

Department of Physics
SEMESTER – VI(UG/SHPHS/C-14) CORE-T-14
Statistical Mechanics
Credit-4; Full Marks: 25
Subject Teacher: DR BIPUL SARKAR
SYLLABUS UNITIZATION

| Month | Week | Topics to be taught |
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| March | 2 | Spectral Distribution of Black Body Radiation. Planck's Quantum Postulates. |
| March | 3 | Planck's Law of Blackbody Radiation: Experimental Verification |
| March | 4 | Deduction of (1) Wien's Distribution Law, (2) Rayleigh-Jeans Law |
| April | 1 | Stefan-Boltzmann Law, (4) Wien's Displacement law from Planck's law. |
| April | 2 | Class Test |
| April | 3 | B-E distribution law, Thermodynamic functions of a strongly Degenerate Bose Gas, |
| April | 4 | Bose Einstein condensation, properties of liquid He (qualitative description), |
| May | 1 | Radiation as a photon gas and Thermodynamic functions of photon gas |
| May | 2 | Bose derivation of Planck's law. |
| May | 3 | Class Test |
| May | 4 | Fermi-Dirac Distribution Law |
| June | 1 | Thermodynamic functions of a Completely and strongly Degenerate Fermi Gas, Fermi Energy, |
| June | 2 | Electron gas in a Metal, Specific Heat of Metals, |
| June | 3 | Relativistic Fermi gas, White Dwarf Stars, Chandrasekhar Mass Limit. |
| June | 4 | Class Test |