

School of Engineering and Applied Sciences

B. Tech Electrical and Electronics Engineering

Academic Batch: 2019-2023

Department of Electrical and Electronics Engineering

SRM University-AP, Andhra Pradesh

Syllabus B. Tech in Electrical and Electronics Engineering

| SEMESTER-I | | | | | | |
|-------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|-------------|-------------|-------------|
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EGL 111 EGL 112 | Communicative English (Non Minerva) Communicative English (Minerva) | 3 | 0 | 0 | 3 |
| 2 | PHY 112 | Introduction to Classical Mechanics | 2 | 0 | 0 | 2 |
| 3 | PHY 112L | Introduction to Classical Mechanics Lab | 0 | 0 | 2 | 1 |
| 4 | ENG 111 | Basic Electronics | 3 | 0 | 0 | 3 |
| 5 | ENG 111 L | Basic Electronics Lab | 0 | 0 | 2 | 1 |
| 6 | MAT 112 | Single Variable Calculus | 3 | 0 | 0 | 3 |
| 7 | CSE 101 CSE 101 L CSE 102 | Introduction to Programming using Python (Non Minerva) Introduction to Programming using Python Lab (Non Minerva) Introduction to Programming using Python (Minerva) | 3 0 3 | 0 0 0 | 0 2 2 | 3 1 4 |
| 8 | CDC 101 | Soft Skills | 1 | 0 | 0 | 1 |
| Total | | | | | | 18 |

| SEMESTER-II | | | | | | |
|--------------------|--------------------|----------------------------------------|----------|----------|----------|-----------|
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 102 | Fundamentals of Electrical Engineering | 2 | 1 | 0 | 3 |
| 2 | PHY 113 | Field Theory | 2 | 0 | 2 | 3 |
| 3 | PHY 221 | Electricity and Magnetism | 2 | 0 | 0 | 2 |
| 4 | PHY 221 L | Electricity and Magnetism Lab | 0 | 0 | 2 | 1 |
| 5 | ECO 121 | Principles of Economics | 3 | 0 | 0 | 3 |
| 6 | MAT 115 | Statistics | 3 | 0 | 0 | 3 |
| 7 | EGL 121 | Critical Thinking | 3 | 0 | 0 | 3 |
| 8 | MAT 121 | Multi Variable Calculus | 3 | 0 | 0 | 3 |
| 9 | CDC 102 | Soft Skills- II | 1 | 0 | 0 | 1 |
| Total | | | | | | 22 |

| SEMESTER-III | | | | | | |
|---------------------|--------------------|--------------------------------------------|----------|----------|----------|-----------|
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 201 | Electrical and Electronics Measurement | 3 | 0 | 0 | 3 |
| 2 | EEE 201 L | Electrical and Electronics Measurement Lab | 0 | 0 | 2 | 1 |
| 3 | EEE 202 | Electrical Circuit Theory | 2 | 1 | 0 | 3 |
| 4 | EEE 202 L | Electrical Circuit Theory Lab | 0 | 0 | 2 | 1 |
| 5 | MAT 131 | Differential Equations | 3 | 0 | 0 | 3 |
| 6 | OE | Open Elective-1 | 3 | 0 | 0 | 3 |
| 7 | OE L | Open Elective Lab-1 | 0 | 0 | 2 | 1 |
| 8 | OE | Open Elective-2 | 3 | 0 | 0 | 3 |
| 9 | OE L | Open Elective Lab-2 | 0 | 0 | 2 | 1 |
| 10 | ENG 101 | Fundamentals of Mechanical Engineering | 3 | 0 | 0 | 3 |
| 11 | CDC 221 | Aptitude | 1 | 1 | 0 | 1 |
| 12 | CSE 230 | Industry Standard Coding Practice-1 | 0 | 0 | 4 | 1 |
| Total | | | | | | 24 |

| SEMESTER-IV | | | | | | |
|--------------------|--------------------|-------------------------------------------|----------|----------|----------|-----------|
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 203 | Control Systems | 3 | 0 | 0 | 3 |
| 2 | EEE 203 L | Control Systems Lab | 0 | 0 | 2 | 1 |
| 3 | EEE 205 P | UROP | 0 | 0 | 6 | 3 |
| 4 | EEE 204 | DC machines and Transformers | 3 | 0 | 0 | 3 |
| 5 | EEE 204 L | DC machines and Transformers Lab | 0 | 0 | 2 | 1 |
| 6 | OE | Open Elective-3 | 3 | 0 | 0 | 3 |
| 7 | OE L | Open Elective Lab-3 | 0 | 0 | 2 | 1 |
| 8 | MAT 211 | Linear Algebra | 3 | 0 | 0 | 3 |
| 9 | ENG 105 L | SolidWorks (Engineering Graphics) | 0 | 0 | 2 | 1 |
| 10 | ISES 212 | Industry Specific Employability Skills IV | 1 | 1 | 0 | 1 |
| 11 | CSE 330 | Industry Standard Coding Practice-2 | 0 | 0 | 4 | 1 |
| Total | | | | | | 21 |

| SEMESTER-V | | | | | | |
|-------------------|--------------------|-------------------------------|----------|----------|----------|----------|
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 301 | AC Machines | 3 | 0 | 0 | 3 |
| 2 | EEE 301 L | AC Machines Lab | 0 | 0 | 2 | 1 |
| 3 | EEE 303 | Numerical Methods | 3 | 0 | 0 | 3 |
| 4 | EEE 303 L | Numerical Methods Lab | 0 | 0 | 2 | 1 |
| 5 | EEE 308 | Power Electronics | 3 | 0 | 0 | 3 |
| 6 | EEE 308 L | Power Electronics Lab | 0 | 0 | 2 | 1 |
| 7 | EEE 304 | Fundamentals of Power Systems | 3 | 0 | 0 | 3 |
| 8 | EEE 305 | Advanced Control Systems | 3 | 0 | 0 | 3 |
| 9 | EEE 305 L | Advanced Control Systems Lab | 0 | 0 | 2 | 1 |

