DEPARTMENT OF CHEMISTRY AND PHYSICAL SCIENCES

For students majoring in chemistry or biochemistry, the department provides an intensive program of study in the major areas of chemistry with an emphasis on developing skills in analytical thinking and problem solving, evaluation and interpretation of data, effective communication of scientific information, and research methodologies, while also exploring the applications of chemistry that permeate our lives. Sufficient flexibility through open electives allows students to emphasize personal career goals.

Students are prepared for positions in chemical, pharmaceutical, or academic research laboratory settings or in non-traditional settings, which rely on the background and skills that have been acquired. Their education also prepares them for entry into graduate programs of study in chemistry, biochemistry, environmental science, biomedical sciences, pharmacy, secondary education, medicine, or law.

The department also provides a chemistry minor program structured to give students a balanced exposure to the major areas of chemistry and opportunities to develop associated skills. Providing this opportunity is an important asset for students studying in other programs, particularly those pursuing careers in the biomedical and biological sciences.

The department also offers courses in chemistry and physics tailored to the support of programs in the basic and health sciences, nursing and engineering. These programs all have a strong reliance on the ability of students to understand and apply the fundamental concepts of chemistry and physics and to demonstrate clear analytical thinking and problem-solving skills developed in these courses.

The mission of the Department of Chemistry and Physical Sciences is to provide undergraduate coursework in chemistry and the physical sciences in a student-centered, supportive learning environment characterized by small classes with access to faculty and well-equipped laboratory facilities where students can actively engage in the investigative process of science.

In addition, it is the mission of the department to offer stimulating coursework in the physical sciences for non-science majors as part of the University Curriculum so that all students can develop an appreciation of the process of science, engage in scientific investigative experiences, understand the role of science in their everyday lives and be prepared to make informed value judgments in our highly technological society.

- Bachelor of Science in Chemistry (https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/chemistry-bs/)
- Bachelor of Science in Biochemistry (https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/biochemistry-bs/)
- Accelerated Dual-Degree BS in Biochemistry/MS in Molecular and Cell Biology (3+1) (https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/bio-chem-molecular-cell-biology-accelerated/)
- Dual-Degree BS in Biochemistry/MS in Molecular and Cell Biology (4+1) (https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/bio-chem-molecular-cell-biology-accelerated-41/)
- Minor in Chemistry (https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/chemistry-minor/)
- Minor in Physics (https://catalog.qu.edu/arts-sciences/chemistry-physical-sciences/minor-physics/)

Chemistry (CHE)

CHE 101. Fundamentals of General, Organic and Biological Chemistry I. 3 Credits.
Students study the general fundamentals of chemistry: which includes atomic theory and radioactivity, bonding (including ions and molecules), stoichiometry, states of matter, and solutions including solubility, acids, bases and buffers. Students who have already received credit for CHE 110 with a grade of C- or higher are not eligible to take CHE 101.
Prerequisites: Take MA 107; Minimum grade C- or Math placement score of 3.
Corequisites: Take CHE 101L.
Offered: Every year, Fall
UC: Natural Sciences

CHE 101L. Fundamentals of General, Organic and Biological Chemistry I Lab. 1 Credit.
Lab must be taken with CHE 101. (2.5 lab hrs.)
Corequisites: Take CHE 101.
Offered: Every year, Fall
UC: Natural Sciences

CHE 102. Fundamentals of General, Organic and Biological Chemistry II. 3 Credits.
Students study the fundamental chemistry of carbon and the structural and functional relationships of hydrocarbons, alcohols, aldehydes, ketones, esters, carboxylic acids, amines, carbohydrates, lipids and proteins and their application to biochemistry.
Prerequisites: Take CHE 101, CHE 101L; Minimum grade C-.
Corequisites: Take CHE 102L.
Offered: Every year, Spring
UC: Natural Sciences

CHE 102L. Fundamentals of General, Organic and Biological Chemistry II Lab. 1 Credit.
Lab must be taken with CHE 102. (2.5 lab hrs.)
Prerequisites: Take CHE 101, CHE 101L; Minimum grade C-.
Corequisites: Take CHE 102.
Offered: Every year, Spring
UC: Natural Sciences

CHE 106. Chemical Principles with Biological Applications. 3 Credits.
Students learn about atomic theory (including radioactivity), bonding (including ions and molecules) and intermolecular forces, states of matter, solutions (including solubility, acids and bases, buffers, electrolytes and nonelectrolytes), carbon compounds and functional groups. Students apply these fundamental chemical principles to a variety of health-related case studies. (Enrollment restricted to nursing majors)
Prerequisites: Take MA 107; Minimum grade C-; or Math placement score of 3.
Corequisites: Take CHE 106L.
Offered: Every year, Fall and Spring

