

**VAAGESWARI COLLEGE OF ENGINEERING**  
**AUTONOMOUS**  
**M. TECH- POWER ELECTRONICS**  
**(Applicable for the Batch admitted from the Academic Year 2024-25 Batch)**

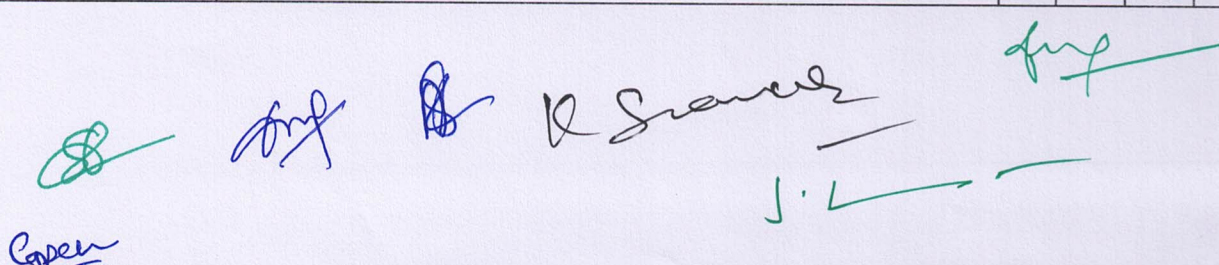
**(R24) COURSE STRUCTURE AND SYLLABUS**

**I YEAR I SEMESTER**

| Sr.No | Core/Elective       | Course Name                                                                                                                                                                                           | L         | T        | P        | Credits   |
|-------|---------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|----------|-----------|
| 1.    | Program Core-I      | 24D43C101 Advanced Power Electronic Converters-I                                                                                                                                                      | 3         | 0        | 0        | 3         |
| 2.    | Program Core-II     | 24D43C102 Electrical Drives                                                                                                                                                                           | 3         | 0        | 0        | 3         |
| 3.    | Program Elective-I  | 24D43E103 Machine Modelling and Analysis<br>24D43E104 Microcontroller Applications to Power Electronics<br>24D43E105 Smart Grid Technologies<br>24D43E106 Modern Control Theory                       | 3         | 0        | 0        | 3         |
| 4.    | Program Elective-II | 24D43E107 Power Semiconductor Devices and Modelling<br>24D43E108 Reactive Power Compensation and Management<br>24D43E109 High Frequency Magnetic Components<br>24D43E110 Electric Vehicles and Design | 3         | 0        | 0        | 3         |
| 5.    |                     | 24D43M111 Research Methodology & IPR                                                                                                                                                                  | 2         | 0        | 0        | 2         |
| 6.    | Lab-I               | 24D43L112 Advanced Power Electronic Converters Lab-I                                                                                                                                                  | 0         | 0        | 4        | 2         |
| 7.    | Lab-II              | 24D43L113 Electrical Drives Lab                                                                                                                                                                       | 0         | 0        | 4        | 2         |
| 8.    | Audit Course-I      | 24D43N114 English for Research Paper Writing<br>24D43N115 Disaster Management<br>24D43N116 Sanskrit for Technical Knowledge<br>24D43N117 Value Education                                              | 2         | 0        | 0        | 0         |
|       |                     | <b>Total Credits</b>                                                                                                                                                                                  | <b>16</b> | <b>0</b> | <b>8</b> | <b>18</b> |

