

MATH, STATISTICS & NUMERICAL METHODS

Math

MATH 590	Linear Algebra (3)
MATH 596	Math in Biomedical Research (3) \diamond
MATH 611	Fourier Analysis of Time Series (3) S*
MATH 646	Complex Variable and Applications (3)
MATH 647	Applied PDEs (3)
MATH 648	Calculus of Variations (3) S
MATH 724	Combinatorial Mathematics (3) F*
MATH 725	Graph Theory (3) S*
MATH 750	Stochastic Adaptive Control (3) S*
MATH 765	Mathematical Analysis (3) F
MATH 766	Mathematical Analysis II (3) S
MATH 790	Linear Algebra II (3) F
MATH 791	Modern Algebra I (3) S
MATH 865	Stochastic Processes I (3) S
PHSX 718	Mathematical Methods of Physical Sci (3) F
PHSX 721	Chaotic Dynamics (3) ***F

Statistics

BIOL 570	Intro to Biostatistics (3) F
BIOL 841	Biometry I (5) F
BIOL 943	Multivariate Data Analysis (3) F*
BIOS 714	Biostatistics - Fund Biostatics I (3) F
BIOS 717	Biostatistics - Fund Biostatics II (3) S
BIOS 720	Biostatistics - Analysis of Variance (3) F
BIOS 730	Biostatistics - Appld Linear Regression (3) F
BIOS 740	Biostatistics - Applied Multivariate Mthds (3) S
BIOS 810	Biostatistics - Clinical Trials (3) S
BIOS 835	Biostatistics - Categorical Data Analysis (3) F
BIOS 840	Biostatistics - Linear Regression (3) F
BIOS 871	Biostatistics - Mathematical Statistics (3) F
BIOS 830	Biostatistics - Experimental Design (3) S
ESPY 710	Introduction to Statistical Analysis (3) F
ESPY 711	Lab for Introduction to Stats Analysis (1) F
MATH 605	Applied Regression Analysis (3) F*
MATH 627	Probability (3) F
MATH 628	Mathematical Theory of Statistics (3) S
MATH 727	Probability Theory (3) F
MATH 728	Statistical Theory (3) S

Numerical Methods

AE 725	Optimization and Structural Design (3) \diamond
AE 746	Computational Fluid Dynamics (3) S
BINF 701	Bioinformatics I (5) F
BINF 702	Bioinformatics II (5) S
CE 861	Finite Element Mthds- Solid Mechanics (3) S
CPE 701	Methods of Chem and Petro Calculations (3) F
CPE 778	Optimization of Engineering Systems (3) S
EECS 639	Introduction to Scientific Computing (3) F
EECS 739	Parallel Scientific Computing (3) S
EECS 781	Numerical Analysis I (3) F

EECS 782	Numerical Analysis II (3) S
EECS 868	Math, Optimization with Applications (3) F\diamond
MATH 591	Applied Numerical Linear Algebra (3) S*
MATH 780	Numerical Analysis of Linear Systems (3)
MATH 783	Applied Numerical Analysis of PDEs (3) S
MATH 881	Adv. Numerical Linear Algebra (3) F
MATH 882	Adv. Numerical Differential Equations (3) S*
ME 702	Mechanical Engineering Analysis (3) F
ME 788	Optimal Estimation (3) F\diamond
ME 860	Adv. Mechanical Engr. Problems
ME 861	Theory of the Finite Element Method (3) F
ME 862	Finite Element Mthd -Transient Analysis (3) S*
ME 961	FEM for Nonlinear Probs in Solid Mech (3) ***

ENGINEERING

All 700 + Engr courses count. Suggested courses include:

AE 709	Structural Composites (3) F*
AE 781	Introduction Adaptive Aerostructures (3) S
CE 710	Structural Mechanics (3) F*
CE 767	Intro to Fracture Mechanics (3) S*
CPE 715	Polymer Science and Technology (3)
CPE 715	Drug Delivery (3) S
CPE 732	Advanced Transport Phenomena II (3) S
CPE 751	Basic Rheology (3) ***S
CPE 752	Tissue Engineering (3)
CPE 778	Applied Optimization Techniques (3) S*
EECS 644	Intro Digital Signal Processing (3) F
EECS 730	Intro to Bioinformatics (3)
EECS 731	Introduction to Data Science (3) F\diamond
EECS 738	Machine Learning (3)
EECS 739	Parallel Scientific Computing (3)
EECS 740	Digital Image Processing (3)
EECS 744	Digital Signal Processing (3) S*
EECS 837	Data Mining (3)
EECS 861	Random Signals & Noise (3) F
ME 722	Modeling Dynamics of Mech. Sys. (3) S*
ME 750	Human Motion Biomechanics (3) F*
ME 751	Experimental Biomechanics (3) ***F
ME 752	Acoustics (3) S*
ME 753	Bone Biomechanics (3) ***S
ME 754	Biomedical Optics (3) S
ME 755	Computer Simulation Biomechanics (3) F*
ME 757	Biomechanical Systems (3) S*
ME 758	Physiological Systems (3) S*
ME 760	Biomedical Product Design (3) S
ME 765	Biomaterials (3) F
ME 767	Molecular Biomimetics (3)
ME 790	Biomedical Microdevices (3) \diamond
ME 854	Continuum Mechanics for Soft Tissues (3) S
ME 890	Research Methods (3) S
ME 990	Advanced Biomaterials (3) F

