

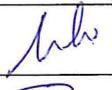
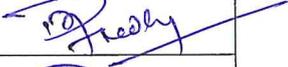
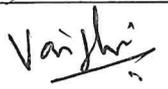
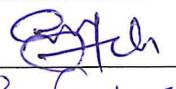
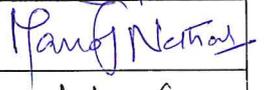
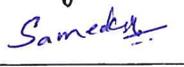
Date: 01-12-2022

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

### MINUTES OF MEETING - BOARD OF STUDIES (BOS)

Minutes of Meeting of Board of Studies of Department of Electrical and Electronics Engineering held on 30<sup>th</sup> November 2022 at 05.00 P.M. through online mode (Microsoft teams).

#### Members Present:

| S. No. | Name of the Faculty   | Designation        | Signature   |
|--------|---|--------------------|---|
| 1.     | Dr. N. Ramchandra<br>(Associate Professor & HOD, SMEC)  | Chairman           |    |
| 2.     | Dr. K. Naga Sujatha<br>(Professor & Head of the Department,<br>Dept. of EEE, JNTUH College of<br>Engineering Hyderabad) | University Nominee |   |
| 3.     | Dr. P. Sridhar<br>(Dean - IQAC & Professor in EEE,<br>IARE, Hyderabad)  | Educationist       |  |
| 4.     | Dr. M. Sharanya<br>(Professor and HOD, Dept. of EEE,<br>MRCET)  | Educationist       |  |
| 5.     | Dr. S. V. S. RamaKrishnam Raju<br>(Dean Academics, SMEC)  | Member             |  |
| 6.     | Dr. D. Ranadheer Reddy<br>(Professor & HOD, H&S, SMEC)  | Member             |  |
| 7.     | Dr. T. Vishnu charan<br>(Associate General Manager-Electrical<br>Engineering, Worley)                                   | Industrialist      |  |
| 8.     | Dr. Vaigundamoorthi<br>(Professor and Controller of<br>Examinations)  | Faculty Member     |  |
| 9.     | Mr. CH. Srinivas<br>(Assistant Professor of EEE, SMEC)  | Faculty Member     |  |
| 10.    | Mr. N. D. Manoj<br>(Assistant Professor of EEE, SMEC)   | Faculty Member     |  |
| 11.    | Mrs. T. V. Sai Kalyani<br>(Assistant Professor of EEE, SMEC)  | Faculty Member     |  |
| 12.    | Ms. Sameeksha<br>(Senior Systems Engineer, Infosys)   | Alumni Member      |  |

The Chairman of BOS Committee, Dr. N. Ramchandra has extended a warm welcome to the University Nominee, Dr. K. Naga Sujatha Madam, Professor & HOD of EEE, JNTU College of Engineering, Hyderabad and all others BOS members.

**The following points were discussed and approved during the meeting**

1. The following SMEC R22 course structure and detailed syllabus of I-I, I-II and II-I, II-II year were presented, discussed and approved. The total credits for the program were discussed, finalized and approved.

### I YEAR I SEMESTER

| S. No.       | Course Code | Course Title                                       | Hours per Week |          |           | Credits   | Maximum Marks  |                |            |
|--------------|-------------|--|----------------|----------|-----------|-----------|----------------|----------------|------------|
|              |             |  | L              | T        | P         |           | Internal (CIE) | External (SEE) | Total      |
| 1            | MA101BS     | Matrices and Calculus                              | 3              | 1        | 0         | 4         | 40             | 60             | 100        |
| 2            | CH102BS     | Engineering Chemistry                              | 3              | 1        | 0         | 4         | 40             | 60             | 100        |
| 3            | CS104ES     | C Programming and Data Structures                  | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 4            | EE105ES     | Electrical Circuit Analysis-I                      | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 5            | ME108ES     | Computer Aided Engineering Graphics                | 1              | 0        | 4         | 3         | 40             | 60             | 100        |
| 6            | EE107ES     | Elements of Electrical and Electronics Engineering | 0              | 0        | 2         | 1         | 50             | -              | 50         |
| 7            | CH104BS     | Engineering Chemistry Laboratory                   | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 8            | CS103ES     | C Programming and Data Structures Laboratory       | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 9            |             | Induction Program                                  |                |          |           |           |                |                |            |
| <b>Total</b> |             |  | <b>13</b>      | <b>2</b> | <b>10</b> | <b>20</b> | <b>330</b>     | <b>420</b>     | <b>750</b> |

