# Gautam Buddha University

## School of Engineering

### Course Structure of 2 Year M.Tech Programme in Power Systems Engineering (2015-17 onwards)

| SEMESTER-I | | | | | |
|---|---|---|---|---|---|
| Sr. No. | Subject Code | Courses | L-T-P | Credits | Course Type |
| | | THEORY | | | |
| 1. | MA406/MA 507/MA402 | Operation Research /Optimization Techniques/ Modeling and Simulation | 3-1-0 | 4 | EGE-P1 |
| 2. | EE571 | Power System Analysis and Control | 3-0-0 | 3 | C-P1 |
| 3. | EE573 | Power System Transients | 3-0-0 | 3 | C-P2 |
| 4. | EE575 | Renewable & Non Conventional Energy Sources | 3-0-0 | 3 | C-P3 |
| 5. | | (Elective-I) | 3-0-0 | 3 | EDSE-P1 |
| 6. | | Open Elective | 3-0-0 | 3 | OE-P1 |
| | | PRACTICALS | | | |
| 7. | EE591 | Power System Lab | 0-0-3 | 2 | C-P4 |
| 8. | EE597 | Seminar | 0-0-3 | 2 | SEC1 |
| | | | | | |
| 9. | GP | General Proficiency | - | NC | |
| | | **Total** | | **23** | |
| | | Total Contact Hours | 25 | | |

Open Electives: Courses offered from other school

| SEMESTER-II | | | | | |
|---|---|---|---|---|---|
| Sr. No. | Subject Code | Courses | L-T-P | Credits | Course Type |
| | | THEORY | | | |
| 1. | MA406/MA 507/MA402 | Operation Research /Optimization Techniques/ Modeling and Simulation | 3-1-0 | 4 | EGE-P2 |
| 2. | EE572 | Advance Power System Protection | 3-0-0 | 3 | C-P5 |
| 3. | EE574 | Power System Planning & Reliability | 3-0-0 | 3 | C-P6 |
| 4. | EE576 | Power System Instrumentation | 3-0-0 | 3 | C-P7 |
| 5. | | Specialized Elective - I | 3-0-0 | 3 | EDSE-P2 |
| | | PRACTICALS | | | |
| 6. | EE598 | Project | 0-0-10 | 5 | EDP-P1 |
| 7. | EE588 | Power System Simulation Lab | 0-0-3 | 2 | C-P8 |
| | | | | | |
| 8. | GP | General Proficiency | - | NC | |
| | | **Total** | | **23** | |
| | | Total Contact Hours | 29 | | |

| SEMESTER-III | | | | | |
|---|---|---|---|---|---|
| Sr. No. | Subject Code | Courses | L-T-P | Credits | Course Type |
| | | THEORY | | | |
| 1. | EE671 | Power System Dynamics & Control | 3-0-0 | 3 | C-P9 |
| 3. | EE673 | HVDC & FACTS | 3-1-0 | 4 | C-P10 |
| 4. | | Specialized Elective-II | 3-0-0 | 3 | EDSE-P3 |
| 5. | | Specialized Elective-III | 3-0-0 | 3 | EDSE-P4 |
| | | | | | |
| | | PRACTICAL/ PROJECT | | | |
| 6. | EE697 | Distribution Network Lab | 0-0-2 | 1 | C-P11 |
| 7. | EE699 | Dissertation-I | 6**-0-3 | 8 | EDP-P2 |
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| 8. | GP | General Proficiency | - | NC | |
| | | **Total** | | **22** | |
| | | Total Contact Hours | 24 | | |

*** This will not be a usual lecture session, but this is one to one interaction of each student with the concerned faculty member*

| SEMESTER-IV | | | | | |
|---|---|---|---|---|---|
| Sr. No. | Subject Code | Courses | L-T-P | Credits | Course Type |
| 1. | EEP 698 | Dissertation-II | ---- | 22 | EDP-P3 |
| 2. | | General Proficiency | ---- | NC | |
| | | **Total** | ----- | **22** | |
| | | Total Contact Hours | 22 | | |

**Grand Total Credits of Degree = 90**

## List of Electives for M.Tech (Power System)

**Elective-I**

1. EE577: Reliability Analysis & Prediction
2. EE579: Failure Data Organization and Analysis
3. EE581: Restructured Power System
4. EE583: Power Conditioning

5. EE585: Power Converters & Applications
6. EE587: Project Engineering & Management
7. EE589: Wavelet Methods in Engineering
8. M.Tech. (PED)-I sem. Elective

**Specialization Elective-I**

1. EE578: Computer Aided Design of Electrical Machines
2. EE580: Reliability Centered Maintenance
3. EE582: Power Sector Economics and Management
4. EE584: EHVAC Transmission
5. EE586: Modeling and Analysis of Electrical Machines
6. M.Tech. (PED)-II sem. Elective

**Specialization Elective –II**

1. EE675: Computer Applications to Power System Analysis
2. EE677: Control & Operation of Active Distribution Network
3. EE679: Power Quality Analysis and Mitigation
4. EE681: Soft Computing Techniques
5. EE683: Distributed Generation & Microgrids
6. M.Tech. (PED)-III sem. Elective

**Specialization Elective –III**

1. EE685: SCADA and Phaser Measurement Unit
2. EE687: Optimal Control Theory and Power System Applications
3. EE689: Demand Side Management
4. EE691: Power System Optimization
5. EE693: Optimization Techniques for Electrical Engg.
6. EE695: Distribution System Analysis & Control
7. M.Tech. (PED)-III sem. Elective

Nomenclature:

1. AEC: Ability Enhancement Courses
   - AEC-C: Ability Enhancement Courses-compulsory
   - SEC: Skill Enhancement Course
2. CC: Core Course
3. Elective Courses
   - E-DSE: Discipline specific elective
   - E-GE: Generic Elective
   - E-DP: Dissertation and Project