

Department of Mathematics

B.Sc. (Hons.) Mathematics Curriculum

(Applicable to the students admitted from AY: 2023 onwards)



School of Engineering and Sciences

SRM University AP, Andhra Pradesh

ABBREVIATIONS

AEC	Ability Enhancement Courses
VAC	Value Added Courses
SEC	Skill Enhancement Courses
FIC	Foundation & Interdisciplinary Courses
OE	Open Elective
RDIP	Research / Design / Industrial Practice / Project / Thesis / Internship
CE	Core Elective
CC	Core Course
SE	Stream Elective
TE	Technical Elective

SEMESTER - I							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	AEC	U AEC	Art of Listening, Speaking and Reading Skills	1	0	1	2
2	VAC	U VAC	Environmental Science	2	0	0	2
3	SEC	S SEC	Analytical Reasoning and Aptitude Skills	1	1	1	3
4	FIC	S FIC	Chemical Basis of Life	3	0	0	3
5	FIC	S FIC	Mathematics for the Physical World	3	0	0	3
6	FIC	S FIC	Fundamentals of Computing	2	0	1	3
7	FIC	S FIC	Emerging Technologies	2	0	0	2
Semester Total				14	1	3	18

SEMESTER - II							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	AEC	U AEC	Effective Writing and Presentation Skills	1	0	1	2
2	VAC	U VAC	Universal Human Values and Ethics	2	0	0	2
3	SEC	S SEC	Entrepreneurial Mindset	2	0	0	2
4	FIC	S FIC	Principles of Management	3	0	0	3
5	FIC	S FIC	Psychology for Everyday Living	3	0	0	3
6	CC	Core	Real analysis - I	4	0	0	4
7	CC	Core	Linear Algebra	4	0	0	4
Semester Total				19	0	1	20

SEMESTER - III							
S. No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	AEC	S AEC	Problem Solving Skills	1	0	1	2
2	VAC	U VAC	Co-Curricular Activities	0	0	2	2*
3	VAC	U VAC	Community Service and Social Responsibility	2	0	0	2*
4	SEC	D SEC	Digital literacy	2	0	0	2
5	Core	CC	Algebra - I	4	0	0	4
6	Core	CC	Discrete Mathematics and Combinatorics	4	0	0	4
7	Core	CC	Real Analysis – II	4	0	0	4
8	Core	CC	Ordinary Differential Equations - I	4	0	0	4
9	Elective	OE	Open Elective	3	0	0	3
Semester Total				22	0	1	23

SEMESTER - IV							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	AEC	S AEC	Creativity and Critical Thinking Skills	1	0	1	2
2	VAC	U VAC	Co-curricular Activities	0	0	2	2*
3	SEC	D SEC	Mathematical Modelling for Physical Data	2	0	0	2
4	Core	CC	Complex Analysis	3	1	0	4
5	Core	CC	Probability and Statistics	3	1	0	4
6	Core	CC	General Topology	3	1	0	4
7	Elective	OE	Open Elective	3	0	0	3
Semester Total				15	3	1	19

SEMESTER - V							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	VAC	U VAC	Co-Curricular Activities	0	0	2	2*
2	VAC	U VAC	Community Service and Social Responsibility	0	0	2	2*
3	SEC	E SEC	Career Skill - I	3	0	0	3
4	Core	CC	Real Analysis - III	3	1	0	4
5	Core	CC	Partial Differential Equations - I	3	1	0	4
6	Core	CC	Numerical Analysis	3	1	0	4
7	Core	CC	Number Theory and Introduction to Cryptography	3	1	0	4
8	Elective	OE	Open Elective	3	0	0	3
Semester Total				18	4	0	22

SEMESTER - VI							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	VAC	U VAC	Co-Curricular Activities	0	0	2	2
2	VAC	U VAC	Community Service and Social Responsibility	0	0	2	2
3	SEC	E SEC	Career Skill - II	2	0	1	3
4	Elective	SE	Specialization Elective	3	1	0	4
5	Elective	SE	Specialization Elective	3	1	0	4
6	Elective	SE	Specialization Elective	3	1	0	4
7	Elective	SE	Specialization Elective	3	1	0	4
8	Elective	OE	Open Elective / Minor	3	0	0	3
Semester Total				17	4	5	26

S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Elective	SE	Specialization Elective	3	1	0	4
2	Elective	SE	Specialization Elective	3	1	0	4
3	Elective	SE	Specialization Elective	3	1	0	4
4	RDIP	RDIP	Internship	0	0	5	5
5	Elective	OE	Open Elective / Minor	3	0	0	3
Semester Total				12	3	5	20

SEMESTER - VIII							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	RDIP	RDIP	Research Project	0	0	12	12
Semester Total				0	0	12	12

Specialization : Pure Mathematics							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Elective	CE	Measure Theory	3	1	0	4
2	Elective	CE	Advanced Linear Algebra	3	1	0	4
3	Elective	CE	Algebra - II	3	1	0	4
4	Elective	CE	Functional Analysis	3	1	0	4
5	Elective	CE	Algebraic Topology	3	1	0	4
6	Elective	CE	Algebra - III	3	1	0	4
7	Elective	CE	Operator Theory	3	1	0	4

Specialization: Applied Mathematics							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Elective	SE	Measure Theory	3	1	0	4
2	Elective	SE	Optimization techniques	3	1	0	4
3	Elective	SE	Mechanics and Tensor Calculus	3	1	0	4
4	Elective	SE	Ordinary Differential Equations - II	3	1	0	4
5	Elective	SE	Partial Differential Equation - II	3	1	0	4
6	Elective	SE	Dynamical Systems	3	1	0	4
7	Elective	SE	Functional Analysis	3	1	0	4

Specialization: Data Science and Industrial Mathematics							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Elective	SE	Data Structures and Algorithms	3	1	0	4
2	Elective	SE	Applied Statistics	3	1	0	4
3	Elective	SE	Applied Linear Algebra	3	1	0	4
4	Elective	SE	Financial Mathematics	3	1	0	4
5	Elective	SE	Regression analysis	3	1	0	4
6	Elective	SE	Stochastic process and Stochastic Differential Equations	3	1	0	4
7	Elective	SE	Mathematics for Machine learning	3	1	0	4

Minor : Mathematics							
S. No	Category	Sub-Category	Course Title	L	T/D	P/Pr	C
1	Elective	OE	Cryptography	3	0	0	3
2	Elective	OE	Numerical analysis	3	0	0	3
3	Elective	OE	Advanced Linear Algebra	3	0	0	3
4	Elective	OE	Elementary Number Theory	3	0	0	3
5	Elective	OE	Introduction to Partial Differential Equations: Theory and Computation	3	0	0	3

Minor : Statistics							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	Elective	OE	Descriptive Statistics	3	0	0	3
2	Elective	OE	Statistical inference	3	0	0	3
3	Elective	OE	Limit theorems and introduction to Stochastic process	3	0	0	3
4	Elective	OE	Applied Regression Analysis	3	0	0	3
5	Elective	OE	Generating functions and multivariate functions	3	0	0	3

Career Skills							
S. No	Category	Sub- Category	Course Title	L	T/D	P/Pr	C
1	SEC	E SEC	Linear Programming Problem	3	0	0	3
2	SEC	D SEC	Introduction to R and Python	3	0	0	3
3	SEC	D SEC	MATLAB, Sage and Mathematica	3	0	0	3