

Third year of Five Years integrated M.Sc (Physics)  
M.Sc. - III, Semester –VI

	L	T	P	C
MP 304 : Electrostatics and Plasma Physics	3	2	0	5

- **MAXWELL'S EQUATIONS** (07 Hours)  
Maxwell's Equations In Free Space And Matter
- **ELECTROMAGNETIC WAVES** (07 Hours)  
EM Propagation In Different Media
- **POTENTIALS AND FIELDS** (07 Hours)  
Potential formulation, Continuous distribution, Point charge,
- **INTRODUCTION TO PLASMA** (14 Hours)  
Magnetohydrodynamic equations in Plasma, Magnetic diffusion, Viscosity and pressure, Magnetohydrodynamic flow between boundaries with crossed electric and magnetic field, Pinch effect.
- **WAVES IN PLASMA** (07 Hours)  
Magnetohydrodynamic waves, Plasma oscillations, Short wavelength limit on plasma oscillation and Debye screening distance

(Total Contact Time (Theory) : 42 Hours)

**BOOKS RECOMMENDED :**

- |                       |   |                             |      |
|-----------------------|---|-----------------------------|------|
| 1. Jackson, J.D.      | <i>Classical Electrodynamics, 3rd Edition:</i>      | John Wiley India            | 2007 |
| 2. Griffiths, D.J.    | <i>Introduction to electrodynamics: 3rd Edition</i> | Prentice Hall,              | 1999 |
| 3. Das A. C.,         | <i>Space plasma Physics</i>                         | Narosa                      | 2004 |
| 4. Chen F. F,         | <i>Intro to Plasma Physics</i>                      | Plenum                      | 2004 |
| 5. Freidberg, J. P. , | <i>Plasma Physics and Energy Fusion,</i>            | Cambridge University Press; | 2008 |