



**RCC Institute of Information Technology, Kolkata**  
(Autonomous from Academic Session: 2024 – 2025)

**Syllabus: B. Tech. in Electrical Engineering**

| <b>Third Semester</b>  |                     |                 |                                                  |               |   |   |           |
|------------------------|---------------------|-----------------|--------------------------------------------------|---------------|---|---|-----------|
| Sl. No.                | Category            | Course Code     | Course Name                                      | Contact Hours |   |   | Credits   |
|                        |                     |                 |                                                  | L             | T | P |           |
| 1                      | Professional Core   | RCC-PCC-EE-301  | Electric Circuit Theory                          | 3             | 1 | 0 | 4         |
| 2                      | Professional Core   | RCC-PCC-EE-302  | Analog Electronics                               | 3             | 0 | 0 | 3         |
| 3                      | Professional Core   | RCC-PCC-EE-303  | Electromagnetic Field theory                     | 3             | 0 | 0 | 3         |
| 4                      | Basic Science       | RCC- BSC-M-301  | Numerical Techniques                             | 3             | 0 | 0 | 3         |
| 5                      | Engineering Science | RCC-ESC-ME-301  | Thermal Power Engineering                        | 3             | 0 | 0 | 3         |
| 6                      | Audit/ Mandatory    | RCC-AU-381      | Environmental Science                            | 2             | 0 | 0 | 0         |
| 7                      | Professional Core   | RCC-PCL-EE-391  | Electric Circuit Theory Laboratory               | 0             | 0 | 2 | 1         |
| 8                      | Professional Core   | RCC-PCL-EE-392  | Analog Electronics laboratory                    | 0             | 0 | 2 | 1         |
| 9                      | Professional Core   | RCC-PCL-ME-391  | Thermal Power Engineering laboratory             | 0             | 0 | 2 | 1         |
| 10                     | Engineering Science | RCC-ESC-EE-381  | Design Thinking                                  | 0             | 0 | 4 | 2         |
| <b>Total</b>           |                     |                 |                                                  |               |   |   | <b>21</b> |
| <b>Fourth Semester</b> |                     |                 |                                                  |               |   |   |           |
| Sl. No.                | Category            | Course Code     | Course Name                                      | Contact Hours |   |   | Credits   |
|                        |                     |                 |                                                  | L             | T | P |           |
| 1                      | Professional Core   | RCC- PCC-EE-401 | Electric Machine-I                               | 3             | 0 | 0 | 3         |
| 2                      | Professional Core   | RCC- PCC-EE-402 | Digital Electronics                              | 3             | 0 | 0 | 3         |
| 3                      | Professional Core   | RCC- PCC-EE-403 | Electrical and Electronics Measurement           | 3             | 0 | 0 | 3         |
| 4                      | Professional Core   | RCC- PCC-EE-404 | Power Electronics                                | 3             | 0 | 0 | 3         |
| 5                      | Professional Core   | RCC- PCC-EE-405 | Signals and Systems                              | 3             | 0 | 0 | 3         |
| 6                      | Audit/ Mandatory    | RCC- AU-481     | Soft skills and Ethics                           | 2             | 0 | 0 | 0         |
| 7                      | Professional Core   | RCC- PCL-EE-491 | Electric Machine-I Laboratory                    | 0             | 0 | 2 | 1         |
| 8                      | Professional Core   | RCC- PCL-EE-492 | Digital Electronics Laboratory                   | 0             | 0 | 2 | 1         |
| 9                      | Professional Core   | RCC- PCL-EE-493 | Electrical and Electronic Measurement Laboratory | 0             | 0 | 2 | 1         |
| 10                     | Professional Core   | RCC- PCL-EE-494 | Power Electronics Laboratory                     | 0             |   | 2 |           |
| <b>Total</b>           |                     |                 |                                                  |               |   |   | <b>19</b> |