CHE 106L. Chemical Principles with Biological Applications Lab. 1 Credit.
Lab to accompany CHE 106. (3 lab hrs.)
Corequisites: Take CHE 106.
Offered: Every year, Fall and Spring

CHE 110. General Chemistry I. 3 Credits.
Students study the atomic theory of matter, nomenclature, chemical formulas and reaction equations, stoichiometry, the gas laws and the kinetic molecular theory, thermochemistry, atomic structure, periodicity of the elements, chemical bonding and molecular structure. (Note: this course is designed for science majors.)
Prerequisites: Take MA 107; Minimum grade C- or Math placement score of 3.
Corequisites: Take CHE 110L.
Offered: Every year, All
UC: Natural Sciences

CHE 110L. General Chemistry I Lab. 1 Credit.
Lab must be taken with CHE 110. (3 lab hrs.)
Corequisites: Take CHE 110.
Offered: Every year, All
UC: Natural Sciences

CHE 111. General Chemistry II. 3 Credits.
Students study intermolecular forces, properties of solutions, kinetics, chemical equilibrium, pH, acid-base solution chemistry, thermodynamics and electrochemistry. Problem-solving is emphasized.
Prerequisites: Take CHE 110, CHE 110L; Minimum grade C-.
Corequisites: Take CHE 111L.
Offered: Every year, Spring and Summer
UC: Natural Sciences

CHE 111L. General Chemistry II Lab. 1 Credit.
Lab must be taken with CHE 111. (3 lab hrs.)
Prerequisites: Take CHE 110, CHE 110L; Minimum grade C-.
Corequisites: Take CHE 111.
Offered: Every year, Spring and Summer
UC: Natural Sciences

CHE 202. Chemistry of Macro- and Micronutrients. 4 Credits.
Students investigate the fundamental chemistry of macro- and micronutrients through lectures, projects on current research in the chemistry of food, and integrated online chemistry activities. Emphasis is on the study of the chemistry of the following food components: carbohydrates, fats, proteins, vitamins, minerals and water. The different nutrient needs of non-human animal species are also examined. Enrollment in this course is restricted to students in the online degree completion programs. Students cannot receive credit for CHE 202 AND either SCI 161 or SCI 105. This course is offered online only.
Prerequisites: None
Offered: Every other year, Summer

CHE 210. Organic Chemistry I. 3 Credits.
Students study the principles that govern the properties, reactions, and methods of preparation of organic compounds, focusing on reaction mechanisms, stereochemistry, conformational analysis, resonance, and transition state theory, as well as the nomenclature of organic compounds. Specific functional groups studied include alkanes, alkyl halides, alkenes, and alkynes.
Prerequisites: Take CHE 111 and CHE 111L. Minimum grade C-.
Corequisites: Take CHE 210L.
Offered: Every year, Fall and Summer

CHE 210L. Organic Chemistry I Lab. 1 Credit.
Lab must be taken with CHE 210. (3 lab hrs.)
Corequisites: Take CHE 210.
Offered: Every year, Fall and Summer

CHE 211. Organic Chemistry II. 3 Credits.
This course is a continuation of CHE 210. Students study specific groups such as aromatic compounds, alcohols and phenols, aldehydes, ketones, carboxylic acids and their derivatives and amines, and their analysis by infrared and nuclear magnetic resonance spectroscopy.
Prerequisites: Take CHE 210, CHE 210L; Minimum grade C-.
Corequisites: Take CHE 211L.
Offered: Every year, Spring and Summer

CHE 211L. Organic Chemistry II Lab. 1 Credit.
Lab must be taken with CHE 211. (3 lab hrs.)
Corequisites: Take CHE 211.
Offered: Every year, Spring and Summer

CHE 215. Analytical Chemistry. 3 Credits.
Students study the principles and practice of classical and modern chemical analysis. The following topics are studied: statistical treatment of analytical data, error analysis, experimental design and sample preparation, simple and complex equilibria, gravimetric analysis, potentiometry and spectrophotometry. Intended for chemistry and biochemistry majors and chemistry minors.
Prerequisites: Take CHE 111, CHE 111L; Minimum grade C-.
Corequisites: Take CHE 215L.
Offered: Every year, Fall and Spring