### I YEAR II SEMESTER

| S. No.                        | Course Code | Course Title   | Hours per Week |          |           | Credits   | Maximum Marks  |                |            |
|-------------------------------|-------------|--|----------------|----------|-----------|-----------|----------------|----------------|------------|
|                               |             |  | L              | T        | P         |           | Internal (CIE) | External (SEE) | Total      |
| 1                             | MA201BS     | Ordinary Differential Equations and Vector Calculus  | 3              | 1        | 0         | 4         | 40             | 60             | 100        |
| 2                             | AP202BS     | Applied Physics                                      | 3              | 1        | 0         | 4         | 40             | 60             | 100        |
| 3                             | ME207ES     | Engineering Workshop                                 | 0              | 1        | 3         | 2.5       | 40             | 60             | 100        |
| 4                             | EN204HS     | English for Skill Enhancement                        | 2              | 0        | 0         | 2         | 40             | 60             | 100        |
| 5                             | EE209ES     | Electrical Circuit Analysis- II                      | 2              | 0        | 0         | 2         | 40             | 60             | 100        |
| 6                             | AP203BS     | Applied Physics Laboratory                           | 0              | 0        | 3         | 1.5       | 40             | 60             | 100        |
| 7                             | EN205HS     | English Language and Communication Skills Laboratory | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 8                             | CS205ES     | Python Programming Laboratory                        | 0              | 1        | 2         | 2         | 40             | 60             | 100        |
| 9                             | EE210ES     | Electrical Circuit Analysis Laboratory               | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| <b>Total</b>                  |             |  | <b>10</b>      | <b>4</b> | <b>12</b> | <b>20</b> | <b>360</b>     | <b>540</b>     | <b>900</b> |
| Mandatory Course (Non-Credit) |             |  |                |          |           |           |                |                |            |
| 10                            | *CH209MC    | Environmental Science                                | 3              | 0        | 0         | 0         | 100            | -              | 100        |

\*MC-Satisfied/Unsatisfied

### II B.Tech-I-Semester

| S. No.                        | Course Code | Course Title                            | Hours Per Week |          |          | Credits   | Maximum Marks  |                |            |
|-------------------------------|-------------|---|----------------|----------|----------|-----------|----------------|----------------|------------|
|                               |             |   | L              | T        | P        |           | Internal (CIE) | External (SEE) | Total      |
| 1.                            | MA301BS     | Numerical Methods and Complex Variables | 3              | 1        | 0        | 4         | 40             | 60             | 100        |
| 2.                            | EE301PC     | Electrical Machines – I                 | 3              | 1        | 0        | 4         | 40             | 60             | 100        |
| 3.                            | EC308PC     | Analog Electronic Circuits              | 3              | 0        | 0        | 3         | 40             | 60             | 100        |
| 4.                            | EE302PC     | Power Systems – I                       | 3              | 0        | 0        | 3         | 40             | 60             | 100        |
| 5.                            | EE303PC     | Electro Magnetic Fields                 | 3              | 0        | 0        | 3         | 40             | 60             | 100        |
| 6.                            | EE304PC     | Electrical Machines Laboratory – I      | 0              | 0        | 2        | 1         | 40             | 60             | 100        |
| 7.                            | EC309PC     | Analog Electronic Circuit Laboratory    | 0              | 0        | 2        | 1         | 40             | 60             | 100        |
| 8.                            | EE305PC     | Electrical Simulation Laboratory        | 0              | 0        | 2        | 1         | 40             | 60             | 100        |
| <b>Total</b>                  |             |   | <b>15</b>      | <b>2</b> | <b>6</b> | <b>20</b> | <b>320</b>     | <b>480</b>     | <b>800</b> |
| Mandatory Course (Non-Credit) |             |   |                |          |          |           |                |                |            |
| 9.                            | *GS309MC    | Gender Sensitization Laboratory         | 0              | 0        | 2        | 0         | 100            | -              | 100        |

