

Course Structure: B.Tech. (Electrical Engineering)
Valid for students admitted from year 2023 onwards

Semester 3:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|----------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | BS | AMS2232 | Higher Mathematics | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 2 | BS | APS2052 | Electrical Engineering Materials | 2 | 1 | 0 | 3 | 15 | 25 | 60 | 100 |
| 3 | PC | EEC2112 | Electrical Machines-I | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 4 | PC | EEC2712 | Circuit Theory | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 5 | PC | EEC2722 | Electromagnetic Field Theory | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 6 | PC | EEC2732 | Signals & Systems | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 7 | PC | EEC2912 | Electrical Machines Lab I | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |

TOTAL CREDITS: 23.5

Semester 4:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|----------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | EEC2122 | Electrical Machines II | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 2 | PC | EEC2212 | Power Electronics-I | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 3 | PC | EEC2312 | Power System Engineering | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 4 | PC | EEC2512 | Electrical Measurement | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 5 | PC | EEC2922 | Electrical Machines Lab II | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 6 | PC | EEC2932 | Circuits and Measurements Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 7 | ESA | ELA2012 | Logic & Digital Circuit | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 8 | HM | MEH2452 | Engineering Economy & Management | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 24

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Semester 5:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|--|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | EEC3212 | Power Electronics-II | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 2 | PC | EEC3312 | Power System Analysis | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 3 | PC | EEC3512 | Electrical & Electronic Instr. | 2 | 1 | 0 | 3 | 15 | 25 | 60 | 100 |
| 4 | PC | EEC3612 | High Voltage Engineering | 2 | 1 | 0 | 3 | 15 | 25 | 60 | 100 |
| 5 | PC | EEC3912 | Power Electronics Lab | 0 | 1 | 2 | 2 | 60 | 0 | 40 | 100 |
| 6 | PC | EEC3932 | Instrumentation Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 7 | PC | EEC3942 | Electric Machine Design | 1 | 0 | 2 | 2 | 60 | | 40 | 100 |
| 8 | ESA | ELA3022 | Fundamentals of Communication Engineerir | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 9 | ESA | ELA3912 | Electronics Engg. Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 10 | OE | | Open Elective-1 | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 26

Semester 6:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|---|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | EEC3112 | Electrical Drives | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 2 | PC | EEC3322 | Electrical Power Gen. & Utilization | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 3 | PC | EEC3332 | Power System Protection | 4 | 0 | 0 | 4 | 15 | 25 | 60 | 100 |
| 4 | PC | EEC3412 | Dynamic System Analysis | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 5 | PC | EEC3712 | Microcontroller Systems and Appl. | 2 | 1 | 0 | 3 | 15 | 25 | 60 | 100 |
| 6 | PC | EEC3922 | Power System and High Voltage Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 7 | PSI | EEP3812 | Seminar | 0 | 2 | 0 | 2 | 100 | | | 100 |
| 8 | HM | | Elective Course under Humanities category | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 25.5

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Semester 7:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|----------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PC | EEC4222 | New and Renewable Energy Sources | 3 | 0 | 0 | 3 | 15 | 25 | 60 | 100 |
| 2 | PC | EEC4412 | Control Systems | 3 | 1 | 0 | 4 | 15 | 25 | 60 | 100 |
| 3 | PC | EEC4912 | Power System Protection Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 4 | PC | EEC4922 | Control Lab | 0 | 0 | 3 | 1.5 | 60 | | 40 | 100 |
| 5 | PC | EEC4942 | Power System Design | 0 | 1 | 2 | 2 | 60 | 0 | 40 | 100 |
| 6 | PSI | EEP4982 | Project Phase-I | 0 | 2 | 0 | 2 | 60 | | 40 | 100 |
| 7 | DE | | Departmental Elective-1 | | | | 3 | 15 | 25 | 60 | 100 |
| 8 | DE | | Departmental Elective-2 | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 20

Semester 8:

| S.No. | Course Catag | Course No. | Course title | Contact Periods | | | Credits | Marks | | | Total |
|-------|--------------|------------|--------------------------------|-----------------|---|---|---------|-------------|---------|---------|-------|
| | | | | L | T | P | | Course-Work | Mid-Sem | End-Sem | |
| 1 | PSI | EEP4802 | Industrial Training/Internship | | | | 2 | | | 100 | 100 |
| 2 | PSI | EEP4992 | Project Phase-II | 0 | 4 | 0 | 4 | 60 | | 40 | 100 |
| 3 | DE | | Departmental Elective-3 | | | | 3 | 15 | 25 | 60 | 100 |
| 4 | DE | | Departmental Elective-4 | | | | 3 | 15 | 25 | 60 | 100 |
| 5 | DE | | Departmental Elective-5 | | | | 3 | 15 | 25 | 60 | 100 |
| 6 | OE | | Open Elective-2 | | | | 3 | 15 | 25 | 60 | 100 |

TOTAL CREDITS: 18

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List of Departmental Elective (DE) Courses:

| S.No. | Crs. No. | Course title | S.No. | Crs. No. | Course title |
|-------|----------|---|-------|----------|---|
| 1 | EEE4112 | Modern Electric Drives | 2 | EEE4122 | Electric Vehicles & Traction |
| 3 | EEE4132 | GENERALIZED THEORY OF ELECTRICAL MACHINES | 4 | EEE4212 | Power Semiconductor Controllers |
| 5 | EEE4222 | Modelling and Control of Electronics converters | 6 | EEE4232 | Solar Photovoltaic Systems |
| 7 | EEE4312 | Power Station Practice | 8 | EEE4322 | Power Quality |
| 9 | EEE4332 | DIGITAL SIMULATION OF POWER SYSTEM | 10 | EEE4342 | POWER SYSTEM RELIABILITY |
| 11 | EEE4352 | HVDC and FACTS Technology | 12 | EEE4362 | SMART GRID |
| 13 | EEE4422 | Embedded Systems | 14 | EEE4432 | NONLINEAR CONTROL SYSTEMS |
| 15 | EEE4442 | MECHATRONICS | 16 | EEE4512 | MEASUREMENT AND DATA ACQUISITION |
| 17 | EEE4522 | Process Instrumentation & Control | 18 | EEE4712 | Numerical Computational Methods in Electrical Engg. |
| 19 | EEE4722 | Machine Learning | 20 | EEE4732 | ARTIFICIAL NEURAL NETWORKS |
| 21 | EEE4742 | Digital Signal Processing | | | |

SUMMARY:

| Category Code | Category Name | II-IV Year Credits | First Year Credits | Total Credits |
|---------------|------------------------------|--------------------|--------------------|---------------|
| DC | Departmental Core | 85.5 | 0 | 85.5 |
| DE | Departmental Elective | 15 | 0 | 15 |
| BS | Basic Sciences | 7 | 19 | 26 |
| ESA | Engg. Science and Arts | 7.5 | 19 | 26.5 |
| OE | Open Elective | 6 | 0 | 6 |
| HM | Humanities | 6 | 5 | 11 |
| PSI | Project, Seminar, Internship | 10 | 0 | 10 |
| TOTAL | | 137 | 43 | 180 |