

4 year B. Tech. Degree Course – Electronics and Computer Engineering w.e.f. Batch 2024-25

FIRST SEMESTER

| Sr. No. | Course | | Course Category | Contact Hours | | | | Credits |
|---------|------------|---|-----------------|---------------|---|---|-----------|-------------|
| | No. | Title | | L | T | P | Total | |
| 1. | 15B11MA111 | Mathematics-1 | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | 15B11PH111 | Physics-1 | BSC | 3 | 1 | 0 | 4 | 4 |
| 3. | 15B11CI111 | Software Development Fundamentals-1 | ESC | 3 | 1 | 0 | 4 | 4 |
| 4. | 15B11HS112 | English | HSC | 1 | 0 | 2 | 3 | 2 |
| 5. | 15B17PH171 | Physics Lab-1 | BSC | 0 | 0 | 2 | 2 | 1 |
| 6. | 24B15CS111 | Software Development Fundamentals Lab-1 | ESC | 0 | 0 | 2 | 2 | 1 |
| 7. | 18B15GE112 | Workshop | ESC | 0 | 0 | 3 | 3 | 1.5 |
| 8. | 24B11EC111 | Basic Electronics | ESC | 3 | 1 | 0 | 4 | 4 |
| 9. | 24B15EC111 | Basic Electronics Lab | ESC | 0 | 0 | 2 | 2 | 1 |
| | | TOTAL | | | | | 28 | 22.5 |

SECOND SEMESTER

| Sr. No. | Course | | Course Category | Contact Hours | | | | Credits |
|---------|------------|--|-----------------|---------------|---|---|-----------|-------------|
| | No. | Title | | L | T | P | Total | |
| 1. | 15B11MA211 | Mathematics-2 | BSC | 3 | 1 | 0 | 4 | 4 |
| 2. | 15B11PH211 | Physics-2 | BSC | 3 | 1 | 0 | 4 | 4 |
| 3. | 15B11CI211 | Software Development Fundamentals -2 | ESC | 3 | 1 | 0 | 4 | 4 |
| 4. | 15B17PH271 | Physics Lab-2 | BSC | 0 | 0 | 2 | 2 | 1 |
| 5. | 24B15CS121 | Software Development Fundamentals Lab- 2 | ESC | 0 | 0 | 2 | 2 | 1 |
| 6. | 24B16HS111 | Life Skills & Professional Communication Lab | HSC | 0 | 0 | 2 | 2 | Qualifying |
| 7. | 18B15GE111 | Engineering Drawing & Design | ESC | 0 | 0 | 3 | 3 | 1.5 |
| 8. | 24B11HS111 | Universal Human Values (UHV) | HSC | 2 | 1 | 0 | 3 | 3 |
| | | TOTAL | | | | | 24 | 18.5 |

THIRD SEMESTER

| S. No. | Course | | Course Category | Contact Hours | | | | Credits |
|--------|-------------|-------------------------------------|-----------------|---------------|---|---|-------|------------|
| | Course Code | Course Title | | L | T | P | Total | |
| 1. | 15B11MA301 | Probability and Random Processes | BSC | 3 | 1 | - | 4 | 4 |
| 2. | 15B11CI518 | Data Structures and Algorithms | PCC | 3 | 1 | - | 4 | 4 |
| 3. | 24B11EC211 | Electronic Devices and Circuits | PCC | 3 | 1 | - | 4 | 4 |
| 4. | 18B11EC215 | Digital Circuit Design | PCC | 3 | 1 | - | 4 | 4 |
| 5. | 15B11GE301 | Environmental Science | OMC | 3 | - | - | 3 | Qualifying |
| 6. | 15B17CI578 | Data Structures and Algorithms Lab | PCC | - | - | 2 | 2 | 1 |
| 7. | 24B15EC211 | Electronic Devices and Circuits Lab | PCC | - | - | 2 | 2 | 1 |
| 8. | 18B15EC215 | Digital Circuit Design Lab | PCC | - | - | 2 | 2 | 1 |
| 9. | 15B11HS211 | Economics | HSC | 2 | 1 | - | 3 | 3 |
| 10. | 24B17EC211 | Summer Training-I (4 weeks) | PRC | - | - | - | - | 2 |
| | | TOTAL | | | | | 28 | 24 |

