BS SCHEME OF STUDIES MATHEMATICS

DEPARTMENT OF MATHEMATICS

GCWUF

2021

Govt. College Women University Faisalabad
Department of Mathematics

Scheme of Studies BS Mathematics Four Years Degree Program
2021

<u>**Semester I**</u>

Course Code	Title of the Course	Credit Hours

Major Course		
MTH-104	Calculus I	4(4-0)
Minor Course		
ENG-100	Functional English	3(3-0)
STA-100	Introduction to Statistical Theory	3(3-0)
ICT-100	Introduction to Computer	3(2-1)
PST-100	Pakistan Studies	2(2-0)
PHY-102	Mechanics I	3(3-0)
Total		**18(17-1)**

Semester II

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-105	Calculus II	4(4-0)
Minor Course		
CHM-200	Environmental Sciences	1(1-0)
ISL-100	Islamic Studies	2(2-0)
ENG-101	Communication Skills	3(3-0)
ISL-101-A/ETH-101-A	Translation Study of the Holy Quran/Ethics	1(1-0)
PHY-104	Mechanics II	3(3-0)
PSY-100	Introduction to Psychology	3(3-0)
ICT- 103	Introduction to Programming	3(2-1)
Total		**18(17-1)**

Semester III

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-206	Calculus III	4(4-0)
MTH- 241	Ordinary Differential Equations	3(3-0)
MTH-211	Elements of Set Theory and Mathematical Logic	3(3-0)

	Minor Course		
ECO-200	Principles of Microeconomics	3(3-0)
ENG-200	Technical Writing	3(3-0)
Total		**16(16-0)**

Semester IV

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-212	Discrete Mathematics	3(3-0)
MTH-231	Linear Algebra	3(3-0)
MTH-261	Affine and Euclidean Geometry	3(3-0)
MTH-251	Topology	3(3-0)
Minor Course		
ARB- 100	Arabic Language I	3(3-0)
ISL-101-B/ETH-101-B	Translation Study of the Holy Quran/Ethics	1(1-0)
Total		**15(15-0)**

Semester V

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-321	Real Analysis I	3(3-0)
MTH-323	Complex Analysis I	3(3-0)
MTH-332	Algebra I	3(3-0)
MTH-352	Differential Geometry	3(3-0)
MTH-381	Vector and Tensor Analysis	3(3-0)
Total		**15(15-0)**

Optional Course		
Course Code	**Title of the Course**	**Credit Hours**
* Chin - 305	Learn Chinese Language	3(3-0)

Semester VI

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-322	Real Analysis II	3(3-0)
MTH-324	Complex Analysis II	3(3-0)

Course Code	Title of the Course	Credit Hours
MTH-325	Functional Analysis	3(3-0)
MTH-333	Algebra II	3(3-0)
MTH-342	Partial Differential Equations	3(3-0)
MTH-382	Classical Mechanics	3(3-0)
Minor Course		
ISL-101-C/ETH-101-C	Translation Study of the Holy Quran/Ethics	1(1-0)
Total		**18(18-0)**

Semester VII

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-453	Number Theory	3(3-0)
MTH-461	Numerical Analysis I	3(3-0)
MTH-471	Mathematical Statistics I	3(3-0)
MTH-494	Seminar	1(0-1)
Elective Courses (2 courses out of following)		
MTH-435	Advanced Group Theory	3(3-0)
MTH-436	Continuous Groups	3(3-0)
MTH-437	Rings and Modules	3(3-0)
MTH-454	Advanced Topology	3(3-0)
MTH-455	Algebraic Topology	3(3-0)
MTH-463	Operations Research	3(3-0)
MTH-464	Software Packages	3(2-1)
MTH-481	Methods of Mathematical Physics	3(3-0)
MTH-482	Quantum Mechanics I	3(3-0)
MTH-484	Fluid Mechanics I	3(3-0)
MTH-486	Special Theory of Relativity	3(3-0)
Total		**16(15-1)**

Semester VIII

Course Code	Title of the Course	Credit Hours
Major Course		
MTH-413	Advanced Set Theory	3(3-0)

MTH-462	Numerical Analysis II	3(3-0)
MTH-472	Mathematical Statistics II	3(3-0)
MTH- 496	Entrepreneurial Skill Development	1(0-1)
Minor Course		
ISL-101-D/ETH-101-D	Translation Study of the Holy Quran/Ethics	1(1-0)
Elective Courses (3 Courses or 1 Course and (Project/ Thesis/ Internship)) from the following		
MTH-414	Category Theory	3(3-0)
MTH-426	Measure Theory	3(3-0)
MTH-427	Integral Equations	3(3-0)
MTH-438	Theory of Modules	3(3-0)
MTH-439	Galois Theory	3(3-0)
MTH-443	Graph Theory	3(3-0)
MTH-465	Theory of Optimization	3(3-0)
MTH-473	Probability Theory	3(3-0)
MTH-474	Combinatorics	3(3-0)
MTH-483	Quantum Mechanics II	3(3-0)
MTH-485	Fluid Mechanics II	3(3-0)
MTH-487	Theory of Elasticity	3(3-0)
MTH-488	Electromagnetism	3(3-0)
MTH-497	Internship	6(0-6)
MTH-498	Project	6(0-6)
MTH-499	Thesis	6(0-6)
Total		**19(18-1)**

Program	Award	Duration	Semester	Credit Hours
Bachelor of Sciences	BS Mathematics	4 Years	8 Semesters	136