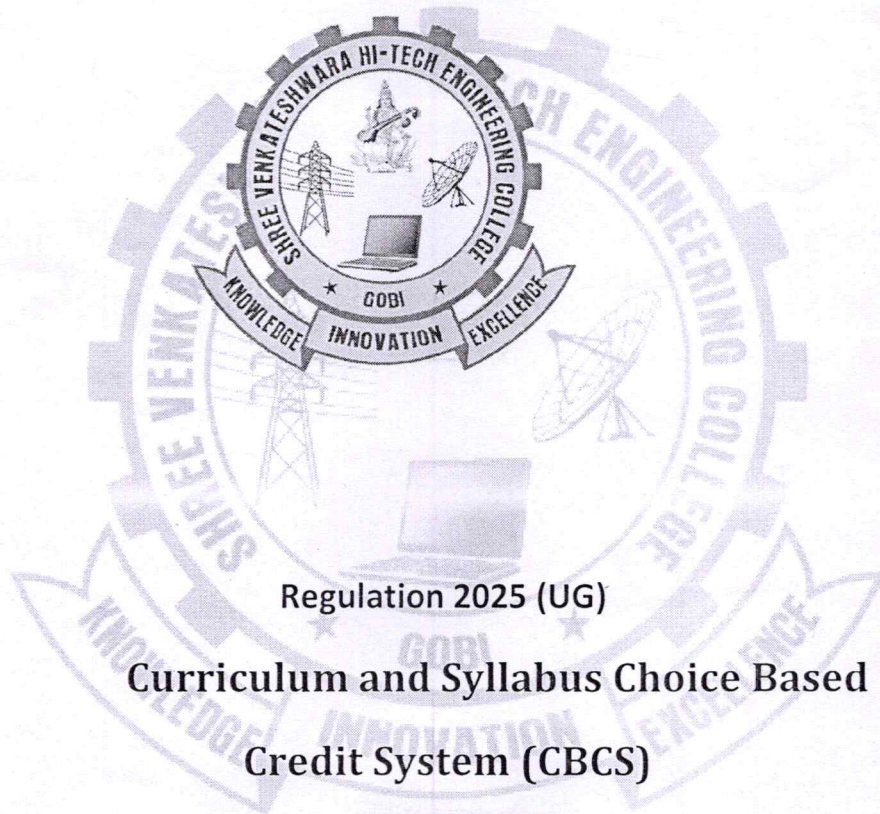


**SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE**  
**(Autonomous)**

**Gobichettipalayam, Erode-638455**



Regulation 2025 (UG)

**Curriculum and Syllabus Choice Based**  
**Credit System (CBCS)**

**BE-ELECTRICAL AND ELECTRONICS ENGINEERING**

**Chairman**  
**BoS/EEE**



# SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE

(Autonomous)

Gobichettipalayam, Erode -638455

Regulation 2025 (UG)

Curriculum and Syllabus

BE-Electrical And Electronics Engineering

## I. Program Educational Objective (PEO)

- PEO1: Professional Competence:** Excel in their professional careers or higher studies by acquiring a strong foundation in mathematics, science, and engineering principles.
- PEO2: Technical Expertise and Innovation:** Apply their knowledge and technical skills to identify, analyze, design, and solve real-world electrical and electronics engineering problems, using modern tools and techniques.
- PEO3: Lifelong Learning and Adaptability:** Engage in lifelong learning to adapt to rapidly evolving technologies and contribute to the advancement of the field through research, innovation, and entrepreneurship.
- PEO4: Ethics and Leadership:** Exhibit leadership qualities, effective communication skills, and a commitment to professional and ethical practices in multidisciplinary and multicultural work environments.

## II. Program Outcomes (POs)

- 1. Engineering knowledge:** Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.
- 2. Problem analysis:** Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusions with consideration for sustainable development. (WK1 to WK4)
- 3. Design/development of solutions:** Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)
- 4. Conduct investigations of complex problems:** Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modeling, analysis & interpretation of data to provide valid conclusions. (WK8).
- 5. Engineering tool usage:** Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations

to solve complex engineering problems. (WK2 and WK6)

**6. The Engineer and The World:** Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

**8. Individual and Collaborative team work:** Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

**9. Communication:** Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

**10. Project management and finance:** Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

**11. Life-long learning:** Recognize the need for, and have the preparation and ability for (i) Independent and life-long learning (ii) adaptability to new and emerging technologies and (iii) Critical thinking in the broadest context of technological change. (WK8)

### III. Program Specific Outcomes (PSOs)

**PSO1: Electrical Systems Design and Analysis:** Analyze the knowledge, design the systematic, and troubleshoot the complexity in the electrical systems, including power grids and industrial machines, using industry-standard simulation software and hardware tools.

**PSO2: Embedded Systems and Electronics Applications:** Design and develop the concepts of an integrated electronic systems and automation protocols that correlate with gap between digital hardware and intelligent software applications.

**PSO3: Sustainable and Renewable Energy Solutions:** Evaluate the efficiency and modern ability of renewable energy sources to create eco-friendly solutions that address global energy transitions and societal needs.

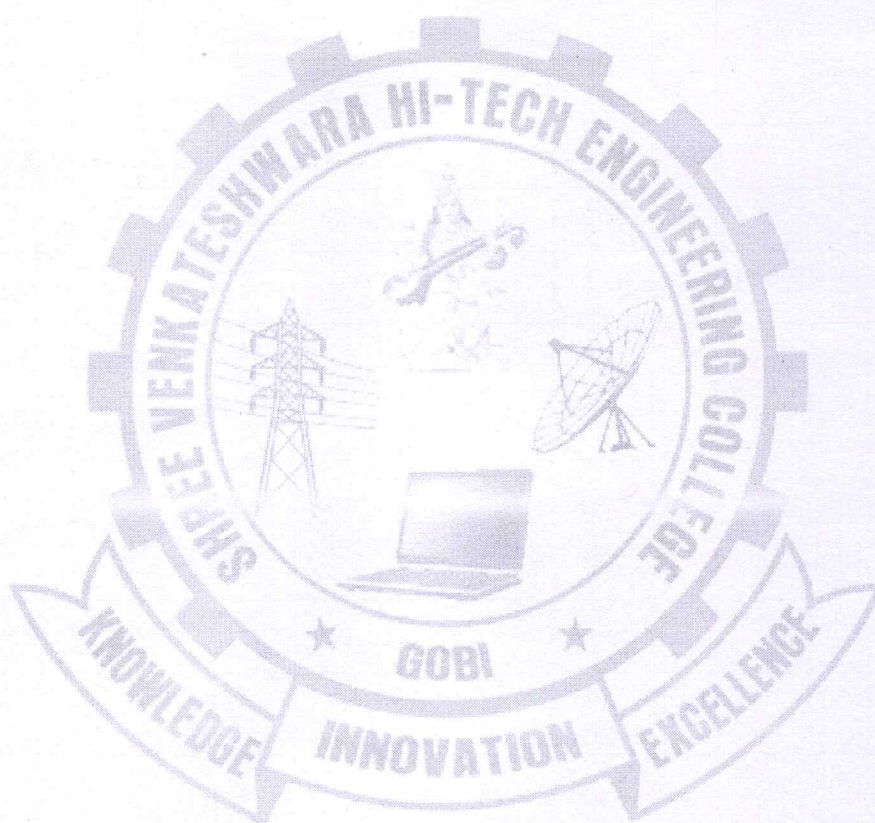
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## Mapping of Course Outcome and Programme Outcome