FOURTH SEMESTER

| S. No. | Course | | Course Category | Contact Hours | | | | Credits |
|--------|-------------|--|-----------------|---------------|---|-----|-------|---------|
| | Course Code | Course Title | | L | T | P | Total | |
| 1. | XXXXXX | HSS Elective – 1 | HSC | 2 | 1 | - | 3 | 3 |
| 2. | 15B11EC411 | Analogue Electronics | PCC | 3 | 1 | - | 4 | 4 |
| 3. | 18B11EC214 | Signals and Systems | PCC | 3 | 1 | - | 4 | 4 |
| 4. | 24B41EC211 | Introduction of Database Management System | PCC | 3 | 1 | - | 4 | 4 |
| 5. | 24B41EC312 | Computer Architecture and Organization | PCC | 3 | - | - | 3 | 3 |
| 6. | 15B17EC471 | Analogue Electronics Lab | PCC | - | - | 2 | 2 | 1 |
| 7. | 18B15EC214 | Signals and Systems Lab | PCC | - | - | 2 | 2 | 1 |
| 8. | 24B45EC211 | Introduction of Database Management System Lab | PCC | - | - | 2 | 2 | 1 |
| 9. | XXXXXX | Discipline Elective -1* | PEC | 3/2 | - | 0/2 | 3/4 | 3 |
| | | TOTAL | | | | | 27/28 | 24 |

* Discipline electives may run in 3 0 0 or 2 0 2 (L T P) mode as per requirement of subject

FIFTH SEMESTER

| S. No. | Course | | Course Category | Contact Hours | | | | Credits |
|--------|-------------|---|-----------------|---------------|---|-----|-------|------------|
| | Course Code | Course Title | | L | T | P | Total | |
| 1. | 24B41EC311 | Operating System Concepts | PCC | 3 | 1 | - | 4 | 4 |
| 2. | 18B11EC212 | Analog and Digital Communication | PCC | 3 | 1 | - | 4 | 4 |
| 3. | 24B45EC311 | Operating System Concepts Lab | PCC | - | - | 2 | 2 | 1 |
| 4. | 18B15EC212 | Analog and Digital Communication Lab | PCC | - | - | 2 | 2 | 1 |
| 5. | XXXXXX | Discipline Elective – 2* | PEC | 3/2 | 0 | 0/2 | 3/4 | 3/2 |
| 6. | XXXXXX | Discipline Elective – 3* | PEC | 3/2 | 0 | 0/2 | 3/4 | 3/2 |
| 7. | XXXXXX | Science Elective | BSC | 3 | | - | 3 | 3 |
| 8. | 18B12HS311 | Indian Constitution & Traditional Knowledge | OMC | 3 | - | - | 3 | Qualifying |
| 9. | 24B17EC311 | Summer Training-II (6 weeks) | PRC | - | - | - | - | 2 |
| | | TOTAL | | | | | 24/26 | 21 |

SIXTH SEMESTER

| S. No. | Course | | Course Category | Contact Hours | | | | Credits |
|--------|-------------|---|-----------------|---------------|---|-----|-------|---------|
| | Course Code | Course Title | | L | T | P | Total | |
| 1. | 24B41EC314 | Embedded Systems and Microprocessors | PCC | 3 | - | - | 3 | 3 |
| 2. | 24B41EC313 | Fundamentals of Algorithm and Problem Solving | PCC | 3 | | - | 3 | 3 |
| 3. | 24B41EC315 | Artificial Intelligence and Machine Learning | PCC | 3 | | - | 3 | 3 |
| 4. | XXXXXX | Discipline Elective – 4* | PEC | 3/2 | 0 | 0/2 | 3/4 | 3 |
| 5. | XXXXXX | Discipline Elective -5* | PEC | 3/2 | 0 | 0/2 | 3/4 | 3 |
| 6. | XXXXXX | Open Elective - 1 | OEC | 2 | | | 2 | 2 |
| 7. | XXXXXX | Selected Value-Added Course | Value added | 2 | | | 2 | Audit |
| 8. | 24B45EC314 | Embedded Systems and Microprocessors Lab | PCC | - | - | 2 | 2 | 1 |
| 9. | 24B45EC313 | Fundamentals of Algorithm and Problem Solving Lab | PCC | - | - | 2 | 2 | 1 |
| 10. | 24B15HS311 | Soft Skill For Employability | HSC | - | - | 2 | 2 | 1 |
| 11. | 24B17EC312 | Minor Project | PRC | - | - | 4 | 4 | 2 |
| | | TOTAL | | | | | 28/30 | 22 |

SEVENTH SEMESTER

| S. No. | Course | | Course Category | Contact Hours | | | | Credits |
|--------|-------------|-------------------------------|-----------------|---------------|---|-----|-------|---------|
| | Course Code | Course Title | | L | T | P | Total | |
| 1. | XXXXXX | Discipline Elective –6* | PEC | 3/2 | 0 | 0/2 | 3/4 | 3 |
| 2. | XXXXXX | Open Elective - 2 | OEC | 3 | - | - | 3 | 3 |
| 3. | 15B19EC791 | Major Project Part-1 | PRC | - | - | - | 8 | 4 |
| 4. | 24B17EC411 | Summer Training-III (6 weeks) | PRC | - | - | - | - | 4 |
| | | TOTAL | | | | | 14/15 | 14 |

