

**DEPARTMENT OF PHYSICS**  
**TURA GOVERNMENT COLLEGE, TURA**  
**SYLLABUS DISTRIBUTION 2023-2024**

**I-SEMESTER SYLLABUS DISTRIBUTION**  
**July 2023-December 2023**

**PHY01 (T) (5 Units)**

UNIT	TOPICS	No. of Lectures	LECTURER
I	Mathematical Physics: Vectors, Differential Equations.	15	RB
II	Inertial and Non-inertial frame, Central forces, Systems of Particles.	25	JS
III	Rigid body motion.	6	RB
III	Elasticity, Fluids.	24	CL
IV	Simple Harmonic Motion, Damped Oscillations, Waves.	30	BM
V	Ultrasonic, Sound, Acoustics of Buildings.	20	TM

**III-SEMESTER SYLLABUS DISTRIBUTION 2021-22**  
**July 2023-December 2023**

**PHY03 (T) (4 Units)**

UNIT	TOPICS	No. of Lectures	LECTURER
I	Review of Kinetic Theory of gases, Transport phenomena, etc	25	JS
II	Liquefaction of gases, Black body radiation.	10	BM
III	Optics: Fermat's principle, General theory of image formation, aberration, etc	20	RB
IV	Optics: interference of light, Diffraction of light.	20	CL
IV	Optics: Polarization.	6	BM
V	Laser, Fibre optics	9	TM

**V-SEMESTER SYLLABUS DISTRIBUTION 2021-22**  
**July 2023-December 2023**

**PHY05 (T-A) (5 Units)**

UNIT	TOPICS	No. of Lectures	LECTURER
I	Mathematical Physics: Vector, curvilinear coordinates, Matrices, Complex variables	35	JS
II	Mathematical Physics: Ordinary differential equation, Legendre Polynomial, etc	25	CL
III	Mathematical Physics: Beta & Gamma functions, Tensor	15	TM
IV	Quantum Mechanics: Particle wave packets etc	20	BM
V	Quantum Mechanics: Application of Schrodinger equation etc	25	BM

**PHY05 (T-B) (6 Units)**

UNIT	TOPICS	No. of Lectures	LECTURER
I	Classical Mechanics: Limitation of Newtonian formulation, Constraints, etc	15	RB
II	Electrodynamics: Gauss' Law, Poisson and Laplace's equations, etc	22	CL
III	Electrodynamics: Electromagnetic Potentials, Magnetic Vector potentials, etc	18	RB
IV	Thermodynamics relations.	8	JS
IV	Thermodynamics: Statistics and probability, Density distribution in phase space, etc.	19	RB
V	Statistical Mechanics: Thermal equilibrium between two systems, Quantum statistics, etc	26	TM
VI	Conventional Energy: Fossil fuel and Nuclear energy, renewable energy, etc	12	TM

Note: TM - Tejan A. Momin, RB - Reuter Balzack M. Sangma, CL - Cheerfulness Lyngdoh, JS - Jojrang Garnett D. Shira, BM - Benjamin Myllhem

*Tejan A. Momin*  
HOD

Department of Physics  
Tura Government College, Tura



*Principal*  
Principal

Tura Government College, Tura

**DEPARTMENT OF PHYSICS**  
**TURA GOVERNMENT COLLEGE: TURA**

**II-SEMESTER SYLLABUS DISTRIBUTION 2023-24 (under NEP 2020)**  
(Implemented from 2023-2024 session)  
February 2024 – May 2024

**PHY-150: ELECTRICITY AND MAGNETISM, OPTICS AND ELECTRONICS**  
(Contact Hours: 75, Credits: 4)

UNIT	TOPICS	LECTURER
I	Electricity & Magnetism	CL+BM
II	Theory of image formation and matrix optics: Fermat's Principle etc. and General theory of image formation, Matrix optics	RB+TM
III	Electronics-I	BM+JS

**IV- SEMESTER SYLLABUS DISTRIBUTION 2023-24(under Syllabus 2020)**  
February 2024 – May 2024

**PHY04 (T) (3 Units)**

UNIT	TOPICS	LECTURER
I	Special theory of relativity	TM
II	Quantum Mechanics: old quantum theory, de-Broglie relation etc	BM
III	Atomic Physics: atomic structure, positive ray analysis, x-rays	RB
IV	Nuclear Physics: Radioactivity, Nuclear fission etc	JS
IV	Nuclear Physics: Nuclear fusion, Cosmic rays, elementary particle	BM
V	Solid State Physics: Crystal Structure, Diffraction by crystal, free electron theory of solid, superconductivity, etc	CL

**VI- SEMESTER SYLLABUS DISTRIBUTION 2023-24(under Syllabus 2020)**  
February 2024 – May 2024

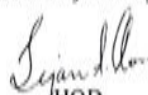
**PHY06 (T-A) (4 Units)**

UNIT	TOPICS	LECTURER
I	Crystal Structure, Diffraction by crystals, Brillouin Zones, Crystal Binding, Lattice Vibration.	CL
II	Free Electron Model, Band Theory, Magnetism, Properties of Superconductors	BM
III	FET, OP-AMP, Amplifiers, Oscillators, Elements of Communication Systems, TTL Logic Families	TM+JS
IV	Classification of Computers. Fortran etc..	RB

**PHY06 (T-B) (5 Units)**

UNIT	TOPICS	LECTURER
I	Vector Atom Model, Zeeman Effect, Spectrum of Alkali Elements, Two Electron System	JS
II	Molecular Spectra, Vibrating diatomic molecule as a harmonic oscillator, Electronic Spectra, Raman Effect, Fundamental ideas of UV and IR Spectroscopy	RB
III	Basic Properties of Nucleus, Nuclear Model, Nuclear Forces, Radioactivity, Nuclear Reactions, Nuclear Fission, Nuclear Fusion	TM+BM
IV	Elementary Particles, Fundamental Interactions, Pair Production, Resonant Particles, Gell-Mann Nishijima Scheme, Quark Model,	CL
V	Stellar Evolution, Spectral Classification of Stars, Star Systems, Significance of Sun.	BM

Note: TM: Tejan A Momin; RB: Reuter Balzaek M Sangma; CL: Cheerfulness Lyngdoh; JS: Jojrang Garnett D Shira; BM: Benjamin Myllem.

  
HOD,  
Department of Physics,  
Tura Government College, Tura



  
Principal,  
Tura Government College, Tura