CHE 215L. Analytical Chemistry Lab. 1 Credit.
Lab must be taken with CHE 215. (3 lab hrs.)
Corequisites: Take CHE 215.
Offered: Every year, Fall and Spring

CHE 300. Special Topics. 3 Credits.
This course covers a selected topic in chemistry. The content is determined by the department to meet program needs.
Prerequisites: Take two 200-level chemistry courses. Minimum grade C- required.
Offered: As needed

CHE 301. Physical Chemistry I. 3 Credits.
Students investigate the underlying theories of chemical phenomena. There is a particular focus on the first three laws of thermodynamics and their applications in chemical systems, including equilibria. The principles of chemical kinetics and reaction mechanisms are also investigated.
Prerequisites: Take CHE 111, CHE 111L; MA 141 or MA 151; and PHY 111, PHY 111L or PHY 122; Minimum grade C-.
Corequisites: Take CHE 301L.
Offered: Every year, Fall

CHE 301L. Physical Chemistry I Lab. 1 Credit.
Lab must be taken with CHE 301. (3 lab hrs.)
Corequisites: Take CHE 301.
Offered: Every year, Fall

CHE 302. Physical Chemistry II. 3 Credits.
Students invesitage quantum theory, spectroscopy and statistical thermodynamics. The study of quantum mechanics is used to provide the basis for developing an understanding of atomic and molecular spectroscopy and chemical bonding.
Prerequisites: Take CHE 301; Minimum grade C-.
Corequisites: Take CHE 302L.
Offered: Every year, Spring

CHE 302L. Physical Chemistry II Lab. 1 Credit.
Lab must be taken with CHE 302. (3 lab hrs.)
Corequisites: Take CHE 302.
Offered: Every year, Spring

CHE 305. Instrumental Analysis. 3 Credits.
Students investigate the following instrumental analysis techniques: FTIR, NMR, UV-VIS, spectroscopy, mass spectrometry and separation methods including gas and liquid chromatography and other current techniques. Basic principles of electronics relating to the design and operation of chemical instrumentation are also discussed.
Prerequisites: Take CHE 211, CHE 211L and CHE 215, CHE 215L; Minimum grade C-.
Corequisites: Take CHE 305L.
Offered: Every year, Spring

CHE 305L. Instrumental Analysis Lab. 1 Credit.
Lab must be taken with CHE 305. (3 lab hrs.)
Corequisites: Take CHE 305.
Offered: Every year, Spring

CHE 315. Biochemistry I. 3 Credits.
Students engage in a comprehensive study of biologically active compounds and their metabolism, biosynthesis and relationship to biological systems, and a detailed study of bioenergetics, enzyme kinetics and buffer systems.
Prerequisites: Take CHE 211, CHE 211L; Minimum grade C-.
Offered: Every year, All

CHE 315L. Biochemistry I Lab. 1 Credit.
Students carry out a series of experiments that expose them to the basic principles of biochemical techniques including biomolecule detection, purification and quantitation, enzyme kinetics assays, protein sequence and structure analysis using bioinformatics tools, and carbohydrate analysis. CHE 315 must be taken prior to, or concurrently with CHE 315L. (3 lab hrs.)
Corequisites: Take CHE 315.
Offered: Every year, Fall and Spring

CHE 316. Biochemistry II. 3 Credits.
Students examine metabolic pathways, motor proteins and neurotransmission with a focus on the structural biology, thermodynamics and regulation of key proteins. Nucleic acids--DNA and RNA--are investigated to understand the chemical principles that govern the flow of genetic information. Key concepts are applied toward an understanding of the molecular basis of disease and the biochemical rationale for the design and therapeutic use of drugs. Students complete experiential projects to explore the application of key concepts towards these topics.
Prerequisites: Take CHE 315; Minimum grade C-.
Offered: Every other year, Spring

CHE 350. Science Communication. 3 Credits.
This course develops the oral and visual communication skills essential for professional scientists. Modeled after a scientific journal club, students critically read, analyze, and present primary literature in chemistry, biochemistry, and the physical sciences. Emphasis is placed on clear, engaging, and accurate communication of scientific concepts. Students will deliver oral presentations about multiple journal articles. Students will also attend and critique external research presentations.
Prerequisites: Take CHE 211.
Offered: Every year, Fall

CHE 399. Independent Study in Chemistry I. 1-3 Credits.
Permission of the chairperson is required. May be taken in more than one semester for up to a total of 6 credits.
Prerequisites: None
Offered: All

