

Teaching Plan of Department of Physics

Session 2023-24

Bachelor of Science (Honours) Major In Physics

4-Year Undergraduate Programme

4-YEAR UNDERGRADUATE PROGRAMME

MJ-1: Foundation of Physics -1

UNIT – I: Preliminary Math. Methods

Topics	Name of the Teacher	No of Class
Vector Analysis,	Dr. Aminur Rahaman	6
Vector Integration,		8
Orthogonal Curvilinear Coordinates	Mr. Santipada Maity	5
Analytic functions:		4
Differential Equation		5
Partial Differential Equation		4
<i>NB: One Class test will be conducted after completion of two topics</i>		

UNIT – II: Introduction to Thermodynamics

Topics	Name of the Teacher	No of Class
Basics of Kinetic Theory	Dr. Arindam Pal	2
Thermodynamic Description of system:		3
First law of thermodynamics		5
Second Law of Thermodynamics	Mr. Kali Krishna Giri	7
Entropy		5
Third law of thermodynamics		1
Theory of Radiation		7
<i>NB: One Class test will be conducted after completion of two topics</i>		

SEC1P: Introduction to Python programming and Graph Plotting

Topics	Name of the Teacher	No of Class
Introduction	Dr. Aminur Rahaman	11
The python data types	Mr Sourav Mishra	12
Problems and Applications	Mr. Santipada Maity	12
Introduction of graph plotting	Mr. Santipada Maity	10

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MI – 1T: Mathematical Physics and Mechanics

Topics	Name of the Teacher	No of Class
Differential equations	Dr.Aminur ahaman	5
Vector Calculus	Mr. kali Krishna Giri	8
Fundamentals of Dynamics		5
Gravitation and central force motion	Mr. Sourav Mishra	6
Rotational Dynamics		6
Motion under central forces		5
General properties of matter	Mr. Swadesh Ranjan Bhakta	10

MI – 1P: Mathematical Physics and Mechanics (Practical)

1. Dr. Arindam pal
2. Dr. Aminur Rahaman
3. Mr. Jadab Kumar Samanta

Semester-II

Teaching Plan of Department of Physics Bachelor of Science (Honours) Major In Physics

4-Year Undergraduate Programme

MJ-2T: Foundation of Physics -2

UNIT – I: Preliminary Classical Mechanics

Topics	Name of the Teacher	No of Class
Introduction	Dr. Aminur Rahaman	5
Dynamics of a system of particles		5
Rotating frame of reference		4
Motion under central forces:	Dr. Arindam Pal	10
Scattering		2
Mechanics of Continuum		6

NB: One Class test will be conducted after completion of two topics

UNIT – II: Basic Electricity & Magnetism

Topics	Name of the Teacher	No of Class
Electric Field and Electric Potential	Mr. Kali Krishna Giri	8
Electrostatic energy & Capacitor		4
Method of Images:		3
Dielectric Properties of Matter	Mr Sourav Mishra	3
Lorentz force	Mr. Santipada Maity	4
Magnetic Field		9
Magnetic Properties of Matter		4

SEC 2P: Basic Instrumentation

Topics	Name of the Teacher	No of Class
Basic ideas of measurement	Mr. Santipada Maity	1L + 2P
Resistances		1L + 2P
Analog and digital voltmeter and ammeter		3L + 7P
Digital multimeter	Mr Sourav Mishra	1L + 3P
Introduction to electrical household wiring: Concept of basic Electricity	Mr Sourav Mishra	2L + 3P
Circuit connection and wiring	Mr. Swadesh Ranjan Bhakta	4L + 8P
Safety and security	Mr. Kali Krishna Giri	2L + 1P
One short project	Dr. Arindam Pal, Dr. Aminur Rahaman	5P

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MI-2: Thermal Physics and Statistical Mechanics

Topics	Name of the Teacher	No of Class
Thermodynamic Description of system	Mr. Kali Krishna Giri	15
Thermodynamic Potentials	Mr Sourav Mishra	10
Kinetic Theory of Gases	Mr. Swadesh Ranjan Bhakta	7
Theory of Radiation	Mr Sourav Mishra	6
Statistical Mechanics	Dr. Aminur Rahaman	7

MI-2: Thermal Physics and Statistical Mechanics (Practical)

1. Dr. Arindam pal
2. Dr. Aminur Rahaman
3. Mr. Jadab Kumar Samanta

Teaching Plan of Department of Physics 2023-24
Bachelor of Science with Physics (Multidisciplinary Studies)
3-Year Undergraduate Programme

MJ A1/B1T: Mathematical Methods and Mechanics (including STR)

(To be studied by the students taken Physics as Discipline-A)

Topics	Name of the Teacher	No of Class
Differential equations	Mr. Kali Krishna Giri	5
Vector Calculus		8
Fundamentals of Dynamics	Mr Sourav Mishra	4
Gravitation and central force motion		5
Rotational Dynamics		5
Motion under central forces	Mr. Swadesh Ranjan Bhakta	5
General properties of matter		8
Special Theory of Relativity		5

MJ A1/B1P: Practical

1. Dr.Arindam Pal
2. Dr.Aminur Rahaman
3. Mr. Jadab Kumar Samanta

SEC1P: Introduction to Python programming and Graph Plotting

Topics	Name of the Teacher	No of Class
Introduction	Dr. Aminur Rahaman	11
The python data types	Mr Sourav Mishra	12
Problems and Applications	Mr. Santipada Maity	12
Introduction of graph plotting	Mr. Santipada Maity	10

PHSMI 01/C1 : Mathematical Physics and Mechanics (Practical)

(To be studied by the students taken Physics as Discipline-C)

1. Dr. Arindam pal
2. Dr. Aminur Rahaman
3. Mr. Jadab Kumar Samanta

Semester –II

BIT: Mathematical Methods and Mechanics (including STR) *(To be studied by the students taken Physics as Discipline-B)*

Topics	Name of the Teacher	No of Class
Differential equations	Mr. Kali Krishna Giri	5
Vector Calculus		8
Fundamentals of Dynamics	Mr Sourav Mishra	4
Gravitation and central force motion		5
Rotational Dynamics		5
Motion under central forces	Mr. Swadesh Ranjan Bhakta	5
General properties of matter		8
Special Theory of Relativity		5

MJ A1/B1P: Practical

1. Dr.Arindam Pal
2. Dr.Aminur Rahaman
3. Mr. Jadab Kumar Samanta

SEC 2P: Basic Instrumentation

Topics	Name of the Teacher	No of Class
Basic ideas of measurement	Mr. Santipada Maity	1L + 2P
Resistances		1L + 2P
Analog and digital voltmeter and ammeter		3L + 7P
Digital multimeter	Mr Sourav Mishra	1L + 3P
Introduction to electrical household wiring: Concept of basic Electricity	Mr Sourav Mishra	2L + 3P
Circuit connection and wiring	Mr. Swadesh Ranjan Bhakta	4L + 8P
Safety and security	Mr. Kali Krishna Giri	2L + 1P
One short project	Dr. Arindam Pal, Dr. Aminur Rahaman	5P

PHSMI 02/C2 : Thermal Physics and Statistical Mechanics (Practical)

(To be studied by the students taken Physics as Discipline-C)

1. Dr. Arindam pal
2. Dr. Aminur Rahaman
3. Mr. Jadab Kumar Samanta