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| <b>Fifth Semester</b> |                             |                  |                                                                                                     |               |   |   |           |
|-----------------------|-----------------------------|------------------|-----------------------------------------------------------------------------------------------------|---------------|---|---|-----------|
| Sl. No.               | Category                    | Course Code      | Course Name                                                                                         | Contact Hours |   |   | Credits   |
|                       |                             |                  |                                                                                                     | L             | T | P |           |
| 1                     | Professional Core           | RCC- PCC-EE-501  | Electric Machine-II                                                                                 | 3             | 0 | 0 | 3         |
| 2                     | Professional Core           | RCC- PCC-EE-502  | Power System Performance                                                                            | 3             | 0 | 0 | 3         |
| 3                     | Professional Core           | RCC- PCC-EE-503  | Control System                                                                                      | 3             | 0 | 0 | 3         |
| 4                     | Professional Elective Core  | RCC- PEC-EE-501  | A. High Voltage Engineering<br>B. Power Plant Engineering<br>C. Renewable & Non-Conventional Energy | 3             | 0 | 0 | 3         |
| 5                     | Professional Elective Core  | RCC- PEC-EE-502  | A. Object Oriented Programming<br>B. Python Programming<br>C. Data Structures                       | 3             | 0 | 0 | 3         |
| 6                     | Professional Core           | RCC-PCL-EE-591   | Electric Machine-II laboratory                                                                      | 0             | 0 | 2 | 1         |
| 7                     | Professional Core           | RCC- PCL-EE-592  | Power System Lab I                                                                                  | 0             | 0 | 2 | 1         |
| 8                     | Professional Core           | RCC- PCL-EE-593  | Control system laboratory                                                                           | 0             | 0 | 2 | 1         |
| 9                     | Professional Elective       | RCC-PEL-EE-591   | A. Object Oriented Programming Lab<br>B. Python Programming Lab<br>C. Data Structures Lab           | 0             | 0 | 2 | 1         |
| 10                    | Project                     | RCC-PROJ-EC-581  | Project (Micro)                                                                                     |               |   | 4 | 2         |
| <b>Total</b>          |                             |                  |                                                                                                     |               |   |   | <b>21</b> |
| <b>Sixth Semester</b> |                             |                  |                                                                                                     |               |   |   |           |
| Sl. No.               | Category                    | Course Code      | Course Name                                                                                         | Contact Hours |   |   | Credits   |
|                       |                             |                  |                                                                                                     | L             | T | P |           |
| 1                     | Professional Core           | RCC- PCC-EE-601  | Power System Stability and Protection                                                               | 3             | 0 | 0 | 3         |
| 2                     | Professional Core           | RCC- PCC-EE-602  | Microprocessor & Microcontroller                                                                    | 3             | 0 | 0 | 3         |
| 3                     | Professional Elective Core  | RCC-PEC-EE-601   | A. Digital Control System<br>B. Advance Power Electronics<br>C. Electrical Machine Design           | 3             | 0 | 0 | 3         |
| 4                     | Professional Elective Core  | RCC- PEC-EE-602  | A. Electrical & Hybrid Vehicle<br>B. Power Quality & FACTS<br>C. Smart Card                         | 3             | 0 | 0 | 3         |
| 5                     | Open Elective Core          | RCC- OEC-EE-601  | A. Digital Signal Processing<br>B. VLSI & Microelectronics<br>C. Communication Engineering          | 3             | 0 | 0 | 3         |
| 6                     | Humanities & Social Science | RCC-HSMC-EE-601  | Economics for Engineers                                                                             | 3             | 0 | 0 | 3         |
| 7                     | Professional Core           | RCC- PCL-EE-691  | Power System Lab II                                                                                 | 0             | 0 | 2 | 1         |
| 8                     | Professional Core           | RCC- PCL-EE-692  | Microprocessor & Microcontroller Laboratory                                                         | 0             | 0 | 2 | 1         |
| 9                     | Professional Core           | RCC- PCL-EE-681  | Electrical & Electronic Design Laboratory                                                           | 0             | 0 | 2 | 1         |
| 10                    | Project                     | RCC- PROJ-EE-681 | Mini Project                                                                                        | 0             | 0 | 6 | 3         |
| <b>Total</b>          |                             |                  |                                                                                                     |               |   |   | <b>24</b> |



