List of Grad Courses for NE Grad Program Math Requirements

Math Courses in ME

- ME 53900 Introduction to Scientific Machine Learning
- ME 58000 Nonlinear Engineering Systems
- ME 58100 Numerical Methods in Mechanical Engineering
- ME 59700 Data Analytics for Scientists and Engineers (Fall '21—renamed to ME 539 Introduction to Scientific Machine Learning)
- ME 60800 Numerical Methods in Heat, Mass and Momentum Transfer
- ME 61200 Continuum Mechanics
- ME 61400 Computational Fluid Dynamics

Math Courses from Other Schools

- AAE 564 Systems Analysis & Synthesis
- CE 59500 Finite Elements in Elasticity
- CS 51400 Numerical Methods
- CS 51500 Numerical Linear Algebra
- CS 57700 Natural Language Processing
- CS 57800 Statistical Machine Learning
- CS 61500 Numerical Methods for Partial Differential Equations I
- ECE 58000 Optimization Methods for Systems and Control
- ECE 60000 Random Variables and Signals
- ECE 60200 Lumped System Theory
- IE 54500 Engineering Economic Analysis
- IE 54600 Economic Decisions in Engineering
- IE 69000 Stochastic Network Analysis
- STAT 51100 Statistical Methods
- STAT 51200 Applied Regression Analysis
- STAT 51400 Design of Experiments
- STAT 51600 Basic Probability & Applications
- STAT 52200 Sampling & Survey Techniques
- AAE 51200 Computational Aerodynamics
- AAE 51600 Computational Fluid Mechanics
- AAE 55300 Elasticity in Aerospace Engineering
- AAE 55800 Finite Element Methods in Aerospace Structures
- AAE 60300 Theoretical Methods in Engineering Science I
- AAE 60400 Theoretical Methods in Engineering Science II
- PHYS 570Q Stochastic Processes in Physics
- PHYS 60000 Methods of Theoretical Physics I
- PHYS 60100 Methods of Theoretical Physics II

- **Courses In Mathematics**
- MA 50400 - Real Analysis
- MA 51000 - Vector Calculus
- MA 51100 - Linear Algebra With Applications
- MA 51400 - Numerical Analysis
- MA 51500 - Mathematics Of Finance
- MA 51600 - Advanced Probability And Options With Numerical Methods
- MA 51800 - Advanced Discrete Mathematics
- MA 51900 - Introduction To Probability
- MA 52000 - Boundary Value Problems Of Differential Equations
- MA 52100 - Introduction To Optimization Problems
- MA 52300 - Introduction To Partial Differential Equations
- MA 52500 - Introduction To Complex Analysis
- MA 52700 - Advanced Mathematics For Engineers And Physicists I
- MA 52800 - Advanced Mathematics For Engineers And Physicists II
- MA 53000 - Functions Of A Complex Variable I
- MA 53100 - Functions Of A Complex Variable II
- MA 53200 - Elements Of Stochastic Processes
- MA 53800 - Probability Theory I
- MA 53900 - Probability Theory II
- MA 54200 - Theory Of Distributions And Applications
- MA 54300 - Ordinary Differential Equations And Dynamical Systems
- MA 54400 - Real Analysis And Measure Theory
- MA 54500 - Functions Of Several Variables And Related Topics
- MA 54600 - Introduction To Functional Analysis
- MA 55300 - Introduction To Abstract Algebra
- MA 55400 - Linear Algebra
- MA 55600 - Introduction To The Theory Of Numbers
- MA 56000 - Fundamental Concepts Of Geometry
- MA 56200 - Introduction To Differential Geometry And Topology
- MA 57100 - Elementary Topology
- MA 57200 - Introduction In Algebraic Topology
- MA 57500 - Graph Theory
- MA 58400 - Algebraic Number Theory
- MA 58500 - Mathematical Logic I
- MA 61100 - Methods Of Applied Mathematics I
- MA 61500 - Numerical Methods For Partial Differential Equations I
- MA 62000 - Mathematical Theory Of Optimal Control
- MA 63100 - Several Complex Variables
- MA 63800 - Stochastic Processes I

- MA 63900 - Stochastic Process II
- MA 64200 - Methods Of Linear And Nonlinear Partial Differential Equations I
- MA 64300 - Methods Of Partial Differential Equations II
- MA 64400 - Calculus Of Variations
- MA 65000 - Commutative Algebra
- MA 66100 - Modern Differential Geometry
- MA 66300 - Algebraic Curves And Functions I
- MA 66400 - Algebraic Curves And Functions II
- MA 66500 - Algebraic Geometry