

B.E. in Electronics and Communication Engineering

| I Semester – Chemistry Cycle | | | | | | | | | | |
|------------------------------|-------------|---|---------------------|----------------|----------|--------------------|-------------|-----------|-------------|---------|
| Sl. No. | Course Code | Course Title | Teaching Department | Theory Lecture | Tutorial | Practical/ Drawing | Examination | | | Credits |
| | | | | L | T | P | CIE Marks | SEE Marks | Final Marks | |
| 1 | 22MATEE101 | Mathematics I for Electrical Engineering Stream | Maths | 2 | 2 | 2 | 100 | 100 | 100 | 4 |
| 2 | 22CHEEE202 | Chemistry for Electrical Engineering Stream | Chemistry | 2 | 2 | 2 | 100 | 100 | 100 | 4 |
| 3 | 22CED201 | Computer-Aided Engineering Drawing | Mechanical | 2 | 0 | 2 | 100 | 100 | 100 | 3 |
| 4 | 22ESC102 | Introduction to Electrical Engineering | EEE | 3 | 0 | 0 | 100 | 100 | 100 | 3 |
| z | 22PLC102 | Introduction to Python Programming | ECE | 2 | 0 | 2 | 100 | 100 | 100 | 3 |
| 6 | 22ENG102 | Professional Writing Skills in English | Humanities | 1 | 0 | 0 | 50 | - | 50 | 1 |
| 7 | 22ICO102 | Indian Constitution | Humanities | 1 | 0 | 0 | 50 | - | 50 | 1 |
| 8 | 22SFH101 | Scientific Foundations of Health | ME | 1 | 0 | 0 | 50 | - | 50 | 1 |
| TOTAL | | | | | | | | | | 20 |

| II Semester - Physics Cycle | | | | | | | | | | |
|-----------------------------|-----------------------|---|---------------------|----------------|----------|--------------------|-------------|-----------|-------------|---------|
| Sl. No. | Course Code | Course Title | Teaching Department | Theory Lecture | Tutorial | Practical/ Drawing | Examination | | | Credits |
| | | | | L | T | P | CIE Marks | SEE Marks | Final Marks | |
| 1 | 22MATEE201 | Mathematics -II for Electrical Engineering Stream | Maths | 2 | 2 | 2 | 100 | 100 | 100 | 4 |
| 2 | 22PHYEE202 | Physics for Electrical Engineering Stream | Physics | 2 | 2 | 2 | 100 | 100 | 100 | 4 |
| 3 | 22ESCEC201 | Basic Electronics | ECE | 2 | 0 | 2 | 100 | 100 | 100 | 3 |
| 4 | 22ESC205 | Introduction to C Program | ESC | 2 | 0 | 2 | 100 | 100 | 100 | 3 |
| 5 | 22ETC204 | Introduction to robotics, electric vehicle system and 3D printing | ESC | 3 | 0 | 0 | 100 | 100 | 100 | 3 |
| 6 | 22ENG201 | Communicative English | Humanities | 1 | 0 | 0 | 50 | - | 50 | 1 |
| 7 | 22KSK101/ 22KBK102 | Sanskrutika Kannada/Balake Kannada | Humanities | 1 | 0 | 0 | 50 | - | 50 | 1 |
| 8 | 22IDTME201 | Innovation and Design Thinking | ME | 1 | 0 | 0 | 50 | - | 50 | 1 |
| TOTAL | | | | | | | | | | 20 |