| Year | Sem | Course name                              | PO |   |     |     |     |   |     |   |   |    |    | PSO |   |   |
|------|-----|------------------------------------------|----|---|-----|-----|-----|---|-----|---|---|----|----|-----|---|---|
|      |     |                                          | 1  | 2 | 3   | 4   | 5   | 6 | 7   | 8 | 9 | 10 | 11 | 1   | 2 | 3 |
| I    | I   | Induction Programme                      |    |   |     |     |     |   |     |   |   |    |    |     |   |   |
|      |     | Communication English - I                | -  | - | -   | 2   | -   | 1 | -   | - | 2 | 3  | -  | -   | - | - |
|      |     | Engineering Mathematics-1                | 3  | 3 | 1   | 1   | -   | - | -   | - | 2 | -  | 2  | -   | - | - |
|      |     | Engineering Physics                      | 3  | 3 | 2   | 1   | 2   | - | -   | - | - | -  | -  | -   | - | - |
|      |     | Engineering Chemistry                    | 3  | 2 | 2   | 1   | 1   | 2 | 3   | - | - | -  | -  | -   | - | - |
|      |     | Problem Solving Using C Programming      | 2  | 3 | 3   | 3   | 2   | - | -   | - | - | -  | 2  | 3   | 3 | 3 |
|      |     | Heritage of Tamils                       | -  | - | -   | -   | -   | - | -   | - | - | -  | -  | -   | - | - |
|      |     | Communication English - I                | -  | - | -   | -   | -   | - | -   | 1 | 3 | 3  | -  | -   | - | - |
|      | II  | Communicative English - II               | -  | 1 | 1   | -   | -   | - | 1   | 1 | 2 | 3  | -  | -   | - | - |
|      |     | Engineering Mathematics-II               | 3  | 3 | 1   | 1   | 1   | - | -   | - | 2 | -  | 2  | -   | - | - |
|      |     | Physics For Electronics Engineering      | 3  | 2 | 1   | -   | -   | - | -   | - | - | -  | -  | -   | - | - |
|      |     | Electric Circuit Analysis                | 3  | 1 | 2   | -   | 2   | - | -   | - | - | 3  | -  | 2   | 2 | - |
|      |     | Engineering Graphics and CAD Modeling    | 2  | - | -   | 0.2 | -   | - | 2   | 2 | 1 | 2  | -  | -   | - | - |
|      |     | Problem Solving and Python Programming   | 3  | 3 | 2   | 2   | -   | - | -   | - | - | 1  | -  | 3   | 3 | 2 |
|      |     | Tamils and Technology                    | -  | - | -   | -   | -   | - | -   | - | - | -  | -  | -   | - | - |
|      |     | Communicative English - II               | 3  | 3 | 3   | 2   | -   | - | -   | - | - | 1  | -  | 3   | 3 | 2 |
| II   | III | DC Machines and Transformers             | 3  | 3 | 2   | 2   | -   | - | -   | - | - | 1  | -  | 3   | 3 | 2 |
|      |     | Electromagnetic Fields                   | 3  | 2 | 1   | 2   | -   | - | 1.4 | 1 | - | -  | -  | 3   | 2 | 1 |
|      |     | Digital Electronics                      | 3  | 2 | 2   | 1   | -   | - | -   | - | - | 1  | -  | 3   | 1 | - |
|      |     | Electron Devices and Circuits            | 1  | 3 | -   | -   | -   | 1 | -   | - | 2 | -  | -  | 3   | 2 | - |
|      |     | Probability Theory and Complex Analysis  | 2  | 3 | 2   | -   | -   | - | -   | - | - | -  | -  | -   | 2 | - |
|      |     | Data Structures                          | 3  | 3 | 2.6 | -   | -   | - | -   | - | 2 | -  | -  | -   | - | - |
|      |     | DC Machines and Transformers Laboratory  | 3  | 3 | 2   | 2   | 1   | - | -   | 1 | - | 1  | -  | 3   | 2 | - |
|      |     | Electron Devices and Circuits Laboratory | -  | 3 | 2.7 | 3   | 3   | - | -   | 2 | - | -  | 3  | -   | 3 | 3 |
|      | IV  | AC Machines                              | 3  | 3 | 1.6 | 2.3 | 2.6 | - | -   | 1 | - | -  | -  | 3   | 3 | 2 |
|      |     | Linear Integrated Circuits               | 3  | 2 | 3   | -   | -   | - | -   | - | - | -  | -  | 3   | 2 | 2 |