**I YEAR II SEMESTER**

| Sr.No | Core/Elective        | Course Name                                                                                                                                                                                                   | L         | T        | P         | Credits   |
|-------|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|----------|-----------|-----------|
| 1.    | Program Core-III     | 24D43C201 Advanced Power Electronic Converters-II                                                                                                                                                             | 3         | 0        | 0         | 3         |
| 2.    | Program Core-IV      | 24D43C202 Power Electronics Application to Power Systems                                                                                                                                                      | 3         | 0        | 0         | 3         |
| 3.    | Program Elective-III | 24D43E203 Industrial Load Modelling and Control<br>24D43E204 Advanced Digital Signal Processing<br>24D43E205 Power Quality Improvement Techniques<br>24D43E206 Power Electronics for Renewable Energy Systems | 3         | 0        | 0         | 3         |
| 4.    | Program Elective-IV  | 24D43E207 DSP based Drive Control<br>24D43E208 Distributed Generation<br>24D43E209 Electric Vehicle Charging Techniques<br>24D43E210 Electromagnetic interference and compatibility                           | 3         | 0        | 0         | 3         |
| 5.    | MPWS                 | 24D43M211 Mini Project with Seminar                                                                                                                                                                           | 0         | 0        | 4         | 2         |
| 6.    | Lab-III              | 24D43L212 Advanced Power Electronic Converters Lab-II                                                                                                                                                         | 0         | 0        | 4         | 2         |
| 7.    | Lab-IV               | 24D43L213 Power Electronics Application to Power Systems Lab                                                                                                                                                  | 0         | 0        | 4         | 2         |
| 8.    | Audit Course-II      | 24D43N214 Constitution of India<br>24D43N215 Pedagogy Studies<br>24D43N216 Stress Management by Yoga<br>24D43N217 Personality Development through Life Enlightenment Skills                                   | 2         | 0        | 0         | 0         |
|       |                      | <b>Total Credits</b>                                                                                                                                                                                          | <b>14</b> | <b>0</b> | <b>12</b> | <b>18</b> |



**II YEAR I SEMESTER**

| Sr.No | Core/Elective      | Course Name                                                                                                                                                                                                          | L        | T        | P         | Credits   |
|-------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|-----------|-----------|
| 1.    | Program Elective-V | 24D43E301 Reliability Engineering<br>24D43E302 Dynamics of Electrical Machines<br>24D43E303 Energy Storage Technologies<br>24D43E304 SCADA Systems and Applications                                                  | 3        | 0        | 0         | 3         |
| 2.    | Open Elective      | 24D43O305 Business Analytics<br>24D43O306 Industrial Safety<br>24D43O307 Operations Research<br>24D43O308 Cost Management of Engineering Projects<br>24D43O309 Composite Materials<br>24D43O310 Photovoltaic Systems | 3        | 0        | 0         | 3         |
| 3.    | Dissertation       | 24D43P311 Dissertation Stage-I                                                                                                                                                                                       | 0        | 0        | 12        | 6         |
|       |                    | <b>Total Credits</b>                                                                                                                                                                                                 | <b>6</b> | <b>0</b> | <b>12</b> | <b>12</b> |

**II YEAR II SEMESTER**

| Sr.No | Core/Elective | Course Name                      | L        | T        | P         | Credits   |
|-------|---------------|----------------------------------|----------|----------|-----------|-----------|
| 1.    | Dissertation  | 24D43P401 Dissertation Stage-II  | 0        | 0        | 12        | 6         |
| 2.    | Dissertation  | 24D43P402 Dissertation Viva-Voce | 0        | 0        | 28        | 14        |
|       |               | <b>Total Credits</b>             | <b>0</b> | <b>0</b> | <b>40</b> | <b>20</b> |

**\*For Dissertation Work Review - I, please refer 7.10 in R24 Academic Regulations.**

**Open Elective**

1. Business Analytics (Offered by CSE Department)
2. Industrial Safety (Offered by **Chemical Engineering** Department)
3. Operations Research (Offered by **Mechanical Engineering** Department)
4. Cost Management of Engineering Projects (Offered by **Civil Engineering** Department)
5. Composite Materials (Offered by **Metallurgical Engineering** Department)
6. Photovoltaic Systems (Offered by EEE Department)

**Audit Course I & II**

1. English for Research Paper Writing.
2. Disaster Management.
3. Sanskrit for Technical Knowledge.
4. Value Education.
5. Constitution of India.
6. Pedagogy Studies.
7. Stress Management by Yoga.
8. Personality Development through Life Enlightenment Skills.

*[Handwritten signatures and marks]*