

Enclosure –VIII

**Shree Manibhai Virani & Smt. Navalben Virani Science College, Rajkot
(Autonomous)**

Affiliated to Saurashtra University, Rajkot.

**Department of Mathematics
M.Sc. Mathematics**

Scheme of Instruction and Examinations under OBE

FOR STUDENTS ADMITTED FROM A.Y. 2019-2020 & ONWARDS

Semester – I

Course Code	Course	Hrs of Inst/ week				Exam Duration (Hrs)	Max Marks			Credit
		Th.	Pr.	Tu.	Total		CIA	SEE	Total	
Part –I Core Courses (CC)										
Core (Theory)										
19PMTCC101	Core 1: Group and Ring Theory	4	-	-	4	3	40	60	100	4
19PMTCC102	Core 2: Topology	3	-	2	5	3	40	60	100	4
19PMTCC103	Core 3: Functions of Several Variables	3	-	2	5	3	40	60	100	4
19PMTCC104	Core 4: Theory of Differential Equations	3	-	2	5	3	40	60	100	4
Discipline Specific Elective -Interdisciplinary (DSE-ID) –I										
19PMTID101/ 19PMTID102	Fundamentals of Classical Mechanics / Industrial Environment Management	4	-	-	4	2	50	50	100	4
Core (Practical)										
19PMTCC105	Core Practical 1: Numerical Methods using Scilab	-	6	-	6	3	60	40	100	2
		29						600		22
Part II: Life Skill Courses										
-	Value Education for Consciousness Development	1	-	-	1	-	Remarks at the end of Sem – II			-
-	CEC-I: Online*/Professional certification course** (from choices approved by AC) STC	-	-	-	-	-	-			-
Total		30						600		22

Semester – II										
Course Code	Course	Hrs of Inst/ week				Exam Duration (Hrs)	Max Marks			Credit
		Th.	Pr.	Tu.	Total		CIA	SEE	Total	
Part –I Core Courses (CC)										
Core (Theory)										
19PMTCC201	Core 5: Advanced Ring Theory and Field Extensions	4	-	-	4	3	40	60	100	4
19PMTCC202	Core 6: Real Analysis and Measure Theory	3	-	2	5	3	40	60	100	4
19PMTCC203	Core 7: Theory of Partial Differential Equations	3	-	2	5	3	40	60	100	4
19PMTCC204	Core 8: Advanced Classical Mechanics	3	-	2	5	3	40	60	100	4
Discipline Specific Elective -Interdisciplinary (DSE-ID) – II										
19PMTID201/ 19PMTID202	Data Analysis & Representation using Computer Tools / Statistical Methods	4	-	-	4	2	50	50	100	4
Core (Practical)										
19PMTCC205	Core Practical 2: Introduction to Latex	-	6	-	6	3	60	40	100	2
					29				600	22
Part II: Life Skill Courses										
19LSVE201	Value Education for Consciousness Development	1	-	-	1	-	Remarks			2
Total					30				600	24

Semester – III

Course Code	Course	Hrs of Inst/ week				Exam Duration (Hrs)	Max Marks			Credit
		Th.	Pr.	Tu.	Total		CIA	SEE	Total	
Part –I Core Courses (CC)										
Core (Theory)										
19PMTCC301	Core 9: Complex Analysis	3	-	2	5	3	40	60	100	4
19PMTCC302	Core 10: Discrete Mathematics	3	-	2	5	3	40	60	100	4
19PMTCC303	Core 11: Advanced Topics in Linear Algebra	3	-	2	5	3	40	60	100	4
19PMTCC304	Core 12: Self-Study Course: Optimization Techniques.	1	-	-	1	3	40	60	100	4
-	Mini Project	-	-	8	8	-	-	-	-	2*
Discipline Specific Elective -Core (DSE-Core) - I										
19PMTDC301/ 19PMTDC302	Financial Mathematics / Quantitative Foundations of Bioinformatics	4	-	-	4	2	50	50	100	4
Generic Elective (GE) #										
19PMTGE301	Research Tool: Introduction to Latex	2	-	-	2	3	60	40	100	2
					30				600	22
Part – II : Competency Enhancement Courses (CEC)										
19PMTCE301	CEC-I: Online**/Professional certification course*** (from choices approved by AC) STC	-	-	-	-	-				2
Total					30				600	24

* For students who may Exit after SEM-3

** Course relevant to Mathematics (MOOC./NPTEL/SWAYAM etc.)

*** Professional Certificate Courses (NET/SLET/GATE/CCNA/CISCO etc.)

GE: offered by the department of mathematics.