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|    |                                               |     |     |     |     |   |     |     |   |   |   |   |   |   |   |
|----|-----------------------------------------------|-----|-----|-----|-----|---|-----|-----|---|---|---|---|---|---|---|
|    | Microprocessor and Microcontroller            | 3   | 2   | 1   | 1   | 1 | -   | -   | - | - | - | - | 2 | 3 | - |
|    | Power Generation, Transmission & Distribution | 3   | 1   | -   | -   | - | -   | -   | - | - | 1 | - | 1 | 1 | - |
|    | Measurements and Instrumentation              | 3   | 2   | 1   | 1   | 1 | -   | -   | - | - | - | - | 3 | 3 | - |
| IV | Soft and Analytical Skills-I                  | 2.8 | 1.4 | 0.6 | 0.2 | - | 2.2 | 2.4 | - | - | - | - | - | - | - |
|    | AC Machines Laboratory                        | 1   | 3   | -   | 2   | 2 | -   | -   | - | 3 | - | - | 3 | 1 | - |
|    | Linear and Digital Circuits Laboratory        | 1   | 3   | -   | 2   | 2 | -   | -   | - | 3 | - | - | 3 | 1 | - |
|    | Microprocessor and Microcontroller Laboratory | 3   | 3   | 1   | 3   | 1 | 2   | -   | 1 | 2 | 3 | - | 1 | 3 | - |


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**SUMMARY OF CREDITS**

| S. No                    | Course Category | Credits per Semester |    |     |    |    |    |     |      | Total Credits | Credits in % | Credits as per AU Curriculum | AU Curriculum Credits in % |
|--------------------------|-----------------|----------------------|----|-----|----|----|----|-----|------|---------------|--------------|------------------------------|----------------------------|
|                          |                 | I                    | II | III | IV | V  | VI | VII | VIII |               |              |                              |                            |
| 1                        | BS              | 11                   | 6  | 4   |    |    |    |     |      | 21            | 12.57        | 22 (-1)                      | 13.50                      |
| 2                        | HUM             | 5                    | 4  |     |    |    | 2  | 8   |      | 19            | 4.79         | 21 (-2)                      | 12.88                      |
| 3                        | ES (G)          |                      | 4  |     |    |    |    |     |      | 4             | 2.40         | 6 (-2)                       | 3.68                       |
| 4                        | ES (PC)         | 4                    | 8  | 21  | 21 | 16 | 11 | 6   |      | 87            | 52.40        | 75 (+12)                     | 46.01                      |
| 5                        | ES (PE)         |                      |    |     |    | 3  | 3  | 3   |      | 9             | 5.39         | 15 (-6)                      | 9.20                       |
| 6                        | OE              |                      |    |     |    |    |    | 3   |      | 3             | 5.39         | 3(0)                         | 1.84                       |
| 7                        | SL              |                      |    |     |    |    | 1  |     |      | 1             | 1.80         | 1(0)                         | 0.61                       |
| 8                        | SD              | 2                    | 2  |     | 1  | 3  | 4  | 1   | 10   | 23            | 5.99         | 21 (+2)                      | 12.88                      |
| 9                        | MC              | ✓                    |    | ✓   | ✓  |    |    |     |      |               |              |                              |                            |
| Total Credits / Semester |                 | 22                   | 24 | 25  | 22 | 22 | 21 | 21  | 10   | 167           | 100          | 163                          | 100                        |

**CATEGORIZATION OF COURSES**

- BS** – Basic Science (Mathematics, Physics, Chemistry)
- HUM** – Humanities (Languages, Management, Heritage, and others)
- ES** – Engineering Science (General **(G)**, Programme Core **(PC)**, Programme Elective **(PE)**, Emerging Technology **(ET)**)
- OE** – Open Elective
- SL** – Self Learning
- SD** – Skill Development
- VA** - Value Added Courses
- OC** - Off Campus Courses
- MC**- Mandatory Courses

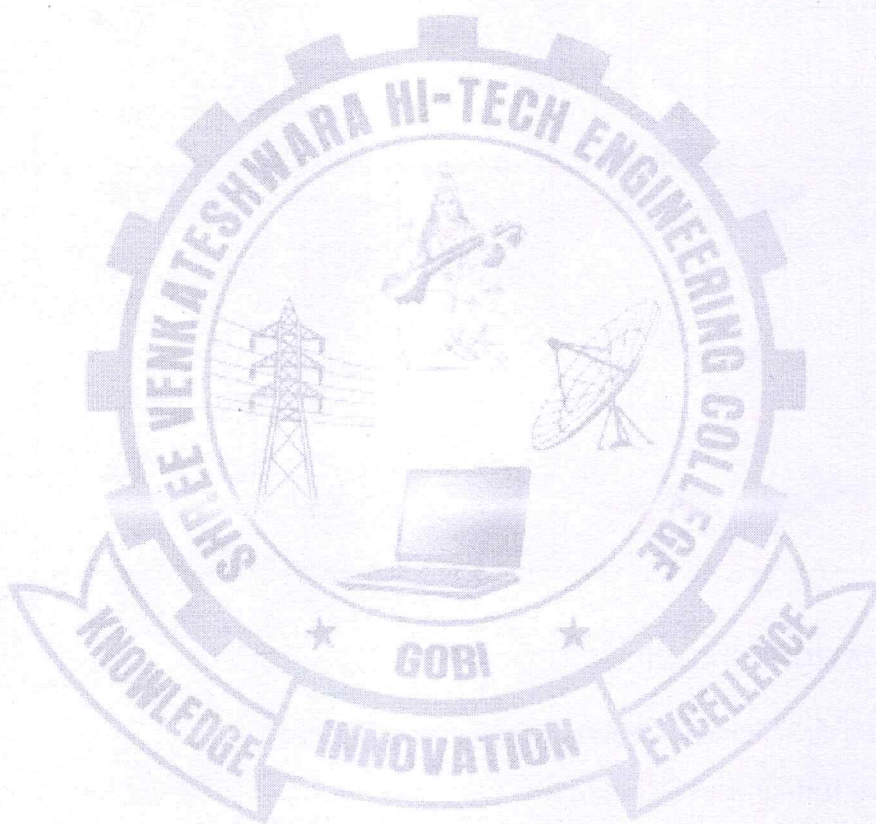
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**ENROLLMENT FOR B.E./B.TECH. (HONOURS)/MINOR DEGREE (OPTIONAL)**

A student can also optionally register for additional courses (18 credits) and become eligible for the award of B.E./B.Tech.(Honours) or Minor Degree.

For B.E. / B. Tech. (Honours), a student shall register for the additional courses (18 credits) from semester V onwards. These courses shall be from the same vertical or a combination of different verticals of the same programme of study only.

For minor degree, a student shall register for the additional courses (18 credits) from semester V onwards. All these courses have to be in a particular vertical from any one of the other programmes.