CHE 410. Inorganic Chemistry. 3 Credits.
Students study the electronic structure of atoms, ionic and covalent bonding, acid-base chemistry and non-aqueous solvents, coordination chemistry, and periodicity. Symmetry and chemical applications of group theory are introduced.
Prerequisites: Take CHE 111; Minimum grade C-.
Offered: Every other year, Fall

CHE 420. Chemistry Integrative Capstone. 3 Credits.
Topics in chemistry including history, ethics, environmental issues and current developments are explored from a scientific perspective. Through oral and written work, students demonstrate connections between their general education, co-curricular activities, major coursework and experiential learning project(s) in chemistry. This course counts as the university's Integrative Capstone requirement for Biochemistry and Chemistry majors.
Prerequisites: Senior status as a chemistry/biochemistry major or approval of chairperson.
Offered: Every year, Spring

CHE 475. Chemistry Seminar I. 1 Credit.
Students attend research group meetings and outside seminars. Students prepare and present a literature-based seminar on a topic approved by their research mentor. (Enrollment restricted to senior chemistry and biochemistry majors.)
Corequisites: Take CHE 490.
Offered: Every year, Fall

CHE 476. Chemistry Seminar II. 1 Credit.
Students attend research group meetings and outside seminars. Students prepare and present a seminar and a poster presentation on their research project. (Enrollment restricted to senior chemistry and biochemistry majors.)
Prerequisites: Take CHE 475 and CHE 490.
Corequisites: Take CHE 491.
Offered: Every year, Spring

CHE 490. Chemistry Research. 1-3 Credits.
Students work closely with a faculty mentor on a research project. A minimum of 33 lab hours or equivalent is required per credit hour. Enrollment restricted to chemistry and biochemistry majors. Students may take this course multiple times for up to 6 credits total. Students may not self-register for this course. Prior mentor approval is required
Prerequisites: None
Offered: Every year, Fall and Spring

CHE 491. Chemistry Research II. 3 Credits.
Students continue their work on a chemistry research project, which they began in CHE 490. A minimum of 100 lab hours or equivalent is required. (Enrollment restricted to senior chemistry and biochemistry majors.)
Prerequisites: Take CHE 475 and CHE 490.
Corequisites: Take CHE 476.
Offered: Every year, Spring

CHE 515. Advanced Biochemistry. 4 Credits.
This course offers advanced insights into major areas of biochemistry, including the structure and function of biological molecules, cell and membrane structure and function, bioenergetics and enzyme function, and cellular metabolism. This is a suitable prerequisite for many graduate courses.
Prerequisites: None
Offered: Every year, Spring

Physics (PHY)

PHY 101. Elements of Physics. **3 Credits.**
Students study the basic principles of physics and some important applications. Kinematics, Newton's laws of motion, circular motion, torque, fluid dynamics, electrostatics, circuits, waves, sound and light are studied. This course is suitable for both science and non-science majors. Students who have credit for PHY 110 or PHY 121 may not register for PHY 101.
Prerequisites: Take MA 107 minimum grade C- or Math placement score of 3.
Corequisites: Take PHY 101L.
Offered: Every year, Fall and Spring
UC: Natural Sciences

PHY 101L. Elements of Physics Lab. **1 Credit.**
Lab must be taken with PHY 101. (2 lab hrs.)
Corequisites: Take PHY 101.
Offered: Every year, Fall and Spring
UC: Natural Sciences

PHY 105. Physics of Music. **3 Credits.**
Students study the principles of wave mechanics and emphasize applications associated with sound, music and instruments. Topics cover the anatomy of waves and sound, the structure and physics of instruments (guitar, trumpet, drums, piano, etc), human voice, singing and speech, musical harmony and scales, architecture acoustics and electronic communication and sound digitization. This course is designed for nonscience majors with no previous coursework in physics or any background in music. This course will use mathematics and algebra but not be the focus of the course. Any math background acceptable. No prerequisites.
Corequisites: Take PHY 105L;
Offered: Every year, Fall
UC: Natural Sciences

PHY 105H. Physics of Music. **3 Credits.**
Students study the principles of wave mechanics and emphasize applications associated with sound, music and instruments. Topics cover the anatomy of waves and sound, the structure and physics of instruments (guitar, trumpet, drums, piano, etc), human voice, singing and speech, musical harmony and scales, architecture acoustics and electronic communication and sound digitization. This course is designed for nonscience majors with no previous coursework in physics or any background in music. This course will use mathematics and algebra but not be the focus of the course. Any math background acceptable. No prerequisites.
Corequisites: Take PHY 105HL
Offered: Every year, Fall
UC: Natural Sciences

