## Doctor of Philosophy (PhD) in Mathematics

## **YEAR ONE**

Course Code	PhD: First Semester Courses Year 1	Credit
MTH 901	Linear Algebra	2
MTH 902	Data Analysis	3
MTH 903	Geometry	3
MTH 904	Advanced Probability	2
MTH 905	Software Metrics	2
MTH 906	Combinatorics	3
	TOTAL CREDITS	15
Course Code	PhD: Second Semester Courses Year 1	Credit
Course Code MTH 911	PhD: Second Semester Courses Year 1 Advanced Abstract Algebra	Credit 2
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MTH 911	Advanced Abstract Algebra	2
MTH 911 MTH 912	Advanced Abstract Algebra Real Analysis	2
MTH 911 MTH 912 MTH 913	Advanced Abstract Algebra Real Analysis Real Variables	2 3 3
MTH 911 MTH 912 MTH 913 MTH 914	Advanced Abstract Algebra Real Analysis Real Variables Quantitative Analysis	2 3 3 2

## **YEAR TWO**

Course Code	PhD: First Semester Courses Year 2	Credit
MTH 921	Topology	2
MTH 922	Differential Equations	3
MTH 923	Functional Analysis	3
MTH 924	Analytical Mechanics	2
MTH 925	Calculus of Variations	2
MTH 926	Number Theory	3
	TOTAL CREDITS	15
Course Code	PhD: Second Semester Courses Year 2	Credit
Course Code MTH 1001	PhD: Second Semester Courses Year 2 Partial Differential Equations	Credit 2
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MTH 1001	Partial Differential Equations	2
MTH 1001 MTH 1002	Partial Differential Equations Matrix Algebra	2
MTH 1001 MTH 1002 MTH 1003	Partial Differential Equations Matrix Algebra Modern Algebra	2 3 3
MTH 1001 MTH 1002 MTH 1003 MTH 1004	Partial Differential Equations Matrix Algebra Modern Algebra Vector Analysis	2 3 3 2





## **YEAR THREE**

Course Code	PhD: First Semester Courses Year 3	Credit
MTH 1011	Discrete Mathematics	2
MTH 1012	Statistics and Probability Theory	3
MTH 1013	Mathematics Finance	3
MTH 1014	Linear Programming	2
MTH 1015	Applied Mathematics	2
MTH 1016	Computational Mathematics	3
	TOTAL CREDITS	15
Course Code	PhD: Second Semester Courses Year 3	Credit
MTH 1021	Computational Techniques	2
MTH 1022	Mathematical Statistics	3
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MTH 1023	Optimization and Variational Methods	3
MTH 1023 MTH 1024	Optimization and Variational Methods Riemannian Geometry	3 2
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