\*MC–Satisfied/Unsatisfied

### II B. Tech-II-Semester

| S.No.                         | Course Code | Course Title                                     | Hours Per Week |          |           | Credits   | Maximum Marks  |                |            |
|-------------------------------|-------------|--|----------------|----------|-----------|-----------|----------------|----------------|------------|
|                               |             |  | L              | T        | P         |           | Internal (CIE) | External (SEE) | Total      |
| 1.                            | ME411PC     | Solid Mechanics and Hydraulic Machines           | 3              | 1        | 0         | 4         | 40             | 60             | 100        |
| 2.                            | EE402PC     | Measurements and Instrumentation                 | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 3.                            | EE403PC     | Electrical Machines – II                         | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 4.                            | EC410PC     | Digital Electronics                              | 2              | 0        | 0         | 2         | 40             | 60             | 100        |
| 5.                            | EE404PC     | Power Systems – II                               | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 6.                            | EC411PC     | Digital Electronics Laboratory                   | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 7.                            | EE405PC     | Measurements and Instrumentation Laboratory      | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 8.                            | EE406PC     | Electrical Machines Laboratory - II              | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 9.                            | EE407PC     | Real Time Research Project / Field Based Project | 0              | 0        | 4         | 2         | 50             | -              | 50         |
| <b>Total</b>                  |             |  | <b>14</b>      | <b>1</b> | <b>10</b> | <b>20</b> | <b>370</b>     | <b>480</b>     | <b>850</b> |
| Mandatory Course (Non-Credit) |             |  |                |          |           |           |                |                |            |
| 10.                           | *CI409MC    | Constitution of India                            | 3              | 0        | 0         | 0         | 100            | -              | 100        |

\*MC–Satisfied/Unsatisfied

2. The following SMEC R22 regulation course structure of III -I to IV – II semesters were presented, discussed and approved. And the total credits for the programme were discussed, finalized and approved.

| <b>III B. Tech-I-Semester</b> |             |  |                |          |          |           |                |                |            |
|-------------------------------|-------------|--|----------------|----------|----------|-----------|----------------|----------------|------------|
| S. No.                        | Course Code | Course Title                                     | Hours Per Week |          |          | Credits   | Maximum Marks  |                |            |
|                               |             |  | L              | T        | P        |           | Internal (CIE) | External (SEE) | Total      |
| 1.                            |             | Power Electronics                                | 3              | 1        | 0        | 4         | 40             | 60             | 100        |
| 2.                            |             | Control Systems                                  | 3              | 1        | 0        | 4         | 40             | 60             | 100        |
| 3.                            |             | Microprocessors and Microcontrollers             | 3              | 0        | 0        | 3         | 40             | 60             | 100        |
| 4.                            |             | Professional Elective – I                        | 3              | 0        | 0        | 3         | 40             | 60             | 100        |
| 5.                            |             | Business Economics and Financial Analysis        | 3              | 0        | 0        | 3         | 40             | 60             | 100        |
| 6.                            |             | Microprocessors and Microcontrollers Laboratory  | 0              | 0        | 2        | 1         | 40             | 60             | 100        |
| 7.                            |             | Power Electronics Laboratory                     | 0              | 0        | 2        | 1         | 40             | 60             | 100        |
| 8.                            |             | Advanced English Communication Skills Laboratory | 0              | 0        | 2        | 1         | 40             | 60             | 100        |
| <b>Total</b>                  |             |  | <b>15</b>      | <b>2</b> | <b>6</b> | <b>20</b> | <b>320</b>     | <b>480</b>     | <b>800</b> |
| Mandatory Course (Non-Credit) |             |  |                |          |          |           |                |                |            |
| 9.                            |             | Intellectual Property Rights                     | 3              | 0        | 0        | 0         | 100            | -              | 100        |