Semester – IV

Course Code	Course	Hrs of Inst/ week				Exam Duration (Hrs)	Max Marks			Credit
		Th.	Pr.	Tu.	Total		CIA	SEE	Total	
Part –I Core Courses (CC)										
Core (Theory)										
19PMTCC401	Core13: Advanced Topics in Number Theory	3	-	2	5	3	40	60	100	4
19PMTCC402	Core 14: Functional Analysis	3	-	2	5	3	40	60	100	4
19PMTCC403	Core 15: Graph Theory	3	-	2	5	3	40	60	100	4
19PMTCC404	Core 16: Differential Geometry	4	-	-	4	3	40	60	100	4
19PMTCC405	Mini Project	-	-	7	7	-	90	60	150	4
Discipline Specific Elective -Core (DSE-Core)- II										
19PMTDC401/ 19PMTDC402	Mathematical Statistics / Mathematical Methods	4	-	-	4	2	60	40	100	4
					30				650	24
Part – II : Competency Enhancement Courses (CEC)										
19PMTCE401	Writing Summary of a Research Paper	-	-	-	-	-	-	-	150	2
Total						30			800	26
TOTAL OF ALL SEMESTERS									2600	96

TOTAL MARKS AND CREDIT DISTRIBUTION

S. No	PART	Total Marks	Total Credits
1.	PART I: Core, Discipline Specific Elective Courses, Self-study, GE.	2600	90
2.	PART II :		
	Competency Enhancement Courses	Remarks	4
	Life Skill Courses : Value Education for Consciousness Development	Remarks	2
TOTAL		2600	96

- **Part- I: CORE, DSE CORE**

CORE COURSES (Theory)

S. No	Semester	Course Code	Course
1.	I	19PMTCC101	Group and Ring Theory
2.		19PMTCC102	Topology
3.		19PMTCC103	Functions of Several Variables
4.		19PMTCC104	Theory of Differential Equations
5.	II	19PMTCC201	Advanced Ring Theory and Field Extensions
6.		19PMTCC202	Real Analysis and Measure Theory
7.		19PMTCC203	Theory of Partial Differential Equations
8.		19PMTCC204	Advanced Classical Mechanics
9.	III	19PMTCC301	Complex Analysis
10.		19PMTCC302	Discrete Mathematics
11.		19PMTCC303	Advanced Topics in Linear Algebra
12.		19PMTCC304	Self Study Course: Optimization Techniques
13.	IV	19PMTCC401	Advanced Topics in Number Theory
14.		19PMTCC402	Functional Analysis
15.		19PMTCC403	Graph Theory
16.		19PMTCC404	Differential Geometry

CORE COURSES (Practical)

S. No	Semester	Course Code	Course
1.	I	19PMTCC105	Numerical Methods using Scilab
2.	II	19PMTCC205	Introduction to Latex

- OTHER CORE COURSES**

S. No.	Semester	Course Code	Course
1.	V & VI	19PMTCC405	Mini Project

- DSE Interdisciplinary / Core Interdisciplinary COURSE (Theory & Practical)**

Students are required to opt for any one of the courses offered in each semester respectively.

S. No	Semester	Theory	
		Course Code	Course
1.	I	19PMTID101	Fundamentals of Classical Mechanics
		19PMTID102	Industrial Environment Management
2.	II	19PMTID201	Data Analysis & Representation using Computer Tools
		19PMTID202	Statistical Methods
3	III	19PMTDC301	Financial Mathematics
		19PMTDC302	Quantitative Foundations of Bioinformatics
4.	IV	19PMTDC401	Mathematical Statistics
		19PMTDC402	Mathematical Methods

- Part- II**

- a) COMPETENCY ENHANCEMENT COURSES**

S. No	Semester	Course Code	Course
1.	III	19PMTCE301	Online/Professional certification course (from choices approved by AC) STC
2.	IV	19PMTCE401	Writing Summary of a Research Paper

b) LIFE SKILL COURSES

S. No	Semester	Course Code	Course
1.	I	-	Value Education for Consciousness Development
2.	II	19LSVE201	Value Education for Consciousness Development

Generic Elective Courses offered by the department

S. No	Semester	Course Code	Course
1.	III	19PMTGE401	Research Tool: Introduction to Latex