

**Syllabus for M. Tech. EE in Power Systems**  
**University of Engineering and Management, Jaipur**  
**1<sup>st</sup> semester**

**Theory**

| Sl. No | Code    | Paper                            | Contact periods per week |   |   | Total Contact hours | Credit |
|--------|---------|----------------------------------|--------------------------|---|---|---------------------|--------|
|        |         |                                  | L                        | T | P |                     |        |
| 1.     | EMM-101 | Advanced Engineering Mathematics | 3                        | 1 | 0 | 4                   | 4      |
| 2.     | PSM-101 | Advanced Power System Analysis   | 3                        | 1 | 0 | 4                   | 4      |
| 3.     | PSM-102 | High Voltage Transmission System | 4                        | 0 | 0 | 4                   | 4      |
| 4.     | PSM-103 | Elective – I                     | 4                        | 0 | 0 | 4                   | 4      |
| 5.     | PSM-104 | Elective - II                    | 4                        | 0 | 0 | 4                   | 4      |

**Practical/ Sessional**

| Sl. No.           | Code    | Paper                         | Contact periods per week |   |   | Total Contact hours | Credit |
|-------------------|---------|-------------------------------|--------------------------|---|---|---------------------|--------|
|                   |         |                               | L                        | T | P |                     |        |
| 1.                | PSM-191 | Laboratory I                  | 0                        | 0 | 3 | 3                   | 2      |
| 2.                | PSM-192 | Laboratory II                 | 0                        | 0 | 3 | 3                   | 2      |
| 3.                | PSM-193 | Seminar I                     | 0                        | 0 | 3 | 3                   | 2      |
|                   |         | Total of Practical/ Sessional |                          |   |   | 9                   | 6      |
| Total of Semester |         |                               | 18                       | 2 | 9 | 29                  | 26     |

**2<sup>nd</sup> Semester**

**Theory**

| Sl. No. | Code    | Paper                              | Contact periods per week |   |   | Total Contact hours | Credit |
|---------|---------|------------------------------------|--------------------------|---|---|---------------------|--------|
|         |         |                                    | L                        | T | P |                     |        |
| 1.      | PSM-201 | Power System Operation and Control | 3                        | 1 | 0 | 4                   | 4      |
| 2.      | PSM-202 | Power System Instrumentation       | 3                        | 1 | 0 | 4                   | 4      |
| 4.      | PSM-203 | Advanced Power System Protection   | 4                        | 0 | 0 | 4                   | 4      |
| 4.      | PSM-204 | Elective – III                     | 4                        | 0 | 0 | 4                   | 4      |
| 5.      | PSM-205 | Elective - IV                      | 4                        | 0 | 0 | 4                   | 4      |

**Practical/ Sessional**

| Sl. No.                       | Code    | Paper          | Contact periods per week |   |   | Total Contact hours | Credit |
|-------------------------------|---------|----------------|--------------------------|---|---|---------------------|--------|
|                               |         |                | L                        | T | P |                     |        |
| 1.                            | PSM-291 | Laboratory III | 0                        | 0 | 3 | 3                   | 2      |
| 2.                            | PSM-292 | Laboratory IV  | 0                        | 0 | 3 | 3                   | 2      |
| 3.                            | PSM-293 | Seminar II     | 0                        | 0 | 3 | 3                   | 2      |
| Total of Practical/ Sessional |         |                |                          |   |   | 9                   | 6      |
| Total of Semester             |         |                | 17                       | 3 | 9 | 29                  | 26     |

### 3<sup>rd</sup> Semester

#### Theory

| Sl. No. | Code    | Paper                      | Contact periods per week |   |   | Total Contact hours | Credit |
|---------|---------|----------------------------|--------------------------|---|---|---------------------|--------|
|         |         |                            | L                        | T | P |                     |        |
| 1.      | EMM-301 | Introduction to Management | 4                        | 0 | 0 | 4                   | 4      |
| 2.      | PSM-301 | Elective V                 | 3                        | 1 | 0 | 4                   | 4      |

#### Practical/ Sessional

| Sl. No.           | Code    | Paper                                  | Contact periods per week |   |   | Total Contact hours | Credit |
|-------------------|---------|----------------------------------------|--------------------------|---|---|---------------------|--------|
|                   |         |                                        | L                        | T | P |                     |        |
| 1.                | PSM-391 | Pre-submission Defense of Dissertation | 0                        | 0 | 0 | 0                   | 4      |
| 2.                | PSM-392 | Dissertation (Part I)                  | 0                        | 0 | 0 | 20                  | 10     |
|                   |         | Total of Sessional                     |                          |   |   | 20                  | 14     |
| Total of Semester |         |                                        | 17                       | 3 | 9 | 28                  | 22     |

### 4<sup>th</sup> Semeste

#### Sessional

| Sl. No.           | Code    | Paper                                   | Contact periods per week |   |   | Total Contact hours | Credit |
|-------------------|---------|-----------------------------------------|--------------------------|---|---|---------------------|--------|
|                   |         |                                         | L                        | T | P |                     |        |
| 1.                | PSM-491 | Dissertation (Completion)               | 0                        | 0 | 0 | 24                  | 14     |
| 2.                | PSM-492 | Post submission defense of Dissertation | 0                        | 0 | 0 | 0                   | 8      |
| 3.                | PSM-294 | Comprehensive Viva-Voce                 | 0                        | 0 | 0 | 0                   | 4      |
| Total of Semester |         |                                         |                          |   |   | 24                  | 26     |

**Total Credits: 26 + 26 + 22 + 26 = 100**

**Elective I**

- i) Power System Planning and Reliability - PSM 103 (a)
- ii) Power System Apparatus - PSM 103 (b)
- iii) Power Quality - PSM 103 (c)

**Elective II**

- i) Optimization Techniques - PSM 104 (a)
- ii) Soft Computing Technique - PSM 104 (b)
- iii) Digital Signal Processing - PSM 104 (c)
- iv) Object Oriented Programming - PSM 104 (d)

**Elective III**

- i) Power System Transient – PSM 204 (a)
- ii) Flexible A.C. Transmission System - PSM 204 (b)
- iii) Advanced Electrical Drives - PSM 204 (c)

**Elective IV**

- i) Advanced Control System- PSM 205 (a)
- ii) Modeling and Simulation of dynamic systems - PSM 205 (b)
- iii) Advanced Microprocessor and Microcontroller – PSM 205 (c)

**Elective V**

- i) Non-conventional Energy - PSM 301 (a)
- ii) Power System Harmonics - PSM 301 (b)
- iii) Energy Management and Audit – PSM 301 (c)