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|----------------------|--------------------|-------------------------------------------|----------|----------|----------|------------|
| 10 | ISES 311 | Industry Specific Employability Skills-V | 1 | 1 | 0 | 0 |
| 11 | CSE 331 | Industry Standard Coding Practice - 3 | 0 | 0 | 4 | 1 |
| Total | | | | | | 20 |
| SEMESTER-VI | | | | | | |
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 306 | Power System Analysis | 3 | 0 | 0 | 3 |
| 2 | EEE 306 L | Power System Analysis Lab | 0 | 0 | 2 | 1 |
| 3 | EEE 309 | Synchronous Machines | 3 | 0 | 0 | 3 |
| 4 | EEE 309 L | Synchronous Machines Lab | 0 | 0 | 2 | 1 |
| 5 | ECE 319 | Microcontrollers and Applications | 3 | 0 | 0 | 3 |
| 6 | ECE 319 L | Microcontrollers and Applications Lab | 0 | 0 | 2 | 1 |
| 7 | ECE 222 | Digital Signal Processing | 3 | 0 | 0 | 3 |
| 8 | ECE 222 L | Digital Signal Processing Lab | 0 | 0 | 2 | 1 |
| 9 | TE | Technical Elective-1 | 3 | 0 | 0 | 3 |
| 10 | TE | Technical Elective-2 | 3 | 0 | 0 | 3 |
| 11 | ENV 111 | Environmental Science | 2 | 0 | 0 | 2 |
| 12 | ENV 111 L | Environmental Science Lab | 0 | 0 | 2 | 1 |
| 13 | ISES 312 | Industry Specific Employability Skills-VI | 1 | 1 | 0 | 0 |
| Total | | | | | | 25 |
| SEMESTER-VII | | | | | | |
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 401 | Switch Gear and Protection | 3 | 0 | 0 | 3 |
| 2 | EEE 401 L | Switch Gear and Protection Lab | 0 | 0 | 2 | 1 |
| 3 | EEE 402 | High Voltage Engineering | 3 | 0 | 0 | 3 |
| 4 | EEE 402 L | High Voltage Engineering Lab | 0 | 0 | 2 | 1 |
| 5 | OE | Open Elective-4 | 3 | 0 | 0 | 3 |
| 6 | TE | Technical Elective-3 | 3 | 0 | 0 | 3 |
| 7 | TE | Technical Elective-4 | 3 | 0 | 0 | 3 |
| 8 | TE | Technical Elective-5 | 3 | 0 | 0 | 3 |
| Total | | | | | | 20 |
| SEMESTER-VIII | | | | | | |
| S. No | Course Code | Course Name | L | T | P | C |
| 1 | EEE 410 P | Capstone Project | 0 | 0 | 24 | 12 |
| Total | | | | | | 12 |
| Total Credits | | | | | | 162 |

| Course Category | Category Code | No of Courses | Credits in curriculum |
|--------------------------------|----------------------|----------------------|------------------------------|
| Humanities and Social Sciences | HS | 9 | 13 |
| Basic Sciences | BS | 10 | 24 |
| Engineering Sciences | ES | 15 | 29 |
| Professional Core | C | 25 | 51 |
| Professional Elective | SE | 5 | 15 |
| | TE | 7 | 15 |
| Open Elective | OE | 2 | 15 |
| Project | PR | 9 | 13 |
| | Total | 73 | 162 |

| List of Technical Electives | | | | | |
|------------------------------------|-----------------------------------------|----------|----------|----------|----------|
| Course Code | Course Name | L | T | P | C |
| EEE 311 | Non - Linear Systems and Control | 3 | 0 | 0 | 3 |
| EEE 312 | Renewable Energy Systems | 3 | 0 | 0 | 3 |
| EEE 315 | Artificial Neural Networks | 3 | 0 | 0 | 3 |
| EEE 421 | Linear Systems | 3 | 0 | 0 | 3 |
| EEE 422 | Optimization Techniques | 3 | 0 | 0 | 3 |
| EEE 423 | Switched Mode DC DC Power Converters | 3 | 0 | 0 | 3 |
| EEE 424 | High Voltage DC Transmission | 3 | 0 | 0 | 3 |
| EEE 425 | Power System Operation and Control | 3 | 0 | 0 | 3 |
| EEE 426 | Pulsed power systems | 3 | 0 | 0 | 3 |
| EEE 427 | Flexible AC transmission system (FACTS) | 3 | 0 | 0 | 3 |
| EEE 428 | Power Semiconductor Drives | 3 | 0 | 0 | 3 |
| EEE 429 | Economics of Power Generation | 3 | 0 | 0 | 3 |

| List of Open Electives | | | | | |
|-------------------------------|---------------------------------|----------|----------|----------|----------|
| Course Code | Course Name | L | T | P | C |
| ECE 211 | Digital Electronics | 3 | 0 | 2 | 4 |
| ECE 212 | Signals and Systems | 3 | 0 | 2 | 4 |
| ECE 221 | Analog Electronics | 3 | 0 | 2 | 4 |
| PHY 113 | Field Theory | 2 | 0 | 2 | 3 |
| ECE 313 | Microprocessors and Interfacing | 3 | 0 | 2 | 4 |
| EEE 314 | Nuclear Power Generation | 3 | 0 | 0 | 3 |