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| <b>Seventh Semester</b> |                             |                    |                                                                                                                    |                      |          |          |                |
|-------------------------|-----------------------------|--------------------|--------------------------------------------------------------------------------------------------------------------|----------------------|----------|----------|----------------|
| <b>Sl. No.</b>          | <b>Category</b>             | <b>Course Code</b> | <b>Course Name</b>                                                                                                 | <b>Contact Hours</b> |          |          | <b>Credits</b> |
|                         |                             |                    |                                                                                                                    | <b>L</b>             | <b>T</b> | <b>P</b> |                |
| 1                       | Professional Core           | RCC-PCC-EE-701     | Electric Drives                                                                                                    | 3                    | 0        | 0        | 3              |
| 2                       | Professional Elective Core  | RCC-PEC-EE-701     | A. Advance Control System<br>B. Power System Operation and Control<br>C. Electrical Energy Conservation & Auditing | 3                    | 0        | 0        | 3              |
| 3                       | Open Elective Core          | RCC-OEC-EE-701     | A. AI & ML<br>B. Internet of Things<br>C. Big Data                                                                 | 3                    | 0        | 0        | 3              |
| 4                       | Open Elective Core          | RCC-OEC-EE-702     | A. Digital Image Processing<br>B. Computer Network<br>C. Block Chain                                               | 3                    | 0        | 0        | 3              |
| 5                       | Humanities & Social Science | RCC-HSMC-EE-701    | Principles of Management                                                                                           | 3                    | 0        | 0        | 3              |
| 6                       | Professional Core           | RCC- PCC-EE-791    | Electric Drive Laboratory                                                                                          | 0                    | 0        | 2        | 1              |
| 7                       | Project                     | RCC- PROJ-EE-781   | Project stage-I                                                                                                    | 0                    | 0        | 16       | 8              |
| 8                       | Seminar                     | RCC-PROJ-EE-782    | Internship/Seminar/Training                                                                                        | 0                    | 0        | 0        | 1              |
| <b>Total</b>            |                             |                    |                                                                                                                    |                      |          |          | <b>25</b>      |
| <b>Eighth Semester</b>  |                             |                    |                                                                                                                    |                      |          |          |                |
| <b>Sl. No.</b>          | <b>Category</b>             | <b>Course Code</b> | <b>Course Name</b>                                                                                                 | <b>Contact Hours</b> |          |          | <b>Credits</b> |
|                         |                             |                    |                                                                                                                    | <b>L</b>             | <b>T</b> | <b>P</b> |                |
| 1                       | Professional Core           | RCC- PCC-EE-801    | Utilization of Electric Power                                                                                      | 3                    | 0        | 0        | 3              |
| 2                       | Professional Elective Core  | RCC-PEC-EE-801     | A. HVDC Transmission<br>B. Illumination Engineering<br>C. Industrial Automation and Control                        | 3                    | 0        | 0        | 3              |
| 3                       | Open Elective Core          | RCC-OEC-EE-801     | A. Introduction to Robotics<br>B. Sensors and Transducers<br>C. Biomedical Instrumentation                         | 3                    | 0        | 0        | 3              |
| 4                       | Project                     | RCC- PROJ-EE-881   | Project stage-II                                                                                                   | 0                    | 0        | 16       | 8              |
| 5                       | Viva - Voce                 | RCC-PCC-EE-882     | Comprehensive Viva-Voce                                                                                            | 0                    | 0        | 0        | 1              |
| <b>Total</b>            |                             |                    |                                                                                                                    |                      |          |          | <b>18</b>      |