EIGHTH SEMESTER

| S. No. | Course | | Course Category | Contact Hours | | | | Credits |
|--------|-------------|-------------------------|-----------------|---------------|---|-----|-------|---------|
| | Course Code | Course Title | | L | T | P | Total | |
| 1. | XXXXXX | Discipline Elective -7* | PEC | 3/2 | 0 | 0/2 | 3/4 | 3 |
| 2. | XXXXXX | Open Elective -3 | OEC | 3 | - | - | 3 | 3 |
| 3. | 24B17EC412 | Major Project Part-2 | PRC | - | - | 16 | 16 | 8 |
| | | TOTAL | | | | | 22/23 | 14 |

Total Credits for B. Tech. –160

Mandatory Internships/Summer Trainings

Summer Training -I (4 weeks) (In summer vacation after second semester)

| S. No. | Course | | Contact Hours | | | | Credits |
|--------|-------------|--|---------------|---|---|-------|---------|
| | Course Code | Course Title | L | T | P | Total | |
| 1. | 24B17EC211 | Inter/Intra institutional activities (Training with higher Institutions; Soft skill training organized by Training and Placement Cell of the respective institutions; contribution at incubation/innovation /entrepreneurship cell of the institute; participation in conferences/ workshops/ competitions etc.; Learning at Departmental Lab/ Tinkering Lab/ Institutional workshop; Working for consultancy/ research project within the institutes and Participation in all the activities of Institute's Innovation Council for eg: IPR workshop/Leadership Talks/ Idea/ Design/ Innovation/ Business Completion/ Technical Expos etc.) | 0 | | 6 | 6 | 2 |
| | | TOTAL | | | | 6 | 2 |

Summer Training -II (6 weeks) (In summer vacation after fourth semester)

| S. No. | Course | | Contact Hours | | | | Credits |
|--------|-------------|---|---------------|---|---|-------|---------|
| | Course Code | Course Title | L | T | P | Total | |
| 1. | 24B17EC311 | Industrial/Govt./ NGO/MSME/ Rural Internship/ Innovation /Entrepreneurship (Students may choose either to work on innovation or entrepreneurial activities resulting in start-up or undergo internship with industry/ NGO's/ Government organizations/ Micro/ Small/ Medium enterprises to make themselves ready for the industry. In case student want to pursue their family business and don't want to undergo internship, a declaration by a parent may be submitted directly to the TPO.) | 0 | | 6 | 6 | 2 |
| | | TOTAL | | | | 6 | 2 |

Summer Training -III (6 weeks) (In summer vacation after sixth semester)

| S. No. | Course | | Contact Hours | | | | Credits |
|--------|-------------|---|---------------|---|---|-------|---------|
| | Course Code | Course Title | L | T | P | Total | |
| 1. | 24B17EC411 | Industrial/Govt./ NGO/MSME/ Rural Internship/ Innovation /Entrepreneurship (Students may choose either to work on innovation or entrepreneurial activities resulting in start-up or undergo internship with industry/ NGO's/ Government organizations/ Micro/ Small/ Medium enterprises to make themselves ready for the industry. In case student want to pursue their family business and don't want to undergo internship, a declaration by a parent may be submitted directly to the TPO.) | 0 | | 8 | 8 | 4 |
| | | TOTAL | | | | 8 | 4 |

List of Electives

Discipline Elective – 1*

- Computer Network
- Internet of Things (IoT)
- Introduction to Deep Learning
- Digital Hardware Design
- Mobile Communication
- Network Analysis and Synthesis
- Information Theory and Application

Discipline Elective – 2*

- Electromagnetic Theory
- Digital Signal Processing
- Hardware Description Languages: VHDL and Verilog

Discipline Elective – 3*

- Java Programming
- Neural Networks and Fuzzy Logic
- Sensor Technology & Android Programming
- Introduction to Blockchain Technology
- Ethical Hacking & Prevention

Discipline Elective – 4*

- Computer Vision
- Digital Image processing
- Wireless Sensor Networks
- RF and Microwave
- Control Systems
- Information Theory & Coding
- Machine Learning and Natural Language Processing

Discipline Elective – 5*

- Cloud Computing
- Machine learning and Statistical pattern recognition
- Modelling and Simulation of Semiconductor Devices
- Network & Cyber Security
- Web Technology and Cyber Security
- Soft Computing Paradigms
- Big Data with Hadoop and Spark

Discipline Elective – 6*

- Introduction to FPGAs
- Fundamentals of Embedded Systems
- MIMO OFDM Applications to Wireless Communication
- Convergence and Next Generation Networks
- Computer Graphics
- Essentials of VLSI Testing
- Automation and Robotics

- System Simulation and Modelling
- Ethical Hacking & Prevention

Discipline Elective – 7*

- Introduction to Blockchain Technology
- Adaptive Systems and Signal Processing
- Satellite and Optical Communication
- Wavelets and Application
- AI for Healthcare & smart Systems
- Next Generation Telecom Networks
- Wireless Communication and Computing
- Basic of Antenna and Wave propagation