

Gautam Buddha University
School of Engineering
Department of Electrical Engineering

Course structure of 2 Year M. Tech. Programme in
Power Systems & Energy Management (2023-24)

| SEMESTER-I | | | | |
|-------------------|---------------------|-----------------------------------|--------------|---------------|
| S. No. | Subject Code | Courses | L-T-P | Credit |
| 1. | EE 681 | Soft Computing Techniques | 3-0-0 | 3 |
| 2. | EEM101 | Automation System | 3-1-0 | 4 |
| 3. | EE571 | Power System Analysis and Control | 3-0-0 | 3 |
| 4. | EEM103 | Instrumentation Systems | 3-0-0 | 3 |
| 5. | EEM105 | Power System Modelling | 3-0-0 | 3 |
| 6. | | Elective-I | 3-0-0 | 3 |
| 7. | EE591 | Power System Lab | 0-0-3 | 2 |
| 8. | EE597 | Seminar | 0-0-3 | 2 |
| 9. | GP | General Proficiency | - | NC |
| | | Total | | 23 |
| | | Total Contact Hours | | 25 |

| SEMESTER-II | | | | |
|--------------------|---------------------|---|--------------|---------------|
| S. No. | Subject Code | Courses | L-T-P | Credit |
| 1. | EEM201 | Transmission and Distribution Automation | 3-0-0 | 3 |
| 2. | EE 503 | Power System Restructuring and Deregulation | 3-0-0 | 3 |
| 3. | EEM203 | Communication Protocols | 3-1-0 | 4 |
| 4. | EE572 | Advance Power System Protection | 3-0-0 | 3 |
| 5. | | Specialized Elective- I | 3-0-0 | 3 |
| 6. | EE598 | Project | 0-0-10 | 5 |
| 7. | EE588 | Power System Simulation Lab | 0-0-3 | 2 |
| 8. | GP | General Proficiency | - | NC |
| | | Total | | 23 |
| | | Total Contact Hours | | 29 |

| SEMESTER-III | | | | |
|---------------------|---------------------|-----------------------------------|--------------|---------------|
| S. No. | Subject Code | Courses | L-T-P | Credit |
| 1. | EE 685 | SCADA and Phaser Measurement Unit | 3-0-0 | 3 |
| 2. | EEM301 | Energy Management Systems | 3-1-0 | 4 |
| 3. | | Specialized Elective-II | 3-0-0 | 3 |
| 4. | | Specialized Elective-III | 3-0-0 | 3 |
| 5. | EEM591 | SCADA Lab | 0-0-2 | 1 |
| 6. | EE699 | Dissertation-I | 6-0-3 | 8 |
| 7. | GP | General Proficiency | - | NC |
| | | Total | - | 22 |
| | | Total Contact Hours | | 24 |

| SEMESTER-IV | | | | |
|--------------------|---------------------|---------------------|--------------|---------------|
| S. No. | Subject Code | Courses | L-T-P | Credit |
| 1. | EEP-698 | Dissertation-II | - | 22 |
| 2. | GP | General Proficiency | - | NC |
| | | Total | - | 22 |
| | | Total Contact Hours | | 22 |

Grand Total Credits = 90

Elective I:

1. Electric Power Project Evaluation and Pricing
2. Modelling and Planning of Energy Systems
3. Computer Methods in Power Systems
4. Power System Quality
5. Smart Grid
6. Grid Instrumentation and Communication Systems
7. EE575 Renewable and Non Conventional Energy Sources

Specialized Elective- I:

1. EE 504 Smart Energy Systems
2. EE 503 Power System Restructuring and Deregulation
3. EE 501 Power Generation Systems

Specialized Elective-II:

1. Machine Learning and Data Analytics in Power Systems
2. Artificial Intelligence Techniques to Power Systems
3. Cyber Security in Power Systems
4. Electric Vehicle Charging Substation
5. Micro-Grids Systems
6. Energy Policy, Governance and Regulations
7. EE671 Power System Dynamics and Control

Specialized Elective-III:

1. EE 689 Demand Side Management
2. EE 691 Power System Optimization
3. EE 695 Distribution System Analysis and Control
4. Sustainable Energy Sources
5. Power Substation Engineering
6. Stochastic systems, Optimization and Control in Power systems
7. EE673 HVDC and FACTS