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# SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE

(Autonomous)

Gobichettipalayam, Erode -638455

Regulation 2025 (UG)

Students Admitted AY 2025-26

Curriculum and Syllabus

BE-Electrical And Electronics Engineering

## SEMESTER I

| S.No              | Course Code | Course Title                        | Category | Periods / Week |   |    | Total Contact Period | Credits | SDG Mapping     | Max.Marks |    |     |
|-------------------|-------------|-------------------------------------|----------|----------------|---|----|----------------------|---------|-----------------|-----------|----|-----|
|                   |             |                                     |          | L              | T | P  |                      |         |                 | CA        | ES | TM  |
| Induction Program |             |                                     |          |                |   |    |                      |         |                 |           |    |     |
| 1.                | 25IPA11     | Induction Programme                 | -        | -              | - | -  | -                    | 0       |                 | -         | -  | -   |
| Theory            |             |                                     |          |                |   |    |                      |         |                 |           |    |     |
| 2.                | 25ENI11     | Communicative English - I           | HUM      | 3              | 0 | 2  | 5                    | 4       | 4,5,8,9,16      | 50        | 50 | 100 |
| 3.                | 25MAT11     | Matrices and Calculus               | BS       | 3              | 0 | 0  | 3                    | 3       | 4, 8,9, 11      | 40        | 60 | 100 |
| 4.                | 25PHI11     | Engineering Physics                 | BS       | 3              | 0 | 2  | 5                    | 4       | 3,4,9,11,12     | 50        | 50 | 100 |
| 5.                | 25CYI11     | Engineering Chemistry               | BS       | 3              | 0 | 2  | 5                    | 4       | 4,6,7           | 50        | 50 | 100 |
| 6.                | 25CSI11     | Problem Solving using C Programming | ES(PC)   | 3              | 0 | 2  | 5                    | 4       | 4, 8, 9,10,17   | 50        | 50 | 100 |
| 7.                | 25TAT11     | Heritage of Tamils                  | HUM      | 1              | 0 | 0  | 1                    | 1       | 3,4,8,11,16     | 40        | 60 | 100 |
| Practicals        |             |                                     |          |                |   |    |                      |         |                 |           |    |     |
| 8.                | 25MEL11     | Idea Lab                            | SD       | 0              | 0 | 4  | 4                    | 2       | 4, 8, 9, 11, 12 | 60        | 40 | 100 |
| Mandatory Course  |             |                                     |          |                |   |    |                      |         |                 |           |    |     |
| 9.                | 25MDC11     | Yoga for Human Excellence           | MC       | 0              | 0 | 1  | 1                    | 0       | 3, 4, 5, 10, 16 | 100       | -  | 100 |
| Total             |             |                                     |          | 16             | 0 | 13 | 29                   | 22      |                 |           |    |     |

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Curriculum and Syllabus

BE-Electrical And Electronics Engineering

## SEMESTER II

| S.No       | Course Code | Course Title                                 | Category | Periods / Week |   |    | Total Contact Period | Credits | SDG Mapping       | Max.Marks |    |     |
|------------|-------------|----------------------------------------------|----------|----------------|---|----|----------------------|---------|-------------------|-----------|----|-----|
|            |             |                                              |          | L              | T | P  |                      |         |                   | CA        | ES | TM  |
| Theory     |             |                                              |          |                |   |    |                      |         |                   |           |    |     |
| 1.         | 25ENI21     | Communicative English - II                   | HUM      | 2              | 0 | 2  | 4                    | 3       | 4,5,8,9,16        | 50        | 50 | 100 |
| 2.         | 25MAT21     | Numerical Methods and Differential Equations | BS       | 3              | 0 | 0  | 3                    | 3       | 4,8,9,11          | 40        | 60 | 100 |
| 3.         | 25PHT23     | Physics For Electronics Engineering          | BS       | 3              | 0 | 0  | 3                    | 3       | 3,7,8,9,10,12     | 40        | 60 | 100 |
| 4.         | 25EEI23     | Electric Circuit Analysis                    | ES(PC)   | 3              | 0 | 2  | 5                    | 4       | 4,7,9,12          | 50        | 50 | 100 |
| 5.         | 25CSI21     | Python Programming                           | ES(PC)   | 3              | 0 | 2  | 5                    | 4       | 4,8,9,13          | 50        | 50 | 100 |
| 6.         | 25EEI21     | Engineering Graphics and CAD Modeling        | ES(G)    | 2              | 0 | 4  | 6                    | 4       | 4,7,9,11,13       | 50        | 50 | 100 |
| 7.         | 25TAT21     | Tamils and Technology                        | HUM      | 1              | 0 | 0  | 1                    | 1       | 2,4,6,9,11,12     | 40        | 60 | 100 |
| Practicals |             |                                              |          |                |   |    |                      |         |                   |           |    |     |
| 8.         | 25EEL21     | Vision Exploration Laboratory                | SD       | 0              | 0 | 4  | 4                    | 2       | 4,8,9,10,12,13,17 | 60        | 40 | 100 |
| Total      |             |                                              |          | 17             | 0 | 14 | 32                   | 24      |                   |           |    |     |

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## SEMESTER III

| S.No              | Course Code | Course Title                             | Category | Periods / Week |   |    | Total Contact Period | Credits | SDG Mapping | Max.Marks |    |     |
|-------------------|-------------|------------------------------------------|----------|----------------|---|----|----------------------|---------|-------------|-----------|----|-----|
|                   |             |                                          |          | L              | T | P  |                      |         |             | CA        | ES | TM  |
| Theory            |             |                                          |          |                |   |    |                      |         |             |           |    |     |
| 1.                | 25MAT33     | Probability Theory and Complex Analysis  | BS       | 3              | 1 | 0  | 4                    | 4       | 4,8,9,17    | 40        | 60 | 100 |
| 2.                | 25EET31     | DC Machines and Transformers             | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,13      | 40        | 60 | 100 |
| 3.                | 25EET32     | Electromagnetic Fields                   | ES(PC)   | 3              | 1 | 0  | 4                    | 4       | 3,7,9       | 40        | 60 | 100 |
| 4.                | 25EET33     | Digital Electronics                      | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 5.                | 25EET34     | Electron Devices and Circuits            | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 6.                | 25CSI32     | Data Structures                          | ES(PC)   | 2              | 0 | 2  | 4                    | 4       | 4,8,9,12,17 | 50        | 50 | 100 |
| Practicals        |             |                                          |          |                |   |    |                      |         |             |           |    |     |
| 7                 | 25EEL31     | DC Machines and Transformers Laboratory  | ES(PC)   | 0              | 0 | 4  | 4                    | 2       | 4,7,9       | 60        | 40 | 100 |
| 8                 | 25EEL32     | Electron Devices and Circuits Laboratory | ES(PC)   | 0              | 0 | 4  | 4                    | 2       | 7,9,12      | 60        | 40 | 100 |
| Total             |             |                                          |          | 17             | 2 | 10 | 29                   | 25      |             |           |    |     |
| Mandatory Courses |             |                                          |          |                |   |    |                      |         |             |           |    |     |
| 10                |             | Mandatory Course-II &                    | MC       | 3              | 0 | 0  | 3                    | 0       |             | 100       | -  | 100 |

& Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-II)

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BE-Electrical And Electronics Engineering

## SEMESTER IV

| S.No              | Course Code | Course Title                                  | Category | Periods / Week |   |    | Total Contact Period | Credits | SDG Mapping | Max.Marks |    |     |
|-------------------|-------------|-----------------------------------------------|----------|----------------|---|----|----------------------|---------|-------------|-----------|----|-----|
|                   |             |                                               |          | L              | T | P  |                      |         |             | CA        | ES | TM  |
| Theory            |             |                                               |          |                |   |    |                      |         |             |           |    |     |
| 1.                | 25EET41     | AC Machines                                   | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 2.                | 25EET42     | Linear Integrated Circuits                    | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 3,7,9       | 40        | 60 | 100 |
| 3.                | 25EET43     | Microprocessor and Microcontroller            | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,11      | 40        | 60 | 100 |
| 4.                | 25EET44     | Power Generation, Transmission & Distribution | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,11      | 40        | 60 | 100 |
| 5.                | 25EET45     | Measurements and Instrumentation              | ES(PC)   | 3              | 0 | 0  | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 6.                | 25SDC41     | Soft and Analytical Skills-I                  | SD       | 1              | 0 | 0  | 1                    | 1       | 4,8,10      | 100       | -  | 100 |
| Practicals        |             |                                               |          |                |   |    |                      |         |             |           |    |     |
| 7.                | 25EEL41     | AC Machines Laboratory                        | ES(PC)   | 0              | 0 | 4  | 4                    | 2       | 7,9,12      | 60        | 40 | 100 |
| 8.                | 25EEL42     | Linear and Digital Circuits Laboratory        | ES(PC)   | 0              | 0 | 4  | 4                    | 2       | 7,9,12      | 60        | 40 | 100 |
| 9.                | 25EEL43     | Microprocessor and Microcontroller Laboratory | ES(PC)   | 0              | 0 | 4  | 4                    | 2       | 7,9,11      | 60        | 40 | 100 |
| TOTAL             |             |                                               |          | 16             | 0 | 12 | 28                   | 22      |             |           |    |     |
| Mandatory Courses |             |                                               |          |                |   |    |                      |         |             |           |    |     |
| 10                |             | Mandatory Courses – III &                     | MC       | 3              | 0 | 0  | 3                    | 0       |             | 100       | -  | 100 |

& Mandatory Course-II is a Non-credit Course (Student shall select one course from the list given under Mandatory Course-II)

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Curriculum and Syllabus

BE-Electrical And Electronics Engineering

## SEMESTER V

| S.No       | Course Code | Course Title                           | Category | Periods / Week |   |   | Total Contact Period | Credits | SDG Mapping | Max.Marks |    |     |
|------------|-------------|----------------------------------------|----------|----------------|---|---|----------------------|---------|-------------|-----------|----|-----|
|            |             |                                        |          | L              | T | P |                      |         |             | CA        | ES | TM  |
| Theory     |             |                                        |          |                |   |   |                      |         |             |           |    |     |
| 1.         | 25EET51     | Power System Analysis                  | ES(PC)   | 3              | 0 | 0 | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 2.         | 25EEI52     | Power Electronics                      | ES(PC)   | 2              | 0 | 2 | 4                    | 4       | 4,9         | 40        | 60 | 100 |
| 3.         | 25EET53     | Control Systems                        | ES(PC)   | 3              | 1 | 0 | 3                    | 4       | 9,11        | 40        | 60 | 100 |
| 4.         | 25EET54     | Electrical Machine Design              | ES(PC)   | 3              | 1 | 0 | 4                    | 3       | 9,11        | 40        | 60 | 100 |
| 5.         |             | Programme Elective-I*                  | ES(PE)   | -              | - | - | -                    | 3       |             | 40        | 60 | 100 |
| 6.         | 25EEI55     | Industrial Oriented Course –I          | SD       | 1              | 0 | 2 | 3                    | 2       |             | 50        | 50 | 100 |
| 7.         | 25SDC51     | Soft and Analytical Skills-II          | SD       | 1              | 0 | 0 | 1                    | 1       | 4,8         | 100       | -  | 100 |
| Practicals |             |                                        |          |                |   |   |                      |         |             |           |    |     |
| 8.         | 25EEL51     | Control and Instrumentation Laboratory | ES(PC)   | 0              | 0 | 4 | 4                    | 2       | 7,9,12      | 60        | 40 | 100 |
| Total      |             |                                        |          | 17             | 0 | 9 | 26                   | 22      |             |           |    |     |

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# SHREE VENKATESHWARA HI-TECH ENGINEERING COLLEGE

(Autonomous)

Gobichettipalayam, Erode -638455

Regulation 2025 (UG)