BIOLOGICAL SCIENCES

ANAT 832	Electron Micro Tec (3)
ANAT 845	Histology (2)
BIOL 503	Immunology (3) F
BIOL 560	Histology (3) S
BIOL 600	Intro to Biochemistry (3)
BIOL 636	Biochemistry I (3) F
BIOL 637	Intro Biochemistry Laboratory (2) F
BIOL 638	Biochemistry II (3) S
BIOL 639	Advanced Biochemistry Laboratory (2) S
BIOL 644	Comparative Animal Physiology (3) F*
BIOL 546	Mammalian Physiology (4)
BIOL 650	Advanced Neurobiology (3) S
BIOL 768	Plant Molecular Biology (3)
BIOL 673	Cell and Mol Neurobiology (3) F*
BIOL 688	Molecular Biology of Cancer (3) F
BIOL 750	Advanced Biochemistry (3) ***S
BIOL 752	Cell Biology (3) F
BIOL 754	Brain Diseases & Neurological Disorders (3)
BIOL 755	Mechanisms of Development (3) ◊
BIOL 757	Carcinogenesis & Cancer Biology (3) ◊
BIOL 772	Gene Expression (3) S
BIOL 775	Chemistry of the Nervous System (3) S*
BIOL 841	Biometry I (3) F
BIOL 895	Human Genetics (3) F
BIOL 918	Modern Biochemical and Biophysical Mthds (4) S
BIOL 943	Multivariate Data Analysis (3) F*
BIOL 952	Intro. Molecular Modeling (3) S*
MICR 808	Immunology (3) S
MICR 812	Molecular Virology & Pathogenesis (2) F
MICR 820	Bact Genes & Pathogens (3) S
MICR 825	Virology (3) S
NURO 710	Advanced Neurobiology (3)***

CHEMISTRY (BIOCHEM, PHARM CHEM, MED CHEM)

CHEM 510	Biological Physical Chemistry (3) F*
CHEM 635	Instrumental Mthds of Analysis (2) S
CHEM 718	Mathematical Mthds in Physical Sciences (3) F
CHEM 720	Fundamentals & Mthds Analyt. Chem (3) F
CHEM 740	Principles of Organic Reactions (3) F
CHEM 742	Spectroscopic Ident of Organic Comp (3) SU
CHEM 750	Intro to Quantum Mechanics (3) F
CHEM 760	Intro to Chemistry in Biology (3) F
CHEM 820	Analytical Separations (3) F
CHEM 824	Spectrochemical Mthds of Analysis (3)***
CHEM 828	Bioanalysis (3) F
CHEM 840	Physical Organic Chemistry (3) S
CHEM 852	Statistical Thermodynamics (3) S
CHEM 856	Molecular Spectroscopy (3)***
MDCM 701	Biomedical Chemistry (3) F
MDCM 703	Advanced Biomedical Chemistry (3) S
MDCM 790	Principles of Drug Design (3) S
MDCM 791	Principles of Drug Disposition (1) S
PHCH 718	Physcl-Chem Prin Solution Dsg Frm (3) S
PHCH 730	Biopharmaceutics & Pharmacokinetics (3) F

PHCH 775	Chemistry of the Nervous System (3) S
PHCH 850	Solid State Stability and Formation (3) ◊
PHCH 860	Principles & Practice in Chem Biol (3) F
PHCH 862	Pharmaceutical Equilibrium (3) F
PHCH 870	Advanced Pharm Biotechnology (4) S*
PHCH 920	Chemical Kinetics (2) S
PHCH 972	Drug Stability (2-4) S
PHCH 974	Adv Topic: FTIR
PHCH 974	Adv Topic: Vaccines
PHCH 976	Adv Topic: Biopharmct & Pharmacokin I (3)

LIFE SCIENCES

GSMC 840	Clinical Observation for Bioengineers (3)
HSES 670	Intro to Biomechanics (3) S
HSES 672	Exercise Physiology (3)
HSES 805	Exp and Analysis – Exercise Phys (3) F*
HSES 810	Advanced Exercise Physiology (3) F*
HSES 825	Skeletal Muscle Physiology (3) S*
HSES 872	Exercise & the Cardiovascular System (3) S*
HSES 910	Biochemistry of Exercise (3) S
PHSL 835	Integrative Physiology of Exercise (3) S*
PHSL 838	Advanced Topics – Fundamentals of Imaging
PHSL 844	Neurophysiology (3) S*
PHSL 846	Advanced Neuroscience (5) SU
PHSL 847	Developmental Neurobiology (2)
PHSL 848	Mol Mechanisms Neurological Disord (3) F*
REHS 862	Cell & Molecular Basis of Rehab (2) F
REHS 884	Motor Control & Learning (3) F ◊
REHS 887	Neurorehabilitation (3) S
REHS 970	Instrumental Analysis of Human Function (3) F

GRADUATE WRITING / ELECTIVE COURSES

SPLH 861	Applications in MATLAB Programming SU
ME 790	Graduate Writing (3) SU
PHCH 705	Writing & Communicating Science (3) S
PTRS 889	Grant Writing (3) S
PRVM 868	Biomed Informatics Driven Clinical Resch S
ENTR 701	Entrepreneurship (3)
ENTR 702	Financing Your Own Business (3)
ENTR 703	Marketing Your Own Business (3)
ENTR 704	Launching Your Own Business (3)
ENTR 850	Advanced Entrepreneurship (4)

KEY:

S: Spring	* : biannually
F: Fall	*** : Infrequently
SU: Summer	Blue: KUMC Campus
◊: New course	

Please note these are all subject to change without notice.

Some courses outside of engineering may require a permission number from the course department. Contact the professor or the program assistant of that department for a permission number.