

**DEPARTMENT OF PHYSICS**  
**INDIAN INSTITUTE OF TECHNOLOGY ROORKEE**

Program Code: **XX BS-MS in Physics**

Department: **PH Physics**

Year: **I**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Autumn Semester</b>														
1.	MA-001	Mathematics - 1	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2.	PH-103	Computer Programming	ESC	4	3	0	2	3	0	15-25	25	20-30	40-50	-
3.	CYN-001	Physical Chemistry	BSC	4	3	0	0	0	0	20-35	-	20-30	40-50	-
4.	HSS-10X	Communication Skills	HSSC	2	1	1	0	2	0	25-35	-	20-30	40-50	-
5.	HSS-10Y	Introduction to Psychology	HSSC	2	2	0	0	0	0	25-35	-	20-30	40-50	-
6.	PH-101	Introduction to Physical Science	PCC	2	2	0	0		0	20-35	-	20-30	40-50	-
7.	CEN-105	Introduction to Environmental Studies	GSC	3	3	0	0	3						
		<b>TOTAL</b>		<b>21</b>	<b>17</b>	<b>2</b>	<b>2</b>							
<b>Spring Semester</b>														
1.	MA-002	Mathematical Methods	BSC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
2.	PH-xxx	Physics 1 (Mechanics and Relativity)	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
3.	PH-xxx	Physics 2 (Electro Magnetic Theory)	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4.	PHN-xxx	Basic Analog Electronics	PCC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
5.	PH-xxx	Physics Lab 1 (Basic experiments)	PCC	3	0	0	6	0	4	-	50	-	-	50
6.	CY-104	General Organic and Inorganic Chemistry	BSC	4	3	0	2	3	2	15-25	25	20-30	40-50	-
		<b>TOTAL</b>		<b>22</b>	<b>15</b>	<b>3</b>	<b>8</b>							

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Program Code: **XX BS-MS in Physics**  
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Year: **II**

Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)				
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE
<b>Autumn Semester</b>														
1.	MIN-108	Mechanical Engineering Drawing	ESC	4	2	0	4	0	4	-	50	-	-	50
2.	PH-xxx	Quantum Physics	PCC	3	2	1	0	2	0	20-35	-	20-30	40-50	-
3.	PH-xxx	Thermal Physics and Statistical Mechanics	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-
4.	PH-xxx	Digital Electronics	PCC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
5.	PH-xxx	Physics Lab 2 (Thermal & Electronics)	PCC	3	0	0	6	0	4	-	50	-	-	50
6.	HSS-ELE	HSS Elective Course	HSS MEC	3	2	1	0	0	0	20-35	-	20-30	40-50	-
		<b>TOTAL</b>		<b>20</b>	<b>12</b>	<b>3</b>	<b>10</b>							
<b>Spring Semester</b>														
1.	PH-xxx	Elements of condensed matter Physics	PCC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
2.	PH-xxx	Mathematical Physics I	PCC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
3.	PH-xxx	Applied Optics	PCC	4	3	1	0		2	20-35	-	20-30	40-50	-
4.	PH-xxx	Nuclear Physics and its applications	PCC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
5.	PH-xxx	Spectroscopy & Laser Physics	PCC	3	3	0	0	3	0	20-35	-	20-30	40-50	-
6.	PH-xxx	Physics Lab 3 (Optics + Atomic Physics)	PCC	3	0	0	6	0	6	-	50	-	-	50
7.	PH-xxx	Technical Communication	PCC	2	1	1	0	0	0	-	-	50	50	-
		<b>TOTAL</b>		<b>21</b>	<b>16</b>	<b>2</b>	<b>6</b>							





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Teaching Scheme					Contact Hours/Week			Exam Duration (Hrs.)		Relative Weight (%)					
S. No.	Subject Code	Course Title	Subject Area	Credits	L	T	P	Theory	Practical	CWS	PRS	MTE	ETE	PRE	
<b>Autumn Semester</b>															
1.	PH-xxx	Semiconductor Devices and Applications	PCC	4	3	1	-	3	0	20-35	-	20-30	40-50	-	
2.	PH-xxx	Plasma and space physics	PCC	4	3	1	0	3	0	20-35	-	20-30	40-50	-	
3.	PH-xxx	Programme Elective – I	PEC	3	3	0	0	3	0	20-35	-	20-30	40-50	-	
4.	PH-xxx	Programme Elective – II	PEC	3	3	0	0	3	0	20-35	-	20-30	40-50	-	
5.	PH-xxx	Project* stage - 1 (optional)	PEC	3	3	0	0	3	0	20-35	-	20-30	40-50	-	
6.	MSC-2	Minor Specialization Course- II	MSC	3/4	3	0/1	0	3	-	20-35	-	20-30	40-50	-	
7.	MSC-3	Minor Specialization Course- III	MSC	3/4	3	0/1	0	3	-	20-35	-	20-30	40-50	-	
<b>Total</b>				<b>14/22</b>											
<b>Spring Semester</b>															
1.	PH-xxx	Programme Elective - III	Project* stage - 2	PEC	3	3	0	-	3	0	20-35	-	20-30	40-50	-
2.	PH-xxx	Programme Elective - IV		PEC	3	3	0	-	3	0	20-35	-	20-30	40-50	-
3.	PH-xxx	Programme Elective - V		PEC	3	3	0	-	3	0	20-35	-	20-30	40-50	-
4.	PH-xxx	Programme Elective - VI	PEC	3	3	0	-	3	0	20-35	-	20-30	40-50	-	
5.	PH-xxx	Programme Elective - VII	PEC	3	3	0	-	3	0	20-35	-	20-30	40-50	-	
6.	MSC-4	Minor Specialization Course-IV	MSC	3/4	3	0/1	0	3	-	20-35	-	20-30	40-50	-	
7.	MSC-4	Minor Specialization Course-V	MSC	3/4	3	0/1	0	3	-	20-35	-	20-30	40-50	-	
<b>Total</b>				<b>15/23</b>											

\*Project only for 8 and above CGPA.

Students who wish to exit with BS Degree after four years must inform Dean of Academic Affairs before completing 7<sup>th</sup> Semester.

