CHEMISTRY (CHE)

CHE 513 Methods in Scientific Research and Teaching (3 credits)
This course is intended for prospective teachers in adolescent science education and will be taught collaboratively by three science faculty in the Dyson College of Arts and Sciences. The course will be delivered in a hyperflex method involving online synchronous and asynchronous lectures, discussions and activities. The course is divided into three lecture series: (1) The epistemology of science, the scientific method, principle of causality and use of empirical data; (2) Study of major topics in chemistry including atomic theory, chemical bonding, physical states and thermodynamics, strategies used in teaching chemistry, concepts of doing chemical analysis and use of scientific instruments; (3) The structure of proteins, beginning with their amino acid building blocks up to well-characterized examples of functional proteins with complex tertiary and quaternary structures, how to install and utilize the essential functions PyMOL. Ultimate course goals include acquiring the understanding that inquiry, discovery, experimentation and process are key elements of science research and science education, and learning how science research and science education can foster career pathways for adolescents.
Course Rotation: NYC: Summer 2

CHE 600 Independent Study (1-6 credits)

CHE 601 Elements of Biochemistry and Nutrition (0-3 credits)
A detailed review of organic chemistry and an introduction to biochemistry with special attention to nutritional aspects. Topics may include the chemistry of carbonyl compounds, carboxylic acids, esters, amines, amides, as well as lipids, carbohydrates, proteins, enzymes, nucleic acids, and metabolism. Stress is placed upon an understanding of the basic nutrients, as well as the regulatory role of vitamins and minerals.
Prerequisites: General Chemistry and Organic Chemistry.

CHE 610 Molecular Biochemistry (4 credits)
This course is aimed at integrating key concepts in biochemistry to provide a strong foundation.
Course Rotation: Fall

CHE 640 Physical Biochemistry (4 credits)
To develop a strong understanding of the principles of physical chemistry as they apply to biological systems.
Course Rotation: Spring

CHE 650 Topics in Chemistry (3-4 credits)
The subject matter of this course will vary from semester-to-semester. Check the most recent Schedule of Courses for details. May be taken more than once for credit.

CHE 650M Special Topics in Chemistry: Advanced Inorganic Chemistry (0-4 credits)

CHE 650N Topic: Advanced Organic Chemistry (3 credits)
Prerequisites: This course is only open to Education MST students.

CHE 650P Special Topic in Chemistry: Polymer Chemistry (3 credits)

CHE 650Q Topic in Chemistry: Industrial Chemistry (3 credits)

CHE 650R Topic in Chemistry: Chemical Separations (3 credits)

CHE 650S Topic in Chemistry: Industrial Chemistry (3 credits)

CHE 651 Clinical Chemistry (3 credits)
Prerequisites: General Chemistry and Organic Chemistry.