



AKAL UNIVERSITY

TALWANDI SABO

(Estb. under Punjab State Act No. 25 of 2015)

**FACULTY OF MATHEMATICS AND COMPUTATIONAL
SCIENCE**

DEPARTMENT OF MATHEMATICS

Syllabi Scheme

For

Bachelor of Science in Mathematics (Hons.)

2019-22

COURSES OF READING FOR BACHELOR OF SCIENCE IN MATHEMATICS (HONS) EXAMINATION, 2019 – 22
SEMESTER: I
SCHEME OF TEACHING & EXAMINATION

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE		SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS				
				LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION	
								THEORY	PRACTICAL		THEORY	THEORY
Core	MTM05C101	Calculus (P)		4	-	4	6	20	20	20	60	30
Core	MTM05C102	Basic Linear Algebra		5	1	-	6	20	0	20	60	0
AECC	AEC05AX02	Environment Studies		3	1	-	4	20	0	20	60	0
GE	--	Generic Elective-I*	For Theory course	5	1	-	6	20	0	20	60	0
			For Theory with Practical course	4	-	4	6	20	20	20	60	30
		TOTAL		17/16	3/2	4/8	22	80	20/40	80	240	30/60

*: The students can opt for Generic courses offered by the other departments. Apart from those course following courses will be offered by the University:

1. ENG05GX02 Fundamentals of English Language
2. ENG05GX03 Systems in Languages
3. PHY05GX01 General Physics-I (P)

(P) means course with practical

1. "Core" indicates Core course; A core course is that knowledge which is deemed to be essential for students registered for a particular Programme.
2. "AECC" indicates ability enhancement compulsory courses; AECC are the courses based upon the content that leads to Knowledge enhancement of the students.
3. "DSE" indicates Discipline Specific Elective Course. Elective courses offered by the main discipline/subject of study are referred to as Discipline Specific Elective.
4. "SEC" indicates Skill Enhancement Courses; SEC courses are value-based and/or skill-based and are aimed at providing hands-on-training, competencies, skills, etc. These courses may be chosen from a pool of courses designed to provide value-based and/or skill-based knowledge.
5. "GE" indicates Generic Elective (GE) Course; An elective course chosen generally from an unrelated discipline/subject, with an intention to seek exposure is called a Generic Elective.

SEMESTER: II
SCHEME OF TEACHING & EXAMINATION

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE		SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS				
				LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION	
								THEORY	PRACTICAL		THEORY	THEORY
Core	MTM05C201	Analysis		4	-	4	6	20	20	20	60	30
Core	MTM05C202	Ordinary Differential Equations (P)		5	1	-	6	20	0	20	60	0
AECC	AEC05AX01	General English and Communication		3	1	-	4	20	0	20	60	0
GE	--	Generic Elective-I*	For Theory course	5	1	-	6	20	0	20	60	0
			For Theory with Practical course	4	-	4	6	20	20	20	60	30
		TOTAL		17/16	3/2	4/8	22	80	20/40	80	240	30/60

*: The students can opt for Generic courses offered by the other departments. Apart from those course following courses will be offered by the University:

1. GEN05GX02 Computer Applications and IT Skills
2. PHY05GX02 General Physics-II **(P)**

(P) means course with practical

SEMESTER: III
SCHEME OF TEACHING & EXAMINATION

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE		SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS				
				LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION	
								THEORY	PRACTICAL		THEORY	THEORY
Core	MTM05C301	Theory of Real Functions		5	1	-	6	20	-	20	60	0
Core	MTM05C302	Group Theory I		5	1	-	6	20	-	20	60	0
Core	MTM05C303	Multivariate Calculus (P)		4	-	4	6	20	20	20	60	30
SEC	--	Skill Enhancement Course-#		3	1	-	4	20	-	20	60	0
GE	--	Generic Elective-III*	For Theory course	5	1	-	6	20	0	20	60	0
			For Theory with Practical course	4	-	4	6	20	20	20	60	30
		TOTAL		22/21	4/3	4/8	28	100	20/40	100	300	30/60

#: The following skill enhancement courses will be offered by the university. Students can opt any one course:

1. MTM05K301 Logic and Sets
2. GEN05K302 Computer Graphics

*: The students can opt for Generic courses offered by the other departments. Apart from those course following courses will be offered by the University:

1. GEN05GX09 Computer Programming: C Language **(P)**
2. GEN05G302 Cryptography and Network Security

(P) means course with practical

SEMESTER: IV
SCHEME OF TEACHING & EXAMINATION

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE		SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS				
				LECTURE	TUTORIAL	PRACTICAL		INTERNAL		MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION	
								THEORY	PRACTICAL		THEORY	THEORY
Core	MTM05C401	Numerical Methods (P)		5	1	-	6	20	-	20	60	0
Core	MTM05C402	Riemann Integration and Series of Functions		5	1	-	6	20	-	20	60	0
Core	MTM05C403	Group Theory II		4	-	4	6	20	20	20	60	30
SEC	--	Skill Enhancement Course-II#		3	1	-	4	20	-	20	60	0
GE	--	Generic Elective-III*	For Theory course	5	1	-	6	20	0	20	60	0
			For Theory with Practical course	4	-	4	6	20	20	20	60	30
		TOTAL		22/21	4/3	4/8	28	100	20/40	100	300	30/60

#: The following skill enhancement courses will be offered by the university. Students can opt any one course:

1. MTM05K401 Graph Theory and Discrete Mathematics
2. GEN05K402 Operating System: Linux

*: The students can opt for Generic courses offered by the other departments. Apart from those course following courses will be offered by the University:

1. GEN05GX11 Computer Programming: C++ Language (P)
2. GEN05G402 Information Security

(P) means course with practical

SEMESTER: V
SCHEME OF TEACHING & EXAMINATION

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS		
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL	MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION
Core	MTM05C501	PDE and systems of ODE	5	1	-	6	20	20	60
Core	MTM05C502	Ring Theory and Linear Algebra I	5	1	-	6	20	20	60
DSE		* Choose any two	5	1	-	6	20	20	60
DSE			5	1	-	6	20	20	60
		TOTAL	20	4	-	24	80	80	240

*** Choose any two:**

MTM05E501 Analytical Geometry

MTM05E503 Probability and Statistics

MTM05E505 Applications of Algebra

MTM05E506 Industrial Mathematics

MTM05E507 Boolean Algebra and Automata Theory

MTM05E508 Combinatorial Mathematics

SEMESTER: VI
SCHEME OF TEACHING & EXAMINATION

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS		
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL	MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION
Core	MTM05C601	Metric Spaces and Complex Analysis	5	1	-	6	20	20	60
Core	MTM05C602	Ring Theory and Linear Algebra II	5	1	-	6	20	20	60
DSE		* Choose any two	5	1	-	6	20	20	60
DSE			5	1	-	6	20	20	60
		TOTAL	20	4	-	24	80	80	240

*** Choose any two:**

MTM05E601 Introduction to Number Theory
 MTM05E603 Theory of Equations
 MTM05E604 linear Programming
 MTM05E605 Mathematical Modeling
 MTM05E606 Concepts of Differential Geometry
 MTM05E607 Mechanics
 MTM05P601 Project