Students Admitted AY 2025-26

Curriculum and Syllabus

BE-Electrical And Electronics Engineering

## SEMESTER VI

| S.No       | Course Code | Course Title                                       | Category | Periods / Week |   |   | Total Contact Period | Credits | SDG Mapping | Max.Marks |    |     |
|------------|-------------|----------------------------------------------------|----------|----------------|---|---|----------------------|---------|-------------|-----------|----|-----|
|            |             |                                                    |          | L              | T | P |                      |         |             | CA        | ES | TM  |
| Theory     |             |                                                    |          |                |   |   |                      |         |             |           |    |     |
| 1.         | 25EET61     | Protection and Switchgear                          | ES(PC)   | 3              | 0 | 0 | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 2.         | 25EEI62     | Electric Drives                                    | ES(PC)   | 2              | 0 | 2 | 4                    | 3       | 9,12        | 40        | 60 | 100 |
| 3.         | 25EET63     | Communication Engineering                          | ES(PC)   | 3              | 0 | 0 | 3                    | 3       | 9,11        | 40        | 60 | 100 |
| 4.         |             | Programme Elective – II*(from Emerging Technology) | ES(PE)   | -              | - | - | -                    | 3       |             | 40        | 60 | 100 |
| 5.         | 25CYT61     | Climate Change and Sustainability                  | HUM      | 2              | 0 | 0 | 2                    | 2       | 9,12        | 40        | 60 | 100 |
| 6.         | 25EEI64     | Industrial Oriented Course-II**                    | SD       | 1              | 0 | 3 | 3                    | 2       |             | 100       | -  | 100 |
| 7.         |             | Self Learning Course                               | SL       | 1              | 0 | 0 | 1                    | 1       | 1,5,8,17    | -         | -  | -   |
| Practicals |             |                                                    |          |                |   |   |                      |         |             |           |    |     |
| 8          | 25EEL61     | Power System Laboratory                            | ES(PC)   | 0              | 0 | 4 | 4                    | 2       | 7,9,12      | 60        | 40 | 100 |
| 9          | 25EEL62     | Mini Project                                       | SD       | 0              | 0 | 4 | 4                    | 2       | 4,9,12,17   | 60        | 40 | 100 |
| Total      |             |                                                    |          | 17             | 0 | 9 | 26                   | 21      |             |           |    |     |

Program Elective-IV to VI shall be chosen from the list Program electives (Streams) offered by same Programme

\*\* Open Elective - I shall be chosen from the list of open electives offered by other Programmes

@ The students individually undergo training in reputed firms/ research institutes / laboratories for the specified duration (02Weeks) during VI semester summer vacation. After the completion of training, a detailed report should be submitted within ten days from the commencement of VII semester.

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**BoS/EEE**



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## SEMESTER VII

| S.No       | Course Code | Course Title                             | Category | Periods / Week |   |   | Total Contact Period | Credits | SDG Mapping | Max.Marks |    |     |
|------------|-------------|------------------------------------------|----------|----------------|---|---|----------------------|---------|-------------|-----------|----|-----|
|            |             |                                          |          | L              | T | P |                      |         |             | CA        | ES | TM  |
| Theory     |             |                                          |          |                |   |   |                      |         |             |           |    |     |
| 1          | 25EET71     | High Voltage Engineering                 | ES(PC)   | 3              | 0 | 0 | 3                    | 3       | 7,9,12      | 40        | 60 | 100 |
| 2          | 25EET72     | Embedded Systems                         | ES(PC)   | 3              | 0 | 0 | 3                    | 3       | 9,12        | 40        | 60 | 100 |
| 3          | 25EST71     | Engineering Entrepreneurship Development | HUM      | 3              | 0 | 0 | 3                    | 3       | 4,7,6       | 40        | 60 | 100 |
| 4          | 25UHV71     | Universal Human Values-II                | HUM      | 3              | 0 | 0 | 3                    | 3       | 7,9         | 40        | 60 | 100 |
| 5          |             | Open Elective**                          | OE       | 3              | 0 | 0 | 3                    | 3       |             | 40        | 60 | 100 |
| 6          | 25EEI73     | Project Management                       | HUM      | 2              | 0 | 0 | 2                    | 2       | 3,11        | 60        | 40 | 100 |
| 7          |             | Programme Elective – III*                | ES(PE)   | -              | - | - | -                    | 3       |             | -         | -  | 100 |
| Practicals |             |                                          |          |                |   |   |                      |         |             |           |    |     |
| 8          | 25EEL71     | Summer Internship @                      | SD       | 0              | 0 | 0 | 0                    | 1       | 100         | -         | -  | 100 |
| Total      |             |                                          |          | -              | - | - | -                    | 21      |             |           |    |     |

\* Program Elective – VII shall be chosen from the list Program electives (Streams)

offered by same Programme

\*\* Open Elective – II to IV shall be chosen from the list of open electives offered by other Programmes

# Elective – Management shall be chosen from the list of Elective – Management course

@ The students undergone summer internship during VI semester summer vacation and same will be evaluated in VII semester

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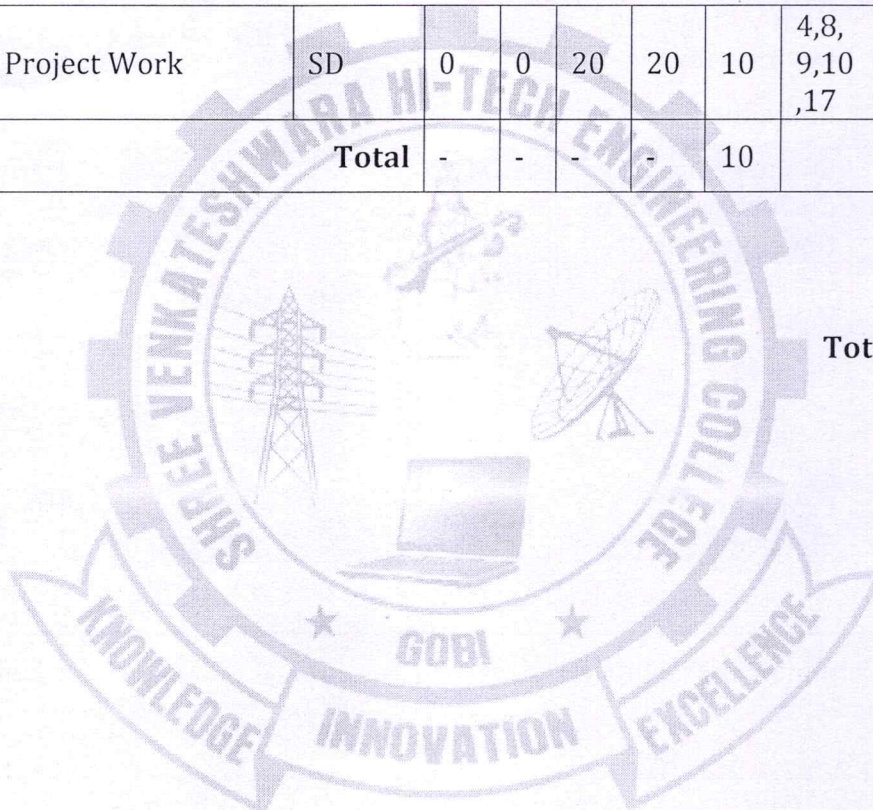
Curriculum and Syllabus