| III Semester | | | | | | | | | | | |
|--------------|-----------------------|---|----------|-----------------------|----------|--------------------|----------------------|-------------|-----------|-------------|---------|
| Sl. No | Course Code | Course Title | Category | Teaching Hours / Week | | | | Examination | | | Credits |
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | Self-study Component | | | | |
| | | | | L | T | P | S | CIE Marks | SEE Marks | Total Marks | |
| 1 | 21MA3C02 | Transforms and Partial Differential Equations | BSC | 3 | 0 | 0 | 0 | 50 | 50 | 100 | 3 |
| 2 | 21EC3C01 | Network Analysis | PC | 2 | 2 | 0 | 0 | 50 | 50 | 100 | 3 |
| 3 | 21EC3C02 | Digital Electronics | PC | 3 | 0 | 2 | 0 | 50 | 50 | 100 | 4 |
| 4 | 21EC3C03 | Analog Electronics | PC | 3 | 0 | 0 | 0 | 50 | 50 | 100 | 3 |
| 5 | 21EC3C04 | Signals and Systems | PC | 2 | 2 | 0 | 0 | 50 | 50 | 100 | 3 |
| 6 | 21EC3C05 | Electromagnetic field theory | PC | 2 | 0 | 0 | 0 | 50 | 50 | 100 | 2 |
| 7 | 21EC3L01 | AEC Lab | PC | 0 | 0 | 2 | 0 | 50 | 50 | 100 | 1 |
| 8 | 21BG3C03 | Biology for Engineers | PI | 2 | 0 | 0 | 0 | 50 | 50 | 100 | 2 |
| 9 | 21KA3H01/ 21CI3H01 | Kannada/CIPE | HSC | 1 | 0 | 0 | 0 | 50 | - | 50 | 0 |

| | | | | | | | | | | | |
|------------------------------------|----------|---------------------------------|-----|---|---|---|---|-----|---|-----|----|
| 10 | 21EC3A01 | (AEC3) UNIX / SHELL Scripting | AEC | 0 | 0 | 2 | 0 | 50 | - | 50 | 1 |
| 11 | 21EC3U01 | Social Connect & Responsibility | UHV | 1 | 0 | 0 | 0 | 50 | - | 50 | 0 |
| TOTAL | | | | | | | | | | | 20 |
| Lateral Entry Students 21MA3N01 | | Additional Maths 1 | BSC | 2 | 2 | 0 | 0 | 100 | 0 | 100 | 0 |

| IV Semester | | | | | | | | | | | |
|-------------|-------------|--|----------|-----------------------|----------|--------------------|----------------------|-------------|-----------|-------------|---------|
| Sl. No | Course Code | Course Title | Category | Teaching Hours / Week | | | | Examination | | | Credits |
| | | | | Theory Lecture | Tutorial | Practical/ Drawing | Self-study Component | | | | |
| | | | | L | T | P | S | CIE Marks | SEE Marks | Total Marks | |
| 1 | 21MA4C02 | Statistics, Probability & Z-Transforms | BSC | 3 | 0 | 0 | 0 | 50 | 50 | 100 | 3 |
| 2 | 21EC4C01 | Digital Signal Processing | PC | 2 | 0 | 2 | 0 | 50 | 50 | 100 | 3 |
| 3 | 21EC4C02 | Hardware Descriptive and Verification Language | PC | 3 | 0 | 0 | 0 | 50 | 50 | 100 | 3 |
| 4 | 21EC4C03 | Linear Integrated Circuits | PC | 3 | 0 | 2 | 0 | 50 | 50 | 100 | 4 |

| | | | | | | | | | | | |
|---------------------------------------|------------------------|---|-----|---|---|---|---|-----|----|-----|----|
| 5 | 21EC4C04 | ARM Microcontrollers | PC | 3 | 0 | 0 | 0 | 50 | 50 | 100 | 3 |
| 6 | 21EC4L01 | ARM Microcontrollers Lab | PC | 0 | 0 | 2 | 0 | 25 | 25 | 50 | 1 |
| 7 | 21EC4L02 | HDVL Lab | PC | 0 | 0 | 2 | 0 | 25 | 25 | 50 | 1 |
| 8 | 21KA4H01/ 21CI4HO01 | Kannada/CIPE | HSC | 1 | 0 | 0 | 0 | 50 | - | 50 | 0 |
| 9 | 21EC4A01 | (AEC4) E- Waste management | AEC | 1 | 0 | 0 | 0 | 50 | 0 | 50 | 1 |
| 10 | 21EC4U01 | Universal Human Values & Prof. Ethics | UHV | 1 | 0 | 0 | 0 | 50 | 0 | 50 | 1 |
| 11 | 21EC4I01 | Summer Internship 1 | PI | To be completed during II/III Sem Vacation | | | | 50 | 50 | 100 | 2 |
| TOTAL | | | | | | | | | | | 20 |
| Lateral Entry Students 21MA4N01 | | Additional Maths 2 | BSC | 2 | 2 | 0 | 0 | 100 | 0 | 100 | 0 |

