

## GRADUATE COURSES in Mathematical Sciences

### Curriculum for the Degree of Master of Science (M.Sc.) in Mathematics

#### Basic Courses

\*\*\*\*\* Table I \*\*\*\*\*

#### **Pure Mathematics (Analysis):**

Fourier Analysis  
Functional Analysis  
Harmonic Analysis  
Complex Analysis  
Operator Theory  
Real Analysis  
Topology

#### **Pure Mathematics (Algebra):**

Advanced Algebra  
Commutative Algebra  
Group Theory  
Homological Algebra  
Module Theory  
Ring Theory

#### **Pure Mathematics (Geometry):**

Algebraic Topology  
Algebraic Geometry  
Computational Algebraic Geometry  
Differential Manifolds  
Projective Geometry

#### **Applied Mathematics (Continuous & Discrete):**

Advanced Graph Theory  
Advanced Numerical Analysis  
Combinatorial Analysis  
Dynamical Systems  
Information Theory  
Optimization

### Elective Courses

\*\*\*\*\* **Table II** \*\*\*\*\*

Abstract Harmonic Analysis  
Applied Functional Analysis  
Amenability  
Banach Algebras  
C\*-algebras  
Representation Theory  
Several Variable Complex Analysis  
Topological Groups  
Theory of Ordinary Differential Equations  
Partial Differential Equations  
Coding Theory  
Special Topics  
Mathematical Logic  
Set Theory  
Fuzzy Set and Fuzzy Logic  
Model Theory  
Spectral Graph Theory  
Algebraic Graph Theory  
Category Theory  
Algebraic Number Theory  
Theory of Finite Groups  
Infinite Groups  
Group Representation Theory  
Vector Bundles  
Lie Groups and Lie Algebras  
Topics in Analysis  
Topics in Dynamical Systems  
Topics in Operator Theory  
Topics in K-Algebra  
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## Curriculum for the Degree of Master of Science (M.Sc.) in Statistics,

### Basic Courses

\*\*\*\*\* **Table I** \*\*\*\*\*

**Mathematical Statistic:**

Real Analysis  
Statistical Inference I  
Statistical Inference II  
Probability Theory

**Applied Statistic:**

Linear Models  
Statistical Inference I  
Statistical Inference II  
Advanced Multivariate Methods

### Elective Courses

\*\*\*\*\* **Table II** \*\*\*\*\*

Multivariate Statistical Analysis  
Generalized Linear Models  
Signal Processing  
Topics in Fuzzy Probability  
Stochastic Processes  
Time Series  
Decision Theory  
Queuing Theory  
Sampling Theory  
Special Topics  
Sequential Analysis  
Topics in Fuzzy Statistic  
Theory of Reliability  
Advanced Nonparametric Inference  
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