

Master of Science (M.Sc.) Program in Physics Curriculum

| Cat. | Course Number, Course Title | L-T-P | Credits | Cat. | Course Number, Course Title | L-T-P | Credits |
|---------------------|-----------------------------|-------|--------------|--------------------|----------------------------------|-------|--------------|
| I Semester | | | | II Semester | | | |
| C | PH511 Mathematical Physics | 3-0-0 | 3 | C | PH521 Atomic and Nuclear Physics | 3-0-0 | 3 |
| C | PH512 Classical Mechanics | 3-0-0 | 3 | C | PH522 Condensed Matter Physics | 3-0-3 | 4 |
| C | PH513 Quantum Mechanics | 3-0-0 | 3 | C | PH523 Electrodynamics | 3-0-0 | 3 |
| C | PH514 Electronics | 3-0-3 | 4 | C | PH524 Advanced Quantum Mechanics | 3-0-0 | 3 |
| C | PH515 Statistical Physics | 3-0-0 | 3 | E | Elective I | 3-0-0 | 3 |
| | | | <i>Total</i> | | | | <i>Total</i> |
| | | | 16 | | | | 16 |
| III Semester | | | | IV Semester | | | |
| T | Thesis | | 15 | T | Thesis | | 15 |
| E | Elective II | 3-0-0 | 3 | E | Elective III | 3-0-0 | 3 |
| | | | <i>Total</i> | | | | <i>Total</i> |
| | | | 18 | | | | 18 |

Electives

| | | | |
|---|---|----|--|
| 1 | Astrophysics | 9 | Semiconductor device technology |
| 2 | Quantum Field Theory | 10 | Electronic Transport in Mesoscopic Systems |
| 3 | Particle Physics | 11 | Vacuum Systems and Thin Film Technology |
| 4 | General Theory of Relativity | 12 | Quantum Cryptography and Coding |
| 5 | Magnetism and Superconductivity | 13 | Relativistic Quantum Mechanics |
| 6 | Principles of Scanning Tunneling Microscope | 14 | Classical and Quantum Optics |
| 7 | Materials and device characterization | 15 | Computational Physics |
| 8 | Quantum Information Processing | | |

| S. No. | Category | Course Category Title | Total Courses | Total Credits | Total Courses |
|--------------|----------|-----------------------|---------------|---------------|---------------|
| 1 | C | Compulsory | 9 | 29 | 13 |
| 2 | E | Electives | 3 | 9 | 2 |
| 3 | T/P | Thesis | 1 | 30 | 1 |
| <i>Total</i> | | | | 68 | |