

Year 1							
Semester 1			Semester 2				
Course No	Subject	Credit Hours		Course No	Subject	Credit Hours	
		Th	Pr			Th	Pr
MATH-101	Calculus-I	3		MATH-104	Calculus II	3	0
MATH-102	Elements of Set Theory and Mathematical Logic	3		MATH-105	Statistics	3	0
CS-103	Introduction of Computer Programming for Data Science	2	1	MATH-106	Software Packages	3	0
HU-111	Communication Skills	1		CY-151 & 151L	Introduction to Physical Chemistry	2	1
IS-101	Islamic and Pakistan Studies-I	3		HU-221	Technical Writing and Presentation Skills	3	0
PHYS-101 & 101L	Mechanics	3	1	IS-201	Islamic and Pakistan Studies II	3	0
QT-101	Translation of the Holy Qur'an-I	1					

Year 2							
Semester 3			Semester 4				
Course No	Subject	Credit Hours		Course No	Subject	Credit Hours	
		Th	Pr			Th	Pr
MATH-201	Calculus III	3	0	MATH-205	Ordinary Differential Equations	3	0
MATH-203	Scientific Programming	2	1	MATH-206	Discrete Mathematics	3	0
MATH-204	Linear Algebra	3	0	MATH-211	Operation Research-I	3	0
PHYS-201 & 201L	Waves and Oscillations	3	1	CY-111 & 111L	Introduction to Analytical Chemistry	2	1
MGT-100	Introduction to Business	3	0	PHYS-202	Heat and Thermodynamics	3	0
				HU-204	Any Foreign Language	1	0
				QT-201	Translation of the Holy Qur'an-II	1	

Year 3							
Semester 5			Semester 6				
Course No	Subject	Credit Hours		Course No	Subject	Credit Hours	
		Th	Pr			Th	Pr
MATH-301	Real Analysis-I	3	0	MATH-307	Classical Mechanics	3	0
MATH-302	Vector and Tensor Analysis	3	0	MATH-308	Partial Differential Equations	3	0
MATH-303	Probability	3	0	MATH-309	Complex Analysis	3	0
MATH-304	Topology	3	0	MATH-310	Differential Geometry	3	0
MATH-312	Operation Research II	3	0	MATH-311	Real Analysis-II	3	0
MATH-305	Modern Algebra-I	3	0	QT-301	Translation of the Holy Qur'an-III	1	

Year 4 (Pure Mathematics)							
Semester 7			Semester 8				
Course No	Subject	Credit Hours		Course No	Subject	Credit Hours	
		Th	Pr			Th	Pr
MATH-400	Number Theory	3	0	MATH-405	Integral Equations	3	0
MATH-401	Numerical Analysis	3	0	MATH-441	Functional Analysis	3	0
MATH-403	Mathematical Physics	3	0		Elective – 3	3	0
	Elective -1	3	0		Elective – 4	3	0
	Elective -2	3	0	MATH-460	Project	3	0
				QT-401	Translation of the Holy Qur'an-IV	1	

*** Elective Subjects (Pure Mathematics)**

- ❖ MATH-442 Measure Theory
- ❖ MATH-443 Algebraic Topology
- ❖ MATH-444 Convex Analysis
- ❖ MATH-445 Modern Algebra II (Rings and Modules)
- ❖ MATH-446 Advanced Group Theory
- ❖ MATH-447 Axiomatic Set Theory
- ❖ MATH-448 Riemannian Geometry
- ❖ MATH-449 Galois Theory

Fourth Year 7th Semester (Applied Mathematics)

Course Code	Course Title	Credit Hours
MATH-401	Numerical Analysis	3
MATH-402	Fluid Mechanics-I	3
MATH-403	Mathematical Physics	3
	Elective-1	3
	Elective-2	3
Total:		15

Fourth Year 8th Semester (Applied Mathematics)

Course Code	Course Title	Credit Hours
MATH-404	Fluid Mechanics-II	3
MATH-405	Integral Equations	3
	Elective-3	3
	Elective-4	3
MATH-460	Project	3
QT-401	Translation of the Holy Qur'an-IV	1
Total:		16

*** Elective Subjects (Applied Mathematics)**

- ❖ MATH-406 Electromagnetism
- ❖ MATH-407 Analytical Dynamics
- ❖ MATH-408 Quantum Mechanics
- ❖ MATH-409 General Relativity
- ❖ MATH-410 Special Relativity
- ❖ MATH-411 Elastic Theory

Fourth Year 7th Semester (Computational Mathematics)

Course Code	Course Title	Credit Hours
MATH-401	Numerical Analysis	3
MATH-403	Mathematical Physics	3
MATH-416	Optimization Theory	3
	Elective-1	3
	Elective-2	3
Total:		15

Fourth Year 8th Semester (Computational Mathematics)

Course Code	Course Title	Credit Hours
MATH-405	Integral Equations	3
MATH-412	Numerical Solutions of Differential Equations	3
	Elective-3	3
	Elective-4	3
MATH-460	Project	3
QT-401	Translation of the Holy Qur'an-IV	1
Total:		16

* Elective Subjects (Computational Mathematics)

- ❖ MATH-417 Mathematical Modeling and Simulation
- ❖ MATH-418 Dynamical Systems
- ❖ MATH-419 Mathematical Biology
- ❖ MATH-420 Computational Fluid Dynamics