PHY 105HL. Physics of Music Lab. **1 Credit.**
Corequisites: Take PHY 105H
Offered: Every year, Fall
UC: Natural Sciences

PHY 105L. Physics of Music Lab. **1 Credit.**
Corequisites: Take PHY 105;
Offered: Every year, Fall
UC: Natural Sciences

PHY 107. Introduction to Astronomy. **3 Credits.**
This course provides students with an overview of the principles and techniques used for observing the night sky, components of the Solar System, Milky Way galaxy and the universe. Students assemble the required tools to examine recent and historic data that is used to build models of the ever-evolving universe. Using hands-on activities, students apply concepts and techniques related to the structure of our solar system, reading and plotting celestial coordinates, gravitation, features and operation of telescopes, methods of determining astronomical distance, stellar and cosmic evolution, and general relativity. Required nighttime telescope observation sessions reinforce lecture concepts. This course is intended for non-science majors and will use basic geometry and algebra for modeling.
Corequisites: Math Placement level of 2 or higher.
Offered: Every year, Spring
UC: Natural Sciences

PHY 110. General Physics I. **3 Credits.**
Students apply algebra and trigonometry to examine the fundamentals of Newtonian mechanics. Topics include vectors, translational and rotational equilibrium, dynamics, kinematics, momentum, and energy. Designed primarily for science majors, this course must be taken in conjunction with PHY 110L.
Prerequisites: Take MA 107; minimum grade C-; or Math placement score of 3.
Corequisites: Take PHY 110L.
Offered: Every year, Fall and Summer
UC: Natural Sciences

PHY 110L. General Physics I Lab. **1 Credit.**
Lab must be taken with PHY 110. (2 lab hrs.)
Corequisites: Take PHY 110.
Offered: Every year, Fall and Summer
UC: Natural Sciences

PHY 111. General Physics II. **3 Credits.**
Students apply algebra and trigonometry to examine the fundamentals of classical electromagnetic theory. Topics include electrostatics, magnetostatics, dc circuits, electromagnetic waves, geometric optics, and interference. Designed primarily for science majors, this course must be taken in conjunction with PHY 111L.
Prerequisites: Take PHY 110, PHY 110L; Minimum grade C-.
Corequisites: Take PHY 111L.
Offered: Every year, Spring and Summer
UC: Natural Sciences

PHY 111L. General Physics II Lab. **1 Credit.**
Lab must be taken with PHY 111. (2 lab hrs.)
Corequisites: Take PHY 111.
Offered: Every year, Spring and Summer
UC: Natural Sciences

PHY 121. University Physics. **4 Credits.**
Students use calculus to examine classical Newtonian mechanics in an integrated lecture and laboratory classroom. Through experimentation, computer modeling and group problem-solving, students apply physics principles to predict the outcome of reality-based and open-ended problems. Topics include kinematics, Newton's laws, conservation of energy and momentum, torque, and equilibrium of static bodies and fluids. (6 studio-lab hrs.)
Prerequisites: Take MA 141 or MA 151; Minimum grade C-.
Offered: Every year, Fall and Spring
UC: Natural Sciences

PHY 122. University Physics II. 4 Credits.
Students use calculus to examine classical electromagnetism in an integrated lecture and laboratory classroom. Through experimentation, computer modeling, and group problem-solving, students apply physics principles to predict the outcome of reality-based and open-ended problems. Topics include electrostatics, magnetostatics, dc circuits, Maxwell's equations, electromagnetic waves, and interference. (6 studio-lab hrs.)
Prerequisites: Take PHY 121; Minimum grade C-.
Offered: Every year, Fall and Spring
UC: Natural Sciences

PHY 200. Special Topics in Physics I. 3 Credits.
This course explores special topics in physics or astronomy.
Prerequisites: None
Offered: As needed

PHY 202. Physics of Life and Technology. 4 Credits.
Students study the basic principles of physics including everyday applications and their use in applied technology. Topics include Newton's Laws of Motion and Gravity, torque, sound, light and optics, electricity and magnetism. These principles are examined through the study of roller coasters, space travel, musical instruments, the mechanics of muscle movements, sports and sport technology, the circuitry of the human brain, medical imaging using light and sound, optics of the human eye, lasers and elementary circuits. Enrollment in this course is restricted to students in the Online Bachelor of Science in Health Science Studies degree completion program. Students may not receive credit for PHY 202 if they already have credit for PHY 101 or PHY 110.
Prerequisites: Basic algebraic skills; MA 107 or MA 110 or higher; or a Math placement score of 3 or higher.
Offered: As needed