BE-Electrical And Electronics Engineering

## SEMESTER VIII

| S.No   | Course Code | Course Title | Category | Periods / Week |   |    | Total Contact Period | Credits | SDG Mapping | Max.Marks |    |     |
|--------|-------------|--------------|----------|----------------|---|----|----------------------|---------|-------------|-----------|----|-----|
|        |             |              |          | L              | T | P  |                      |         |             | CA        | ES | TM  |
| Theory |             |              |          |                |   |    |                      |         |             |           |    |     |
| 1      | 25EEL81     | Project Work | SD       | 0              | 0 | 20 | 20                   | 10      | 4,8,9,10,17 | 60        | 40 | 100 |
| Total  |             |              |          | -              | - | -  | -                    | 10      |             |           |    |     |

Total Credits = 167



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## MANDATORY COURSES II

| S.No | Course Code | Course Title                             | Category | Periods / Week |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|------|-------------|------------------------------------------|----------|----------------|---|---|----------------------|---------|-----------|----|-----|
|      |             |                                          |          | L              | T | P |                      |         | CA        | ES | TM  |
| 1.   | 25MDC31     | Introduction to Women and Gender Studies | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 2.   | 25MDC32     | Elements of Literature                   | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 3.   | 25MDC33     | Film Appreciation                        | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 4.   | 25MDC34     | Disaster Risk Reduction and Management   | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |

## MANDATORY COURSES III

| S.No | Course Code | Course Title                                                     | Category | Periods / Week |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|------|-------------|------------------------------------------------------------------|----------|----------------|---|---|----------------------|---------|-----------|----|-----|
|      |             |                                                                  |          | L              | T | P |                      |         | CA        | ES | TM  |
| 1.   | 25MDC41     | Well Being with Traditional Practices -Yoga, Ayurveda and Siddha | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 2.   | 25MDC42     | History of Science and Technology in India                       | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 3.   | 25MDC43     | Political and Economic Thought for a Humane Society              | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 4.   | 25MDC44     | State,Nation Building and Politics in India                      | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |
| 5.   | 25MDC45     | Industrial Safety                                                | MC       | 3              | 0 | 0 | 3                    | 0       | 100       | -  | 100 |

## OPEN ELECTIVES

| S. NO.                                                          | COURSE CODE | COURSE TITLE                                     | Category | PERIODS WEEK |   | PER |    | Total Contact Period | Credits   | SDG MAPPING | Max.Marks |     |  |
|-----------------------------------------------------------------|-------------|--------------------------------------------------|----------|--------------|---|-----|----|----------------------|-----------|-------------|-----------|-----|--|
|                                                                 |             |                                                  |          | L            | T | P   | CA |                      |           |             | ES        | TM  |  |
| OFFERED BY DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING |             |                                                  |          |              |   |     |    |                      |           |             |           |     |  |
| 1.                                                              | 25EE011     | Renewable Energy Sources                         | OE       | 3            | 0 | 0   | 3  | 3                    | 7,9,11,13 | 40          | 60        | 100 |  |
| 2.                                                              | 25EE012     | Electrical Vehicle                               | OE       | 3            | 0 | 0   | 3  | 3                    | 7,9,11,13 | 40          | 60        | 100 |  |
| 3.                                                              | 25EE013     | Energy Auditing and Conservation                 | OE       | 3            | 0 | 0   | 3  | 3                    | 7,9,11,13 | 40          | 60        | 100 |  |
| 4.                                                              | 25EE014     | Domestic and Industrial Electrical Installations | OE       | 3            | 0 | 0   | 3  | 3                    | 7,9,11,13 | 40          | 60        | 100 |  |
| 5.                                                              | 25EE015     | Microcontroller Based System Design              | OE       | 3            | 0 | 0   | 3  | 3                    | 7,9,11,13 | 40          | 60        | 100 |  |

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### PROGRAMME ELECTIVE COURSES: STREAMS

| Power Engineering                                 | Converters and Drives                          | Embedded Systems                             | Emerging Technology                                        | Advanced Computing | Diversified Courses                                         |
|---------------------------------------------------|------------------------------------------------|----------------------------------------------|------------------------------------------------------------|--------------------|-------------------------------------------------------------|
| Electrical Energy Conservation and Sustainability | Special Electrical Machines                    | Embedded System Design                       | Electric Vehicle Architecture                              | Cloud computing    | Energy Storage Systems                                      |
| Under Ground Cable Engineering                    | Analysis of Electrical Machines                | Embedded C-Programming                       | Design of Motor and Power Converters for Electric Vehicles | Machine Learning   | Hybrid Energy Technology                                    |
| Substation Engineering and Automation             | Multilevel Power Converters                    | Embedded Processors                          | Electric Vehicle Design, Mechanics and Control             | Java               | Design and Modelling of Renewable Energy Systems            |
| HVDC and FACTS                                    | Power System Operation and control             | Embedded Control for Electric Drives         | Design of Electric Vehicle Charging System                 | Full Stack         | Grid integrating Techniques and Challenges                  |
| Energy Management and Auditing                    | SMPS and UPS                                   | Smart System Automation                      | Testing of Electric Vehicles                               | Soft Computing     | Sustainable and Environmental Friendly HV Insulation System |
| Power Quality                                     | Power Electronics for Renewable Energy Systems | Embedded System for Automotive Applications. | Grid Integration of Electric Vehicles                      | Big Data           | Power System Transients                                     |
| Smart Grids                                       | Control of Power Electronics Circuits          | VLSI Design                                  | Intelligent control of Electric Vehicles                   | Cryptography       | PLC Programming                                             |

#### Registration of Professional Elective Courses from Verticals:

Professional Elective Courses will be registered in Semesters V and VI. These courses are listed in groups called verticals that represent a particular area of specialization / diversified group. Students are permitted to choose all the Professional Electives from a particular vertical or from different verticals. Further, only one Professional Elective course shall be chosen in a semester horizontally (row-wise). However, two courses are permitted from the same row, provided one course is enrolled in Semester V and another in semester VI.