| SCHEME OF TEACHING AND EXAMINATION V SEMESTER | | | | | | | |
|--|--------------|--------------------------------------|-----------------|---|---|---|-----------|
| Sl. No. | Subject Code | Subject | Category | L | T | P | Cr. |
| 1 | EC5C01 | Digital Signal Processing | Department core | 3 | 2 | 0 | 4 |
| 2 | EC5C02 | Digital Design using Verilog | Department core | 3 | 0 | 2 | 4 |
| 3 | EC5C03 | Analog and Digital Communication | Department core | 4 | 0 | 0 | 4 |
| 4 | EC5C04 | Control Systems | Department core | 3 | 0 | 0 | 3 |
| 5 | EC5MXX | MOOC Elective | MOOC Elective | 3 | 0 | 0 | 3 |
| 6 | EC5C06 | Engineering Management | Management | 3 | 0 | 0 | 3 |
| 7 | EC5L01 | Communication Laboratory | Laboratory | 0 | 0 | 3 | 1.5 |
| 8 | EC5L02 | Digital Signal Processing Laboratory | Laboratory | 0 | 0 | 3 | 1.5 |
| Total Credits | | | | | | | 24 |
| Total Contact Hrs | | | | | | | 29 |
| 9 | EC5M01 | Joy of Computing with python | MOOC Elective | 3 | 0 | 0 | 3 |

| SCHEME OF TEACHING AND EXAMINATION VI SEMESTER | | | | | | | |
|---|--------------|---|---------------------|---|---|---|-----|
| Sl. No. | Subject Code | Subject | Category | L | T | P | Cr. |
| 1 | EC6C01 | CMOS VLSI Design | Department core | 3 | 0 | 0 | 3 |
| 2 | EC6C02 | Communication systems and coding theory | Department core | 3 | 0 | 0 | 3 |
| 3 | EC6C03 | Communication Networks | Department core | 3 | 0 | 0 | 3 |
| 4 | EC6C04 | Embedded Systems | Department core | 3 | 2 | 0 | 4 |
| 5 | EC6C05 | Engineering Economics | Economics | 3 | 0 | 0 | 3 |
| 6 | EC6E1XX | Department Elective - 1 | Department Elective | 3 | 0 | 0 | 3 |
| 7 | EC6L01 | Communication Networks Laboratory | Laboratory | 0 | 0 | 3 | 1.5 |
| 8 | EC6L02 | CMOS VLSI Laboratory | Laboratory | 0 | 0 | 3 | 1.5 |

| | | | | | | | |
|--------------------------|---------|--------------------------|-------------------------|---|---|---|-----------|
| 9 | EC6C06 | Minor Project | Project | 0 | 0 | - | 2 |
| Total Credits | | | | | | | 24 |
| Total Contact Hrs | | | | | | | 26 |
| 1 | EC6E101 | Bioinformatics | Department Elective - 1 | 3 | 0 | 0 | 3 |
| 2 | EC6E102 | Digital Image Processing | | 3 | 0 | 0 | 3 |
| 3 | EC6E103 | Neural Networks | | 3 | 0 | 0 | 3 |
| 4 | EC6E104 | Internet of Things | | 2 | 0 | 2 | 3 |