\*MC–Satisfied/Unsatisfied

| <b>III B. Tech-II-Semester</b> |             |   |                |          |           |           |                |                |            |
|--------------------------------|-------------|---|----------------|----------|-----------|-----------|----------------|----------------|------------|
| S.No.                          | Course Code | Course Title                              | Hours Per Week |          |           | Credits   | Maximum Marks  |                |            |
|                                |             |   | L              | T        | P         |           | Internal (CIE) | External (SEE) | Total      |
| 1.                             |             | Open Elective – I                         | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 2.                             |             | Professional Elective – II                | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 3.                             |             | Signals and Systems                       | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 4.                             |             | Power System Protection                   | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 5.                             |             | Power System Operation and Control        | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 6.                             |             | Power System Laboratory                   | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 7.                             |             | Control Systems Laboratory                | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 8.                             |             | Digital Signal Processing Laboratory      | 0              | 0        | 2         | 1         | 40             | 60             | 100        |
| 9.                             |             | Industry Oriented Mini Project/Internship | 0              | 0        | 4         | 2         | -              | 100            | 100        |
| <b>Total</b>                   |             |   | <b>15</b>      | <b>0</b> | <b>10</b> | <b>20</b> | <b>320</b>     | <b>580</b>     | <b>900</b> |
| Mandatory Course (Non-Credit)  |             |   |                |          |           |           |                |                |            |
| 10.                            |             | Environmental Science                     | 3              | 0        | 0         | 0         | 100            | -              | 100        |

\*MC–Satisfied/Unsatisfied

**Environmental Science – Should be Registered by Lateral Entry Students Only.**

| <b>IV B. Tech-I-Semester</b> |             |   |                |          |           |           |                |                |            |
|------------------------------|-------------|---|----------------|----------|-----------|-----------|----------------|----------------|------------|
| S. No.                       | Course Code | Course Title  | Hours Per Week |          |           | Credits   | Maximum Marks  |                |            |
|                              |             |   | L              | T        | P         |           | Internal (CIE) | External (SEE) | Total      |
| 1.                           |             | Power Electronic Applications to Renewable Energy Systems | 3              | 1        | 0         | 4         | 40             | 60             | 100        |
| 2.                           |             | Open Elective – II  | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 3.                           |             | Professional Elective - III                               | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 4.                           |             | Professional Elective – IV                                | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 5.                           |             | Fundamentals of Management for Engineers                  | 2              | 0        | 0         | 2         | 40             | 60             | 100        |
| 6.                           |             | Simulation of Renewable Energy Systems Laboratory         | 0              | 0        | 4         | 2         | 40             | 60             | 100        |
| 7.                           |             | Project Stage - I   | 0              | 0        | 6         | 3         | -              | -              | -          |
| <b>Total</b>                 |             |   | <b>14</b>      | <b>1</b> | <b>10</b> | <b>20</b> | <b>240</b>     | <b>360</b>     | <b>600</b> |

| <b>IV B. Tech-II-Semester</b> |             |                                      |                |          |           |           |                |                |            |
|-------------------------------|-------------|--------------------------------------|----------------|----------|-----------|-----------|----------------|----------------|------------|
| S.No.                         | Course Code | Course Title                         | Hours Per Week |          |           | Credits   | MaximumMarks   |                |            |
|                               |             |                                      | L              | T        | P         |           | Internal (CIE) | External (SEE) | Total      |
| 1.                            |             | Open Elective – III                  | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 2.                            |             | Professional Elective – V            | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 3.                            |             | Professional Elective – VI           | 3              | 0        | 0         | 3         | 40             | 60             | 100        |
| 4.                            |             | Project Stage – II including Seminar | 0              | 0        | 22        | 9+2       | 40             | 60             | 100        |
| <b>Total</b>                  |             |                                      | <b>9</b>       | <b>0</b> | <b>22</b> | <b>20</b> | <b>160</b>     | <b>240</b>     | <b>400</b> |

**Professional Elective – I**

|    |  |
|----|--|
| 1. | IOT Applications in Electrical Engineering |
| 2. | High Voltage Engineering                   |
| 3. | Computer Aided Electrical Machine Design   |

**Professional Elective – II**

|    |                               |
|----|-------------------------------|
| 1. | Cyber Physical Systems        |
| 2. | Power Semiconductor Drives    |
| 3. | Wind and Solar Energy Systems |

**Professional Elective – III**

|    |                                |
|----|--------------------------------|
| 1. | Mobile Application Development |
| 2. | Digital Signal Processing      |
| 3. | Electric and Hybrid Vehicles   |

**Professional Elective – IV**

|    |                          |
|----|--------------------------|
| 1. | HVDC Transmission        |
| 2. | Power System Reliability |
| 3. | Embedded Applications    |

**Professional Elective – V**

|    |   |
|----|---|
| 1. | Power Quality and FACTS                 |
| 2. | Solar Power Batteries                   |
| 3. | AI Techniques in Electrical Engineering |