PHY 300. Special Topics in Physics II. 3 Credits.
This course explores advanced special topics in physics or astronomy.
Prerequisites: Take PHY 111 or PHY 122 and Take MA 141 or MA 151. Minimum grade C-.
Offered: As needed

PHY 301. Modern Physics. 3 Credits.
Students explore the five shortcomings of classical physics: the luminiferous aether problem, the ultraviolet catastrophe, the photoelectric effect, the electron-orbit problem, and the atomic spectra problem. Through these topics, students uncover how both Einstein's theory of relativity and quantum theory resolve these issues, leading to a paradigm shift that marks the birth of modern physics. The course begins with an introduction to Einstein's special theory of relativity, followed by a study of the foundations of quantum mechanics and its application in modern technologies and scientific instruments.
Prerequisites: Take PHY 111 or PHY 122; Minimum grade C-. And take MA 141 or MA 151, Minimum grade C-.
Offered: Every year, Fall

PHY 399. Independent Study. 1-6 Credits.
This individual study in a specialized area of experimental or theoretical physics or astronomy is open to students by special arrangement with the department chairperson. This is a structured program of reading, problem solving, and/or experiments established through conferences with a member of the physics faculty.
Prerequisites: None
Offered: As needed

Science (SCI)

SCI 102. Earth Sciences. 3 Credits.
This course provides an introduction to the methods of Earth science. Students study the physical, chemical, and biological processes that combine to produce geological processes with attention focused on plate tectonic environments, processes, and forces, Earth system surface processes, and climate change. This course is designed for nonscience majors.
Corequisites: Take SCI 102L.
Offered: Every year, All
UC: Natural Sciences

SCI 102L. Earth Sciences Lab. 1 Credit.
Lab must be taken with SCI 102. (2 lab hrs.)
Corequisites: Take SCI 102.
Offered: Every year, All
UC: Natural Sciences

SCI 105. Chemistry and Nutrition. 3 Credits.
Students study the fundamental chemistry and nutritional role of food components including carbohydrates, fats and proteins, as well as the importance of vitamins, minerals, and water in the diet. Students learn about recent developments in nutrition and how nutrition research is conducted. Students apply these concepts to analyze and improve their own diets. This course is designed for non-science majors. Students may not receive credit for both SCI 105 and SCI 161.
Corequisites: Take SCI 105L.
Offered: As needed
UC: Natural Sciences

SCI 105L. Chemistry and Nutrition Lab. 1 Credit.
Lab must be taken with SCI 105. (2 lab hrs.)
Corequisites: Take SCI 105.
Offered: As needed
UC: Natural Sciences

SCI 161. Nutrition: an Investigative Experience. 3 Credits.
Students study the fundamental chemistry and nutritional role of food components including carbohydrates, fats and proteins, as well as the importance of vitamins, minerals, and water in the diet. Students learn about recent developments in nutrition and how nutrition research is conducted. Students apply these concepts to analyze and improve their own diets. This course is designed for non-science majors. Students may not receive credit for both SCI 161 and SCI 105.
Prerequisites: None
Offered: Every year, All
UC: Natural Sciences

SCI 261. Natural Disasters. 3 Credits.
Students study the causes, occurrence, and consequences of natural disasters. They will analyze the scientific basis of the physical causes, distribution, and frequency of disasters such as earthquakes, volcanoes, hurricanes, floods, mass wasting and tsunamis. Naturally occurring disasters and the role of human activities in both contributing to and mitigation of natural disasters are studied. Case studies of local, regional, and global examples of historical and recent disasters will be used.
Prerequisites: Take EN 101 or EN 103H.
Offered: Every year, Spring
UC: Natural Sciences

SCI 270. Environmental Geology. **3 Credits.**
Environmental geology combines an introduction to basic earth science with a practical treatment of how geological processes have produced and continue to shape the environment in which we live. The interconnections between Earth materials and systems, human interactions with Earth processes, geologic hazards, and human stewardship of Earth resources will all be given special emphasis in this course.
Prerequisites: Take EN 101 or EN 103H
Offered: Every year, Fall
UC: Natural Sciences