**Theory**

**Syllabus for M. Tech. EE in Power Systems**

**University of Engineering and Management, Jaipur**

**1st semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |

**Theory**

**2nd Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |

**Theory**

**3rd Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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 |

**Sessional**

**4th Semester**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **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)**