**Professional Elective – VI**

|    |   |
|----|---|
| 1. | Smart Grid Technologies                                 |
| 2. | Electrical Distribution Systems                         |
| 3. | Machine Learning Applications to Electrical Engineering |

Open Electives offered by Department of EEE are:

**Open Elective – I**

|    |                                 |
|----|---------------------------------|
| 1. | Renewable Energy Sources        |
| 2. | Fundamental of Electric Vehicle |

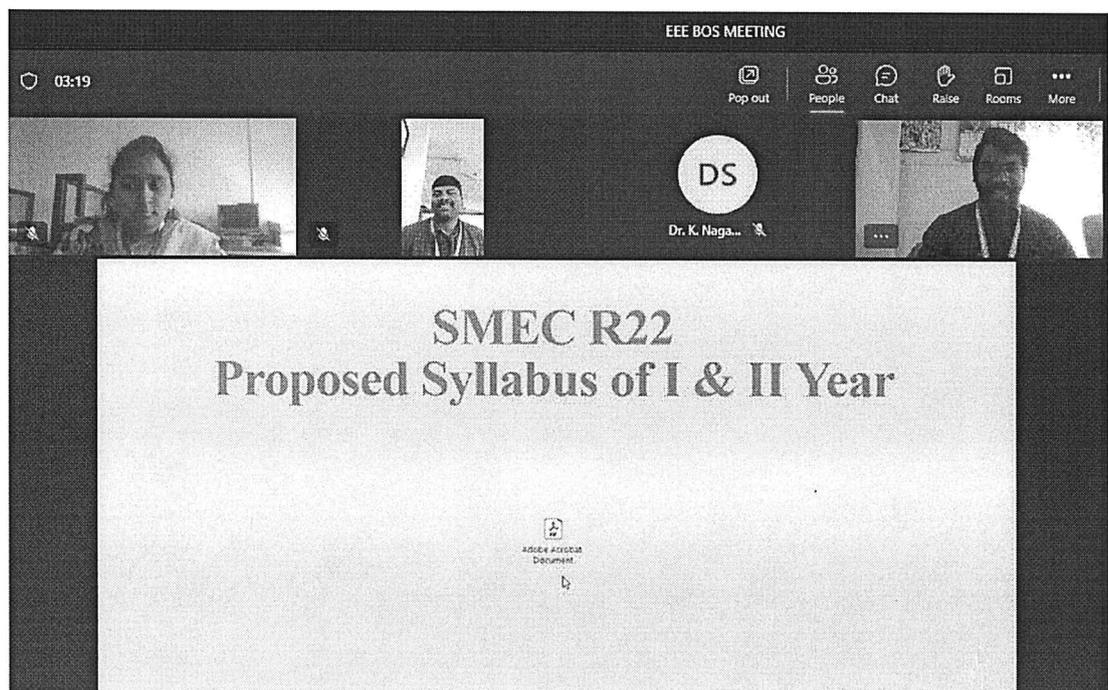
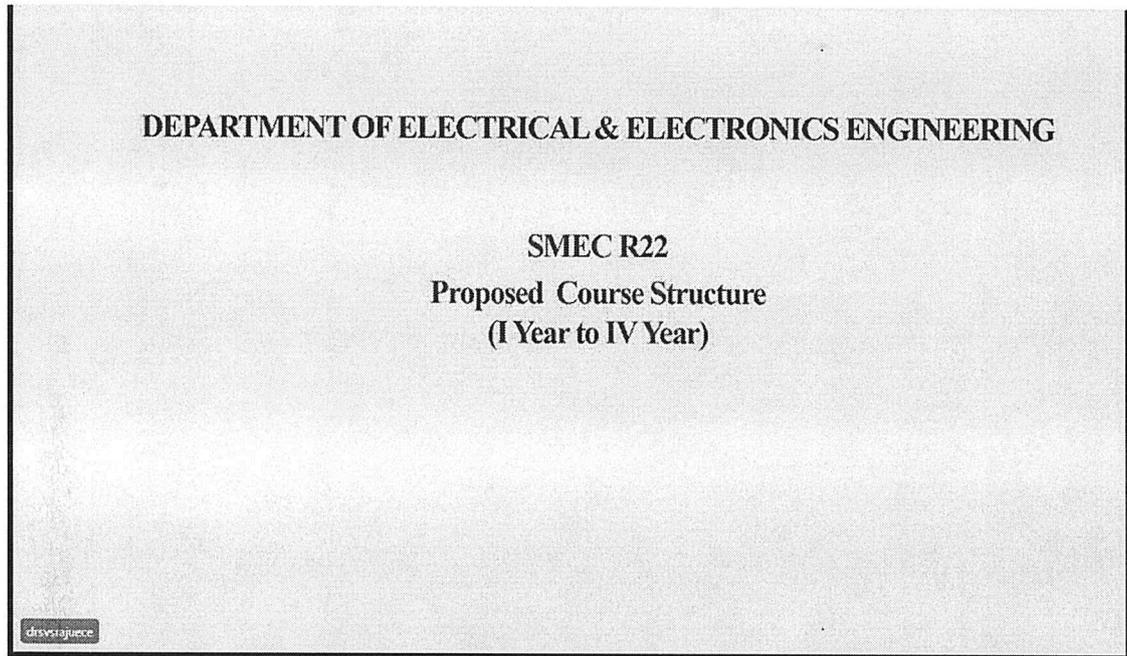
**Open Elective – II**

