DEPARTMENT OF CHEMISTRY

CHEM 001A. General Chemistry. An introduction to the basic principles of chemistry.
Life Sciences, Physical Sciences, Engineering majors

CHEM 001B. General Chemistry. A continuation of the topics covered in CHEM 001A.
Life Sciences, Physical Sciences, Engineering majors

CHEM 001C. General Chemistry. A continuation of the topics covered in CHEM 001B.
Life Sciences, Physical Sciences, Engineering majors

CHEM 011A. General Chemistry Laboratory for CHEM 001A, Life Sciences, Physical Sciences, Engineering majors

CHEM 011B. General Chemistry Laboratory for CHEM 001B, Life Sciences, Physical Sciences, Engineering majors

CHEM 011C. General Chemistry Laboratory for CHEM 001C, Life Sciences, Physical Sciences, Engineering majors

CHEM 005. Quantitative Analysis. Stoichiometric calculations and applications of principles of chemical equilibrium to analytical problems. Includes titrimetric and gravimetric laboratory procedures.
Life Sciences, Physical Sciences majors

CHEM 006A. Organic Chemistry. Covers modern organic chemistry including structure, nomenclature, reactivity, synthesis, and reaction mechanisms.
Life Sciences, Physical Sciences, Engineering majors

CHEM 006B. Organic Chemistry. A continuation of the topics covered in CHEM 006A.
Life Sciences, Physical Sciences, Engineering majors

CHEM 006C. Organic Chemistry. A continuation of the topics covered in CHEM 006B.
Life Sciences, Physical Sciences, Engineering majors

CHEM 008B. Organic Chemistry, Laboratory for CHEM 008A, Life Sciences, Physical Sciences, Engineering majors

CHEM 008C. Organic Chemistry. A continuation of the topics covered in CHEM 008B.
Life Sciences, Physical Sciences, Engineering majors

CHEM 105. Survey of Physical Chemistry. Introduces thermodynamics, chemical equilibrium, kinetics, quantum chemistry, atomic and molecular structure, and spectroscopy.
Life Sciences majors

CHEM 151A. Inorganic Chemistry. A systematic introduction to the synthesis, reactions, structure, and bonding of important classes of inorganic compounds. Emphasis on non-transition metal chemistry.
Physical Sciences majors

DEPARTMENT OF PHYSICS & ASTRONOMY

PHYS 002A. General Physics. Classical mechanics. Life Sciences majors

PHYS 002B. General Physics. Fluids, thermodynamics, electromagnetism. Life Sciences majors

PHYS 021B. General Physics Laboratory for PHYS 021B.
Life Sciences majors

PHYS 021C. General Physics. Waves, optics, quantum, atomic, and nuclear physics. Life Sciences majors

PHYS 021D. General Physics Laboratory for PHYS 021D.
Life Sciences majors

PHYS 021E. Principles of Physics. Topics include classical laws of motion, force, energy, electricity and magnetism; properties of matter, atomic structure, waves, sound, light, heat, the Earth and Solar system. Good preparation for AP PHYS 002 and PHYS 040 series.
Life Sciences majors

PHYS 040A. General Physics. Classical mechanics, Engineering and Physical Sciences majors

PHYS 040B. General Physics. Thermodynamics, mechanical and sound waves, elasticity. Engineering and Physical Sciences majors

PHYS 040C. General Physics. Electricity and magnetism, electromagnetic oscillations, dc and ac current, circuits, Engineering and Physical Sciences majors

PHYS 017. The Origins, The Origin of the Universe, Origin of Matter, First Generation of Stars and Galaxies. All majors welcome

PHYS 243. Covers basic principles of machine learning (ML) and deep learning (DL). It mainly concentrates on the applications of ML and DL. The course will discuss how these methods can be applied to analyze large amounts of data from different disciplines. The course assumes no prior knowledge of ML.

DEPARTMENT OF STATISTICS

STAT 048. Statistics for Business. An introduction to statistics using business applications. Life Sciences, Physical Sciences majors

STAT 100A. Introduction to Statistics. A general introduction to descriptive and inferential Statistics. Life Sciences, Physical Sciences majors

STAT 100B. Introduction to Statistics. Linear regression, correlation, analysis of variance and simple experimental designs. Life Sciences, Physical Sciences majors

STAT 104. Introduction to Statistical Computing. An introduction to computer-assisted data analysis and statistical inference using both the R and SAS packages. Statistics majors

STAT 155. Probability and Statistics for Science and Engineering. Statistics and probability, including descriptive and inferential statistics and multivariate distributions, with applications in engineering and computer science.

STAT 170. Statistical Computer Packages. A study of major statistical packages including SAS with the emphasis on advanced SAS programming. Statistics majors

DEPARTMENT OF MATHEMATICS

Math 002A. Intro to College Mathematics. Covers linear and polynomial functions, zeros, and inverse functions as well as exponential, logarithmic, and trigonometric functions and their inverses. Business and Social Sciences majors

Math 005. Precalculus. A study of inequalities, absolute value, functions, graphing, logarithms, trigonometry, roots of polynomials, counting, vectors, and other elementary concepts of mathematics. Mathematics majors

Math 006A. Introduction to College Mathematics for the Sciences. A study of functions and their properties and graphs. Topics include linear, rational, polynomial, composite and inverse functions. Natural Sciences and Engineering majors

Math 006B. Introduction to College Mathematics for the Sciences. A study of functions and their properties and graphs. Topics include exponential, logarithmic and trigonometric functions. Natural Sciences and Engineering majors

Math 007A. Calculus for Life Sciences. Introduction to the differential calculus of functions of one variable. Life Sciences majors

Math 007B. Calculus for Life Sciences. Introduction to the integral calculus of functions of one variable. Life Sciences majors

Math 008A. First-Year Calculus. Introduction to the differential calculus of functions of one variable. Mathematics majors

Math 008B. First-Year Calculus. Introduction to the integral calculus of functions of one variable. Mathematics majors

Math 020C. First-Year Calculus. Further topics from integral calculus, improper integrals, infinite series, Taylor's series, and Taylor's theorem. Mathematics majors

Math 010C. Calculus. Several variables. Covers vectors, differential calculus, including implicit differentiation and extreme values, multiple integration; line integrals; vector field theory; and applications of Green, Stokes. Mathematics majors

Math 011. Intro to Discrete Structures. Introduction to basic concepts of discrete mathematics emphasizing applications to computer science. Topics include propositional and predicate calculus, elementary set theory, functions, relations, proof techniques, elements of number theory, enumeration, and discrete probability. Mathematics majors

Math 022. Calculus for Business. Explores relations and functions (e.g., linear, polynomial, logarithmic, and exponential). Addresses differential calculus of functions of one and two variables, as well as integration (indefinite and definite) with applications to business and economic problems. Business majors


Math 040D. Ordinary Differential Equations. Introduction to first-order equations, linear second-order equations, and Laplace transforms, with applications to the physical and biological sciences. Mathematics majors

Math 120. Optimization. Introduction to classical optimization including unconstrained and constrained problems in several variables. Addresses Jacobian and Lagrangean methods and the Kuhn-Tucker conditions. Covers the basic concepts of linear programming including the simplex method, duality, and applications to other subjects. Mathematics majors