**Course Structure of M.Sc.(Electronics)**

1. There shall be four theory papers and laboratory course in each of first three semesters. The fourth semester will be entirely devoted to major project work of six months duration.
2. In each laboratory course the candidates, besides the classroom experiments, shall do mini project, workshop and seminar.
3. An outline of the syllabus is given below:

**Semester I**

**Theory**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Paper Code | Title | Type | Marks | Credit |
| ELE101 | Network Analysis and Synthesis | Core Course | 100 | 4 |
| ELE102 | Devices and Linear Integrated Circuits | Core Course | 100 | 4 |
| ELE103 | Switching Theory and Digital Design | Core Course | 100 | 4 |
| ELE104 | Introduction to Computer and Programming | Core Course | 100 | 4 |
|  | Total |  | 400 | 16 |

**Practical**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper Code |  | Marks | Credit |
| ELE105 | Lab Course I: Analog and Digital Electronics Lab | 100 | 4 |
| Lab Course II: Programming in ‘C’ | 100 | 4 |
| Mini Project and Seminar | 25 | 1 |
|  | Total | 225 | 9 |

**Semester II**

**Theory**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Paper Code | Title | Type | Marks | Credit |
| ELE201 | Control System and Data Acquisition System | Core Course | 100 | 4 |
| ELE202 | Electromagnetic Theory and Antenna | Core Course | 100 | 4 |
| ELE203 | Advanced Microprocessor and Interfacing | Core Course | 100 | 4 |
| ELE204 | Digital Communication | Core Course | 100 | 4 |
|  | Total |  | 400 | 16 |

**Practical**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper Code |  | Marks | Credit |
| ELE205 | Lab Course III: Experiments on Control System, Data Acquisition System, Communication System, and Power Electronics | 100 | 4 |
| Lab Course IV: Experiments on Microprocessor (8085 & 8086), Microcontroller and its Interfacing | 100 | 4 |
| Mini Project and Seminar | 25 | 1 |
|  | Total | 225 | 9 |

**Semester III**

**Theory**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Paper Code | Title | Type | Marks | Credit |
| ELE301 | IC Technology and VLSI Design | Core Course | 100 | 4 |
| ELE302 | Opto-Electronics | Core Course | 100 | 4 |
| ELE303 | Digital Signal Processing | Core Course | 100 | 4 |
| **Any on from the following (E-1, E-2, E-3, E-4, E-5)** | | | | |
| ELE304 E-1 | Data Communication and Computer Networking | Elective Course | 100 | 4 |
| ELE304 E-2 | Nanoelectronics | Elective Course | 100 | 4 |
| ELE304 E-3 | Digital Image Processing | Elective Course | 100 | 4 |
| ELE304 E-4 | Embedded System Design | Elective Course | 100 | 4 |
| ELE304 E-5 | Hardware Description Languages | Elective Course | 100 | 4 |
|  | Total |  | 400 | 16 |

**Practical**

|  |  |  |  |
| --- | --- | --- | --- |
| Paper Code |  | Marks | Credit |
| ELE305 | Lab Course V: Experiments on Digital Signal Processing (MATLAB Simulation) and Experiment on VLSI | 100 | 4 |
| Lab Course VI: Experiments on Opto-Electronics and expriments on selected Elective course. | 100 | 4 |
| Mini Project and Seminar | 25 | 1 |
|  | Total | 225 | 9 |

**Semester IV**

There will be no theory paper in fourth semester. The students are required to do a full time major project work for duration of six months in the institution assigned to them by Department. The examination and credit system will consists of the following:

|  |  |  |  |
| --- | --- | --- | --- |
|  | Paper | Marks | Credit |
| ELE-401 | A major project work | 425 | 17 |
| ELE-402 | Seminar and Viva-voce relating to major project work | 100 | 4 |
| ELE-403 | A General Seminar other than the Major Project Work | 100 | 4 |
|  | Total | 625 | 25 |

**Electronics Major in B.Sc. Programme**

|  |  |
| --- | --- |
| Course Code | Course Title |
| ELE 001 | Basics of Electronics |
| ELE 101  (B140101T) | Basic Circuit Theory and Network Analysis |
| ELE 102  (B140102P) | Circuit and Networks Lab |
| ELE 103  (B140201T) | Semiconductor Devices and Electronic Circuits |
| ELE 104  (B140202P) | Semiconductor Devices and Electronic Circuits Lab |
| ELE 201  (B140301T) | Analog Electronics |
| ELE 202  (B140302P) | Analog Electronics Lab |
| ELE 203  (B140401T) | Digital Electronics |
| ELE 204  (B140402P) | Digital Electronics Lab |
| ELE 301  (B140501P) | Electromagnetics and Antenna Fundamentals |
| ELE 302  (B140502P) | Microprocessor Programming and Interfacing |
| ELE 303  (B140503P) | Antenna and Microprocessor Lab |
| ELE 304  (B140601P) | Communication Electronics |
| ELE 305  (B140602P) | Linear Integrated Circuits |
| ELE 306  (B140603P) | IC and Communication Lab |
|  |  |

**Ph.D.**

|  |  |
| --- | --- |
| **Course Code** | **Core Title** |
| ELE 604 | Credit Seminar |
| ELE 605 | Microelectronic Devices |
| ELE 606 | Synthesis and Characterization of Electronic Materials |
| ELE 607 | Nanoelectronics |
| ELE 608 | Advanced Digital System Design |
| ELE 609 | Signal and System |
| ELE 610 | Advanced Digital Signal Processing |
| ELE 611 | VLSI Architectures for DSP Systems |
| ELE 612 | Digital IC Design using HDL |
| ELE 613 | Nanomaterials for Energy Applications |
| ELE 614 | Photovoltaic Devices, Sensors and Transducers |