RAJASTHAN TECHNICAL UNIVERSITY, KOTA

Teaching & Examination Scheme
B.Tech. : Electronics & Communication Engineering
2nd Year - IV Semester

SN	Category	Course		Contact hrs/week			Marks				Cr
		Code	Title	L	T	P	Exm Hrs	IA	ETE	Total	
			THEORY								
1	BSC	4EC2-01	Advanced Engineering Mathematics-II	3	0	0	3	30	120	**150**	**3**
2	HSMC	4EC1-03/ 4EC1-02	Managerial Economics and Financial Accounting/ Technical Communication	2	0	0	2	20	80	**100**	**2**
3	PCC	4EC4-04	Analog Circuits	3	0	0	3	30	120	**150**	**3**
4		4EC4-05	Microcontrollers	3	0	0	3	30	120	**150**	**3**
5	ESC	4EC3-06	Electronics Measurement & Instrumentation	3	0	0	3	30	120	**150**	**3**
6	PCC	4EC4-07	Analog and Digital Communication	3	0	0	3	30	120	**150**	**3**
			Sub Total	17	0	0		170	680	**850**	**17**
			PRACTICAL & SESSIONAL								
8	PCC	4EC4-21	Analog and Digital Communication Lab	0	0	3		45	30	**75**	**1.5**
9		4EC4-22	Analog Circuits Lab	0	0	3		45	30	**75**	**1.5**
10		4EC4-23	Microcontrollers Lab	0	0	3		45	30	**75**	**1.5**
11		4EC4-24	Electronics Measurement & Instrumentation Lab	0	0	3		45	30	**75**	**1.5**
12	SODE CA	4EC18-00	Social Outreach, Discipline & Extra Curricular Activities							**25**	**0.5**
			Sub- Total	0	0	12		180	120	**325**	**6.5**
		TOTAL OF IV SEMEESTER		17	0	12		350	800	**1175**	**23.5**

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

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

Office of Dean Academic Affairs
Rajasthan Technical University, Kota

4EC2-01: Advance Engineering Mathematics-II

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

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

SN	Contents	Hours
1	**Introduction:** Objective, scope and outcome of the course.	1
2	**Complex Variable – Differentiation:** 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.	7
3	**Complex Variable - Integration:** Contour integrals, Cauchy-Goursat theorem (without proof), Cauchy Integral formula (without proof), Liouville's theorem and Maximum-Modulus theorem (without proof); Taylor's series, zeros of analytic functions, singularities, Laurent's series; Residues, Cauchy Residue theorem (without proof).	8
4	**Applications of complex integration by residues:** Evaluation of definite integral involving sine and cosine. Evaluation of certain improper integrals.	4
5	**Special Functions:** Legendre's function, Rodrigues formula, generating function, Simple recurrence relations, orthogonal property. Bessel's functions of first and second kind, generating function, simple recurrence relations, orthogonal property.	10
6	**Linear Algebra:** Vector Spaces, subspaces, Linear independence, basis and dimension, Inner product spaces, Orthogonality, Gram Schmidt orthogonalization, characteristic polynomial, minimal polynomial, positive definite matrices and canonical forms, QR decomposition.	10
	Total	**40**

Office of Dean Academic Affairs
Rajasthan Technical University, Kota