The registration of courses for B.E./B.Tech (Honours) or Minor degree shall be done from Semester V to VIII. The procedure for registration of courses explained above shall be followed for the courses of B.E./B.Tech (Honours) or Minor degree also. For more details on B.E./B.Tech (Honours) or Minor degree refer to the Regulations 2025, (Clause 18,19).

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**PROGRAM ELECTIVE COURSES: STREAMS**

**STREAMI: POWER ENGINEERING**

| S. NO. | COURSE CODE | COURSE TITLE                                      | Category | PERIODS PER WEEK |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|--------|-------------|---------------------------------------------------|----------|------------------|---|---|----------------------|---------|-----------|----|-----|
|        |             |                                                   |          | L                | T | P |                      |         | CA        | ES | TM  |
| 1.     | 25EEE11     | Electrical Energy Conservation and Sustainability | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 2.     | 25EEE12     | Under Ground Cable Engineering                    | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 3.     | 25EEE13     | Substation Engineering and Automation             | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 4.     | 25EEE14     | HVDC and FACTS                                    | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 5.     | 25EEE15     | Energy Management and Auditing                    | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 6.     | 25EEE16     | Power Quality                                     | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 7.     | 25EEE17     | Smart Grid                                        | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |

**STREAMII: CONVERTERS AND DRIVES**

| S. NO. | COURSE CODE | COURSE TITLE                                   | Category | PERIODS PER WEEK |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|--------|-------------|------------------------------------------------|----------|------------------|---|---|----------------------|---------|-----------|----|-----|
|        |             |                                                |          | L                | T | P |                      |         | CA        | ES | TM  |
| 1.     | 25EEE21     | Special Electrical Machines                    | ES(PE)   | 2                | 0 | 2 | 3                    | 3       | 50        | 50 | 100 |
| 2.     | 25EEE22     | Analysis of Electrical Machines                | ES(PE)   | 2                | 0 | 2 | 3                    | 3       | 50        | 50 | 100 |
| 3.     | 25EEE25     | Multilevel Power Converters                    | ES(PE)   | 2                | 0 | 2 | 3                    | 3       | 50        | 50 | 100 |
| 4.     | 25EEE24     | Power System Operation and Control             | ES(PE)   | 2                | 0 | 2 | 3                    | 3       | 50        | 50 | 100 |
| 5.     | 25EEE25     | SMPS and UPS                                   | ES(PE)   | 2                | 0 | 2 | 3                    | 3       | 50        | 50 | 100 |
| 6.     | 25EEE26     | Power Electronics for Renewable Energy Systems | ES(PE)   | 2                | 0 | 2 | 3                    | 3       | 50        | 50 | 100 |
| 7.     | 25EEE27     | Control of Power Electronics Circuits          | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |

**STREAM III: EMBEDDED SYSTEMS**

| S. NO. | COURSE CODE | COURSE TITLE                                | Category | PERIODS PER WEEK |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|--------|-------------|---------------------------------------------|----------|------------------|---|---|----------------------|---------|-----------|----|-----|
|        |             |                                             |          | L                | T | P |                      |         | CA        | ES | TM  |
| 1.     | 25EEE31     | Embedded System Design                      | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 2.     | 25EEE32     | Embedded C- programming                     | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 3.     | 25EEE33     | Embedded Processors                         | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 4.     | 25EEE34     | Embedded Control for Electric Drives        | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 5.     | 25EEE35     | Smart System Automation                     | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 6.     | 25EEE36     | Embedded System for Automotive Applications | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 7.     | 25EEE37     | VLSI Design                                 | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |

**STREAM IV: EMERGING TECHNOLOGY**

| S. NO. | COURSE CODE | COURSE TITLE                                               | Category | PERIODS PER WEEK |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|--------|-------------|------------------------------------------------------------|----------|------------------|---|---|----------------------|---------|-----------|----|-----|
|        |             |                                                            |          | L                | T | P |                      |         | CA        | ES | TM  |
| 1.     | 25EEE41     | Electric Vehicle Architecture                              | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 2.     | 25EEE42     | Design of Motor and Power Converters for Electric Vehicles | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 3.     | 25EEE43     | Electric Vehicle Design, Mechanics and Control             | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 4.     | 25EEE44     | Design of Electric Vehicle Charging System                 | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 5.     | 25EEE45     | Testing of Electric Vehicles                               | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 6.     | 25EEE46     | Grid Integration of Electric Vehicles                      | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 7.     | 25EEE47     | Intelligent Control of Electric Vehicles                   | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |

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**STREAM V:ADVANCED COMPUTING**

| S. NO. | COURSE CODE | COURSE TITLE     | Category | PERIODS PER WEEK |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|--------|-------------|------------------|----------|------------------|---|---|----------------------|---------|-----------|----|-----|
|        |             |                  |          | L                | T | P |                      |         | CA        | ES | TM  |
| 1.     | 25EEE51     | Cloud computing  | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 2.     | 25EEE52     | Machine Learning | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 3.     | 25EEE53     | Java             | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 4.     | 25EEE54     | Full Stack       | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 5.     | 25EEE55     | Soft Computing   | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 6.     | 25EEE56     | Big Data         | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 7.     | 25EEE57     | Cryptography     | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |

**STREAM VI- DIVERSIFIED COURSES**

| S. NO. | COURSE CODE | COURSE TITLE                                                | Category | PERIODS PER WEEK |   |   | Total Contact Period | Credits | Max.Marks |    |     |
|--------|-------------|-------------------------------------------------------------|----------|------------------|---|---|----------------------|---------|-----------|----|-----|
|        |             |                                                             |          | L                | T | P |                      |         | CA        | ES | TM  |
| 1.     | 25EEE61     | Energy Storage Systems                                      | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 2.     | 25EEE62     | Hybrid Energy Technology                                    | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 3.     | 25EEE63     | Design and Modeling of Renewable Energy Systems             | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 4.     | 25EEE64     | Grid integrating Techniques and Challenges                  | ES(PE)   | 2                | 0 | 2 | 4                    | 3       | 50        | 50 | 100 |
| 5.     | 25EEE65     | Sustainable and Environmental Friendly HV Insulation System | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 6.     | 25EEE66     | Power System Transients                                     | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |
| 7.     | 25EEE67     | PLC Programming                                             | ES(PE)   | 3                | 0 | 0 | 3                    | 3       | 40        | 60 | 100 |

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