



# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

## Teaching and Examination Scheme I Semester: B. Tech Common to all branches of UG Engineering & Technology

SN	Category	Course Code	Course Title	Hours			Marks			Cr
				L	T	P	IA	ETE	Total	
1	BSC	1FY2-01	Engineering Mathematics-I	3	1	-	30	70	100	4
2	BSC	1FY2-02/ 1FY2-03	Engineering Physics/ Engineering Chemistry	3	1	-	30	70	100	4
3	HSMC	1FY1-04/ 1FY1-05	Communication Skills/ Human Values	2	-	-	30	70	100	2
4	ESC	1FY3-06/ 1FY3-07	Programming for Problem Solving/ Basic Mechanical Engineering	2	-	-	30	70	100	2
5	ESC	1FY3-08/ 1FY3-09	Basic Electrical Engineering/ Basic Civil Engineering	2	-	-	30	70	100	2
6	BSC	1FY2-20/ 1FY2-21	Engineering Physics Lab/ Engineering Chemistry Lab	-	-	2	60	40	100	1
7	HSMC	1FY1-22/ 1FY1-23	Language Lab/ Human Values Activities and Sports	-	-	2	60	40	100	1
8	ESC	1FY3-24/ 1FY3-25	Computer Programming Lab/ Manufacturing Practices Workshop	-	-	3	60	40	100	1.5
9	ESC	1FY3-26/ 1FY3-27	Basic Electrical Engineering Lab/ Basic Civil Engineering Lab	-	-	2	60	40	100	1
10	ESC	1FY3-28/ 1FY3-29	Computer Aided Engineering Graphics/ Computer Aided Machine Drawing	-	-	3	60	40	100	1.5
11	Foundation Course	1FY8-0X	NCC/NSS/Sports			1			100	0.5
<b>Total</b>									<b>20.5</b>	

**L** : Lecture, **T** : Tutorial,

**P** : Practical, **IA** : Internal Assessment

**ETE**: End Term Exam, **Cr**: Credits



# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

## Teaching and Examination Scheme II Semester: B.Tech.

### Common to all branches of UG Engineering & Technology

SN	Category	Course Code	Course Title	Hours			Marks			Cr
				L	T	P	IA	ETE	Total	
1	BSC	2FY2-01	Engineering Mathematics-II	3	1	-	30	70	100	4
2	BSC	2FY2-03/ 2FY2-02	Engineering Chemistry/ Engineering Physics	3	1	-	30	70	100	4
3	HSMC	2FY1-05/ 2FY1-04	Human Values/ Communication Skills	2	-	-	30	70	100	2
4	ESC	2FY3-07/ 2FY3-06	Basic Mechanical Engineering/ Programming for Problem Solving	2	-	-	30	70	100	2
5	ESC	2FY3-09/ 2FY3-08	Basic Civil Engineering/ Basic Electrical Engineering	2	-	-	30	70	100	2
6	BSC	2FY2-21/ 2FY2-20	Engineering Chemistry Lab/ Engineering Physics Lab	-	-	2	60	40	100	1
7	HSMC	2FY1-23/ 2FY1-22	Human Values Activities and Sports/ Language Lab	-	-	2	60	40	100	1
8	ESC	2FY3-25/ 2FY3-24	Manufacturing Practices Workshop/ Computer Programming Lab	-	-	3	60	40	100	1.5
9	ESC	2FY3-27/ 2FY3-26	Basic Civil Engineering Lab/ Basic Electrical Engineering Lab	-	-	2	60	40	100	1
10	ESC	2FY3-29/ 2FY3-28	Computer Aided Machine Drawing/ Computer Aided Engineering Graphics	-	-	3	60	40	100	1.5
11	Foundation Course	1FY8-0X	NCC/NSS/Sports						100	0.5
<b>Total</b>									<b>20.5</b>	

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# RAJASTHAN TECHNICAL UNIVERSITY, KOTA

## SYLLABUS

### I Semester

#### Common to all branches of UG Engineering & Technology

#### 1FY2-01: Engineering Mathematics-I

SN	CONTENTS
1	<b>Calculus:</b> Improper integrals (Beta and Gamma functions) and their properties; Applications of definite integrals to evaluate surface areas and volumes of revolutions.
2	<b>Sequences and Series:</b> Convergence of sequence and series, tests for convergence; Power series, Taylor's series, series for exponential, trigonometric and logarithm functions.
3	<b>Fourier Series:</b> Periodic functions, Fourier series, Euler's formula, Change of intervals, Half range sine and cosine series, Parseval's theorem.
4	<b>Multivariable Calculus (Differentiation):</b> Limit, continuity and partial derivatives, directional derivatives, total derivative; Tangent plane and normal line; Maxima, minima and saddle points; Method of Lagrange multipliers; Gradient, curl and divergence.
5	<b>Multivariable Calculus (Integration):</b> Multiple Integration: Double integrals (Cartesian), change of order of integration in double integrals, Change of variables (Cartesian to polar), Applications: areas and volumes, Centre of mass and Gravity (constant and variable densities); Triple integrals (Cartesian), Simple applications involving cubes, sphere and rectangular parallelepipeds; Scalar line integrals, vector line integrals, scalar surface integrals, vector surface integrals, Theorems of Green, Gauss and Stokes.