

Master of Science (M.Sc.) – Physics — Common Syllabus

Duration: 2 years (4 semesters) | Evaluation: Theory exams, Practicals, Viva Voce, Dissertation/Project

Course Structure

- Duration: 2 years (4 semesters).
- Each semester includes 4–5 core papers, practicals, and electives.
- Credits: Typically 3–4 per paper.
- Evaluation: Written exams, internal assessments, practicals, and dissertation/project work.

Semester I — Suggested Papers

- Mathematical Methods in Physics – I
- Classical Mechanics
- Quantum Mechanics – I
- Electronics and Instrumentation
- General Physics Laboratory – I

Semester II — Suggested Papers

- Mathematical Methods in Physics – II
- Electrodynamics and Plasma Physics
- Quantum Mechanics – II
- Thermodynamics and Statistical Mechanics
- General Physics Laboratory – II

Semester III — Suggested Papers

- Nuclear and Particle Physics
- Condensed Matter Physics – I
- Atomic and Molecular Physics
- Computational Physics / Numerical Methods
- Advanced Physics Laboratory – I / Elective Paper

Semester IV — Suggested Papers

- Condensed Matter Physics – II
- Solid State and Materials Science
- Spectroscopy and Laser Physics
- Project / Dissertation / Viva Voce
- Elective Paper – (Astrophysics / Nanoscience / Advanced Electronics)

Electives (Indicative List)

- Astrophysics and Space Science
- Advanced Electronics and Communication
- Nanoscience and Nanotechnology
- Material Science and Thin Films
- Computational Physics and Simulation Techniques
- Nonlinear Dynamics and Chaos
- Quantum Field Theory

Notes:

- This syllabus is based on the UGC model curriculum and major Indian university syllabi for M.Sc. Physics.
- Each paper generally carries 100 marks, with 70% for external and 30% for internal evaluation.
- Students must complete a dissertation or research project in the final semester.
- Laboratory work includes advanced experiments in optics, electronics, nuclear, and solid-state physics.

Prepared by: ChatGPT — Common M.Sc. Physics Syllabus Template

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