AKAL UNIVERSITY

TALWANDI SABO

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

Syllabi & Courses of Study For

MASTER OF SCIENCE IN MATHEMATICS
(HONOURS)

2024-2026

DEPARTMENT OF MATHEMATICS

FACULTY OF SCIENCES

7. PROGRAMME STRUCTURE IN M.SC. (H) MATHEMATICS

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
Core	MTM06C102	ALGEBRA-I	4	1	-	5	20	20	60
Core	MTM06C103	COMPLEX ANALYSIS-I	4	1	-	5	20	20	60
Core	MTM06C104	REAL ANALYSIS	4	1	-	5	20	20	60
Core	MTM06C105	DIFFERENTIAL EQUATIONS	4	1	-	5	20	20	60
Core	MTM06C106	ANALYTIC NUMBER THEORY	4	1	-	5	20	20	60
		TOTAL	**20**	**5**		**25**	**100**	**100**	**300**

1. "Core" indicates Core course; A core course is that knowledge which is deemed to be essential for students registered for a particular Programme.

SEMESTER-II

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	MTM06C202	ALGEBRA-II	4	1	-	5	20	20	60
Core	MTM06C203	MEASURE THEORY AND INTEGRATION	4	1	-	5	20	20	60
Core	MTM06C208	TOPOLOGY	4	1	-	5	20	20	60
Core	MTM06C209	LINEAR PROGRAMMING AND GAME THEORY	4	1	-	5	20	20	60
Core	MTM06C210	CALCULUS OF VARIATIONS AND MECHANICS	4	1	-	5	20	20	60

		TOTAL	20	5		25	100	100	300
NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS		
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL/ WRITE UP ON PROJECT	MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION
Core	MTM06C303	FIELD THEORY	4	1	-	5	20	20	60
Core	MTM06C304	FUNCTIONAL ANALYSIS	4	1	-	5	20	20	60
DSE		*Choose any 3/ If Opted Dissertation, Choose any 2	4	1	-	5	20	20	60
			4	1	-	5	20	20	60
			4/4	1/1	-	5/5	20	0	60/80
TOTAL			20	5		25	100	100	300

SEMESTER-III

SCHEME OF TEACHING & EXAMINATION

***DSE (Discipline Specific Elective Course): (Choose any three):**

1. MTM06E301 PROBABILITY AND MATHEMATICAL STATISTICS
2. MTM06E302 FLUID MECHANICS-I

3. MTM06E303 FUZZY SETS AND APPLICATIONS
4. MTM06E305 NUMERICAL METHODS FOR ORDINARY DIFFERENTIAL EQUATION
5. MTM06E306 ADVANCED COMPLEX ANALYSIS
6. MTM06E307 ALGEBRAIC CODING THEORY
7. MTM06E308 OPTIMIZATION TECHNIQUES
8. MTM06E309 FOURIER ANALYSIS
9. MTM06E310 ADVANCED LINEAR ALGEBRA
10. MTM06D301 DISSERTATION (SEMINAR)

NATURE OF COURSE	COURSE CODE	COURSE NAME/TITLE	SCHEDULE OF TEACHING (HRS. PER WEEK)			CREDITS	MARKS		
			LECTURE	TUTORIAL	PRACTICAL		INTERNAL/ VIVA-VOCE	MULTIPLE CHOICE EXAMINATION	END SEMESTER EXAMINATION/DISSERTATION
Core	MTM06C402	COMMUTATIVE ALGEBRA	4	1	-	5	20	20	60
Core	MTM06C404	DIFFERENTIAL GEOMETRY	4	1	-	5	20	20	60
DSE		*Choose any three/ If Opted Dissertation then choose any one	4	1	-	5	20	20	60
			4	1	-	5	20	20	60
			4/8	1/2	-	5/10	20/50+50	20/0	60/100
TOTAL			**20/17**	**5/5**		**25/25**	**100/160**	**100/60**	**300/280**

SEMESTER: IV

SCHEME OF TEACHING & EXAMINATION

***DSE (Discipline Specific Elective Course): (Choose any three):**

1.	MTM06E401	FLUID MECHANICS-II
2.	MTM06E402	ALGEBRAIC NUMBER THEORY
3.	MTM06E403	DIFFERENTIABLE MANIFOLDS
4.	MTM06E404	STOCHASTIC PROCESSES
5.	MTM06E405	METHODS IN APPLIED MATHEMATICS
6.	MTM06E406	NUMERICAL METHODS FOR PARTIAL DIFFERENTIAL EQUATION
7.	MTM06E408	OPERATOR THEORY
8.	MTM06E409	ALGEBRAIC TOPOLOGY
9.	MTM06E410	NON-LINEAR PROGRAMMING PROBLEMS
10.	MTM06D401	DISSERTATION (THESIS)