SYLLABUS PLAN: 3rd SEMESTER 2022-23

B.Sc.-II: COMPUTER PROGRAMMING AND THERMODYNAMICS

Week	Topics
22.08.2022 –27.08.2022	• Second law of thermodynamics, Carnot theorem,
29.08.2022 –03.09.2022	• Absolute scale of temperature, Absolute Zero, Entropy, show that dQ/T =0,
05.09.2022 –10.09.2022	• T-S diagram Nernst heat law,
12.09.2022 –17.09.2022	• Joule's free expansion, Joule Thomson (Porous Plug) experiment.
19.09.2022 –24.09.2022	• Joule-Thomson effect. Liquefaction of gases.
26.09.2022 –01.10.2022	• Air pollution due to internal combustion Engine.
03.10.2022 –08.10.2022	• Derivation of Clausius-Clapeyron latent heat equation.
10.10.2022 –15.10.2022	• Phase diagram and triple point of a substance. Development of Maxwell thermodynamical relations.
17.10.2022 –21.10.2022	• Application of Maxwell relations in the derivation of relations between entropy, specific heats and thermodynamic variables.
27.10.2022 –05.11.2022	• Thermodynamic functions: Internal energy (U),
07.11.2022 –12.11.2022	• Helmholtz function (F), Enthalpy H),
14.11.2022 –19.11.2022	• Gibbs function (G) and the relations between them.
21.11.2022 –26.11.2022	• Computer organisation, Binary representation, Algorithm development, flow charts and their interpretation.
28.11.2022 –03.12.2022	• FORTRAN Preliminaries; Integer and floating point arithmetic expression, built in functions
05.12.2022 –10.12.2022	• executable and non-executable statements, input and output statements, Formats, I.F., DO and GO TO statements,
12.12.2022 –14.12.2022	• Dimension arrays statement function and function subprogram.

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SYLLABUS PLAN: 1st SEMESTER 2022-23

B.Sc.-I : MECHANICS AND ELECTRICITY

Week	Topics
22.08.2022 –27.08.2022	• Gradient ,curl, Divergence, • Gauss'divergence theorem, stoke's theorem • Applications
29.08.2022 –03.09.2022	• Electrostatic Fields, Laplace's , Poison Equation
05.09.2022 –10.09.2022	• Gauss's theorem and it's applications, Electrostatic pressure, Energy Density
12.09.2022 –17.09.2022	• Magnetic induction, flux , Divergence and curl of Magnetic field,Dimagnetic , Paramagnetic, Ferromagnetic
19.09.2022 –24.09.2022	• Langevin theory of para and Ferromagnetic theorey
26.09.2022 –01.10.2022	• Hystresis, Hystresis curve and it's importanceMaxwell equations and its derivations,
03.10.2022 –08.10.2022	• displacement current ,scalar potentials theorem
10.10.2022 –15.10.2022	• boundary conditions at the interface propagation of electromagnetic waves • Pointing Vector • Pointing Theorem,
17.10.2022 –21.10.2022	• Moment of inertia,Torque, Angular momentum, kinetic Energy of rotation rotation
27.10.2022 –05.11.2022	• theorem of perpendicular and parallel axes, moment of inertia of solid bar, Spherical shell, solid cylinder , acceleration of body rolling down the inclined plane
07.11.2022 –12.11.2022	Law of conservation of linear momentum law of conservation of angular momentum
14.11.2022 –19.11.2022	• Law of conservation of mechanical energy centre of mass
21.11.2022 –26.11.2022	Generalised co-ordinate, displacement ,velocity ,acceleration ,momentum ,force
28.11.2022 –03.12.2022	Generalised potentials, Hamilton's Variational principle
05.12.2022 –10.12.2022	• Lagrange's equations of motion,Linear Harmonic Oscillator,
12.12.2022 –14.12.2022	• Simple Pendulum,Atwood's Machine

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