



# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

## Teaching & Examination Scheme B.Tech. : Information Technology 2<sup>nd</sup> Year - III Semester

THEORY											
SN	Categ ory	Course		Contact hrs/week			Marks				Cr
		Code	Title				Exm Hrs	IA	ETE	Total	
				L	T	P					
1	BSC	3IT2-01	Advanced Engineering Mathematics	3	0	0	3	30	120	150	3
2	HSMC	3IT1-02/ 3IT1-03	Technical Communication/ Managerial Economics and Financial Accounting	2	0	0	2	20	80	100	2
3	ESC	3IT3-04	Digital Electronics	3	0	0	3	30	120	150	3
4	PCC	3IT4-05	Data Structures and Algorithms	3	0	0	3	30	120	150	3
5		3IT4-06	Object Oriented Programming	3	0	0	3	30	120	150	3
6		3IT4-07	Software Engineering	3	0	0	3	30	120	150	3
			Sub Total	17	0	0		170	680	850	17
PRACTICAL & SESSIONAL											
8	PCC	3IT4-21	Data Structures and Algorithms Lab	0	0	3		45	30	75	1.5
9		3IT4-22	Object Oriented Programming Lab	0	0	3		45	30	75	1.5
10		3IT4-23	Software Engineering Lab	0	0	3		45	30	75	1.5
11		3IT4-24	Digital Electronics Lab	0	0	3		45	30	75	1.5
13	PSIT	3IT7-30	Industrial Training	0	0	1		0	0	50	1
14	SODE CA	3IT8-00	Social Outreach, Discipline & Extra Curricular Activities	0	0	0		0	0	25	0.5
			Sub- Total	0	0	13		180	120	375	7.5
		TOTAL OF III SEMESTER		17	0	13		350	800	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



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## SYLLABUS

II Year- III Semester: B.Tech. (Information Technology)

### 3IT2-01: Advanced Engineering Mathematics

**Credit- 3**  
**3L+0T+0P**

**Max. Marks : 150 (IA:30,ETE:120)**  
**End Term Exam: 03 Hours**

SN	CONTENTS	Hours
1	<b>Random Variables:</b> Discrete and Continuous random variables, Joint distribution, Probability distribution function, conditional distribution. Mathematical Expectations: Moments, Moment Generating Functions, variance and correlation coefficients, Chebyshev's Inequality, Skewness and Kurtosis.	7
2	<b>Binomial distribution</b> , Normal Distribution, Poisson Distribution and their relations, Uniform Distribution, Exponential Distribution. Correlation: Karl Pearson's coefficient, Rank correlation. Curve fitting. Line of Regression.	5
3	<b>Historical development</b> , Engineering Applications of Optimization, Formulation of Design Problems as a Mathematical Programming Problems, Classification of Optimization Problems	8
4	<b>Classical Optimization using Differential Calculus:</b> Single Variable and Multivariable Optimization with & without Constraints, Langrangian theory, Kuhn Tucker conditions	6
5	<b>Linear Programming:</b> Simplex method, Two Phase Method and Duality in Linear Programming. Application of Linear Programming: Transportation and Assignment Problems.	14
<b>TOTAL</b>		<b>40</b>