|    |                                |
|----|--------------------------------|
| 1. | Utilization of Electric Energy |
| 2. | Energy Storage Systems         |

### Open Elective – III

|    |   |
|----|---|
| 1. | Charging Infrastructure for Electric Vehicles |
| 2. | Reliability Engineering                       |

The meeting ended with chairman thanking members for their lively and useful interaction to evolve a best possible course structure and syllabus for the B. Tech. Electrical and Electronics Engineering program.



## II YEAR I SEMESTER COURSE STRUCTURE (SMEC R22)

| S.No                 | Course Code | SMEC SYLLABUS                           |              | JNTUH SYLLABUS                          |               |
|----------------------|-------------|---|--------------|---|---------------|
|                      |             | Course Title                            | SMEC Credits | Course Title                            | JNTUH Credits |
| 1.                   | MA301BS     | Numerical Methods and Complex Variables | 4            | Numerical Methods and Complex Variables | 4             |
| 2.                   | EE301PC     | Electrical Machines – I                 | 4            | Electrical Machines – I                 | 4             |
| 3.                   | EC308PC     | Analog Electronics                      | 3            | Analog Electronics                      | 3             |
| 4.                   | EE302PC     | Power Systems – I                       | 3            | Power Systems – I                       | 3             |
| 5.                   | EE303PC     | Electro Magnetic Fields                 | 3            | Electro Magnetic Fields                 | 3             |
| 6.                   | EE304PC     | Electrical Machines Laboratory – I      | 1            | Electrical Machines Laboratory – I      | 1             |
| 7.                   | EC309PC     | Analog Electronic Laboratory            | 1            | Analog Electronic Laboratory            | 1             |
| 8.                   | EE305PC     | Electrical Simulation Laboratory        | 1            | Electrical Simulation Laboratory        | 1             |
| 9.                   | *GS309MC    | Gender sensitization Lab                | 0            | Gender sensitization Lab                | 0             |
| <b>TOTAL CREDITS</b> |             |   | <b>20</b>    | <b>TOTAL CREDITS</b>                    | <b>20</b>     |

\*MC – Satisfied / Unsatisfied

Sujatha (Guest)

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**EEE BOS MEETING**

05:57

People Chat Raise Rooms More

Dr. K. Naga...

Dr. K. Naga Sujatha (Guest)

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**ELECTRICAL MACHINES - I**

| B.TECH I SEMESTER (R22) |          |            |   |   |         |               |     |       |
|-------------------------|----------|------------|---|---|---------|---------------|-----|-------|
| Course Code             | Category | Hours/Week |   |   | Credits | Maximum Marks |     |       |
|                         |          | L          | T | P |         | CIE           | SEE | Total |
|                         | B. Tech  | 3          | 1 | 0 | 4       | 40            | 60  | 100   |

**COURSE OBJECTIVES**

To learn

- To study and understand different types of DC machines and their performance evaluation through various testing methods.
- To understand the operation of single and poly-phase Transformers.
- To analyze the performance of transformers through various testing methods.

**UNIT-I DC GENERATORS** Classes:10

Principle of operation – Action of and wave windings – simplex

e windings – by nature – E.M.F.

Copy to:  
Principal, IQAC

*Ranbhadra*  
Chairman, BOS 110

