# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

## Teaching & Examination Scheme
## B.Tech. : Electrical Engineering
## 2nd Year - III Semester

| SN | Category | Course | | Contact hrs/week | | | Marks | | | | Cr |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Code | Title | L | T | P | Exm Hrs | IA | ETE | Total | |
| **THEORY** | | | | | | | | | | | |
| 1 | BSC | 3EE2-01 | Advance Mathematics | 3 | 0 | 0 | 3 | 30 | 120 | **150** | **3** |
| 2 | HSMC | 3EE1-02/ 3EE1-03 | Technical Communication / Managerial Economics and Financial Accounting | 2 | 0 | 0 | 2 | 20 | 80 | **100** | **2** |
| 3 | ESC | 3EE3-04 | Power generation Process | 2 | 0 | 0 | 2 | 20 | 80 | **100** | **2** |
| 4 | PCC | 3EE4-05 | Electrical Circuit Analysis | 3 | 0 | 0 | 3 | 30 | 120 | **150** | **3** |
| 5 | | 3EE4-06 | Analog Electronics | 3 | 0 | 0 | 3 | 30 | 120 | **150** | **3** |
| 6 | | 3EE4-07 | Electrical Machine - I | 3 | 0 | 0 | 3 | 30 | 120 | **150** | **3** |
| 7 | | 3EE4-08 | Electromagnetic Field | 2 | 0 | 0 | 2 | 20 | 80 | **100** | **2** |
| | | | **Sub Total** | 18 | 0 | 0 | | 180 | 720 | **900** | **18** |
| **PRACTICAL & SESSIONAL** | | | | | | | | | | | |
| 8 | PCC | 3EE4-21 | Analog Electronics Lab | 0 | 0 | 2 | | 30 | 20 | **50** | **1** |
| 9 | | 3EE4-22 | Electrical Machine-I Lab | 0 | 0 | 4 | | 60 | 40 | **100** | **2** |
| 10 | | 3EE4-23 | Electrical circuit design Lab | 0 | 0 | 4 | | 60 | 40 | **100** | **2** |
| 13 | PSIT | 3EE7-30 | Industrial Training | 0 | 0 | 2 | | | | **50** | **1** |
| 14 | SODECA | 3EE8-00 | Social Outreach, Discipline & Extra Curricular Activities | | | | | | | **25** | **0.5** |
| | | | **Sub- Total** | 0 | 0 | 12 | | 150 | 100 | **325** | **6.5** |
| | | | **TOTAL OF III SEMESTER** | 18 | 0 | 12 | | 330 | 820 | **1225** | **24.5** |

***L:*** *Lecture,* ***T:*** *Tutorial,* ***P:*** *Practical,* ***Cr:*** *Credits*

***ETE:*** *End Term Exam,* ***IA:*** *Internal Assessment*

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

**SYLLABUS**

**2nd Year - III Semester: B.Tech. (Electrical Engineering)**

## 3EE2-01: Advance Mathematics

**Credit: 3** **Max. Marks: 150 (IA:30, ETE:120)**

**3L+0T+0P** **End Term Exam: 3 Hours**

| SN | CONTENTS | Hours |
|---|---|---|
| 1 | **Numerical Methods:**<br>Finite differences, Relation between operators, Interpolation using Newton's forward and backward difference formulae. Gauss's forward and backward interpolation formulae. Stirling's Formulae. Interpolation with unequal intervals: Newton's divided difference and Lagrange'sformulae.<br>Numerical Differentiation, Numerical integration: Trapezoidal rule and Simpson's 1/3rd and 3/8 rules.<br>Solution of polynomial and transcendental equations-Bisection method, Newton-Raphson method and Regula-Falsi method. | **14** |
| 2 | **Transform Calculus:**<br>Laplace Transform: Definition and existence of Laplace transform, Properties of Laplace Transform and formulae, Unit Step function, Dirac Delta function, Heaviside function, Laplace transform of periodic functions. Finding inverse Laplace transform by different methods, convolution theorem.<br>Fourier Transform: Fourier Complex, Sine and Cosine transform, properties and formulae, inverse Fourier transforms, Convolution theorem.<br>Z-Transform: Definition, properties and formulae, Convolution theorem, inverse Z-transform, application of Z-transform to difference equation. | **20** |
| 3 | **Complex Variable:**<br>Differentiation, Cauchy-Riemann equations, analytic functions, harmonic functions, finding harmonic conjugate; elementary analytic functions (exponential, trigonometric, logarithm) and their properties; Conformal mappings, Mobius transformations and their properties. | **06** |
| | **TOTAL** | **40** |

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