIII	IX	Sum	X	Total
<b>Credits</b>	<b>53</b>	<b>51</b>	<b>47</b>	<b>53</b>	<b>56</b>	<b>57</b>	<b>45</b>	<b>39</b>	<b>15</b>	<b>60</b>	<b>49</b>	<b>525</b>

Category	Computing (C)	Professional (P) Core+Elective	Humanities (H)	Sciences (S)	General (G)	Management (M)	Un-allotted Credits	Total
<b>Credits</b>	<b>9</b>	<b>264+57</b>	<b>27</b>	<b>78</b>	<b>18</b>	<b>9</b>	<b>63</b>	<b>525</b>

**BS (Honours):** (Total credit requirement: 525 + 27 = 552)

- **Eligibility:** minimum CGPA of 8.5 at the end of 5th sem without U grade in any course. They need to maintain these conditions until graduation.
- **Extra credit requirement:** 27 elective credits over and above regular program. These credits **have** to be completed in VI, VII and VIII semester.