| SCHEME OF TEACHING AND EXAMINATION | | | | | | | |
|------------------------------------|--------------|-----------------------------------|--------------------------|---|---|---|------|
| VII SEMESTER | | | | | | | |
| Sl. No. | Subject Code | Subject | Category | L | T | P | Cr . |
| 1 | EC7C01 | Antenna and Microwave | Department core | 3 | 2 | 0 | 4 |
| 2 | EC7C02 | Wireless Communications | Department core | 3 | 2 | 0 | 4 |
| 3 | EC7E2XX | Department Elective - 2 | Department Elective | 3 | 0 | 0 | 3 |
| 4 | EC7E3XX | Department Elective - 3 | Department Elective | 3 | 0 | 0 | 3 |
| 5 | EC7IXX | Industry driven Elective | Industry driven Elective | 2 | 0 | 0 | 2 |
| 6 | EC7OXX | Open Elective | Open Elective | 2 | 0 | 0 | 2 |
| 7 | EC7L01 | Mixed mode VLSI design Laboratory | Laboratory | 0 | 0 | 2 | 1 |
| 8 | EC7L02 | Advance Communication Laboratory | Laboratory | 0 | 0 | 2 | 1 |
| 9 | EC7C03 | Seminar/ paper presentation | Seminar | 0 | 0 | 2 | 1 |
| 10 | EC7C04 | Project Phase - 1 | Project | 0 | 0 | 1 | 1 |
| 11 | EC7C05 | Competency Training | | 0 | 0 | 0 | 0 |
| Total Credits | | | | | | | 23 |
| Total Contact Hrs | | | | | | | 26 |

| | | | | | | | |
|---|---------|------------------------------|------------------------------------|---|---|---|---|
| 1 | EC7E201 | Optical Communication System | Department Elective (Elective - 2) | 3 | 0 | 0 | 3 |
| 2 | EC7E202 | Multimedia Communication | | 3 | 0 | 0 | 3 |
| 3 | EC7E203 | Network Security | | 3 | 0 | 0 | 3 |
| 4 | EC7E204 | System Verilog | | 3 | 0 | 0 | 3 |
| 5 | EC7E303 | Mixed Signal Design | | 3 | 0 | 0 | 3 |
| 6 | EC7I03 | IDE – 1: Docker | Industry driven Elective | 2 | 0 | 0 | 2 |
| 7 | EC7I04 | IDE – 2: VLSI Layout Design | | 2 | 0 | 0 | 2 |
| 8 | EC7O01 | Internet of Things | Open Elective | 2 | 0 | 0 | 2 |

| SCHEME OF TEACHING AND EXAMINATION | | | | | | | |
|------------------------------------|--------------|--|---------------------------------------|---|---|---|------|
| VIII SEMESTER | | | | | | | |
| Sl. No | Subject Code | Subject | Category | L | T | P | Cr . |
| 1 | EC8E4XX | Department Elective - 4 | Department Elective | 3 | 0 | 0 | 3 |
| 2 | EC8E5XX | Department Elective - 5 | Department Elective | 3 | 0 | 0 | 3 |
| 3 | EC8E6XX | Department Elective - 6 | Department Elective | 3 | 0 | 0 | 3 |
| 4 | EC8C01 | Internship | Internship | 0 | 0 | - | 3 |
| 5 | EC8C02 | Major Project | Major Project | 0 | 0 | 8 | 4 |
| Total Credits | | | | | | | 16 |
| Total Contact Hrs. | | | | | | | 17 |
| Sl. No | Subject Code | Subject | Category | | | | |
| 1 | EC8E401 | Artificial Intelligence | Department Elective (Elective - 4) | 3 | 0 | 0 | 3 |
| 2 | EC8E402 | Speech Processing | | 3 | 0 | 0 | 3 |
| 3 | EC8E403 | Signal Processing and Machine Learning | | 3 | 0 | 0 | 3 |
| 4 | EC8E501 | Satellite Communication | Department Elective (Elective - 5) | 3 | 0 | 0 | 3 |
| 5 | EC8E502 | Mobile Computing | | 3 | 0 | 0 | 3 |
| 6 | EC8E503 | Wireless Networks | | 3 | 0 | 0 | 3 |
| 7 | EC8E601 | Low Power VLSI | Department Elective (Elective - 6) | 3 | 0 | 0 | 3 |
| 8 | EC8E602 | Automotive Electronics | | 3 | 0 | 0 | 3 |
| 9 | EC8E603 | Nano Electronics | | 3 | 0 | 0 | 3 |
| 10 | EC860X | Reconfigurable Computing | | 3 | 0 | 0 | 3 |

* Course integrated with Laboratory