



Graduate Evening Courses in Chemistry, Fall 2020: ORGANIC • ANALYTICAL • BIOCHEMISTRY

- The Chemistry Department at Rutgers Newark (<http://sasn.rutgers.edu/chemistry>) will offer Graduate Courses in Organic, Analytical and Biochemistry in Fall 2020.
- Register [HERE](#) or scan the code



Scanning Probe Microscopy (26:160:545)

MONDAYS 6:00 - 9:00 PM

REMOTE INSTRUCTION

Instructor: Prof. Huixin He HUIXINHE@NEWARK.RUTGERS.EDU

This course will cover the operation principles of both basic and advanced imaging modes in the family of scanning probe microscopy (SPM) and their applications in frontier research areas. Topics will cover: 1) Overview of scanning probe microscopy, working principles of STM and AFM and some important instrumentation aspects. 2) Efforts toward imaging at the limit of theoretical resolution. 3) Imaging in liquids. 4) Working principles for novel imaging modes beyond morphology and their applications. 5) In-situ electrochemical analysis by AFM and STM. 6) Application beyond imaging: (I) Nanoelectronics and molecular electronics (II); Nanofabrication; (III) Single molecule force spectroscopy; (IV) Nanomechanical/chemical and biochemical detection.

Biochemistry (26:160:581)

TUESDAYS/FRIDAYS 6:00 - 7:20 PM

REMOTE INSTRUCTION

Instructor: Prof. Frank Jordan FRJORDAN@NEWARK.RUTGERS.EDU

This course introduces the structural aspects of the four major classes of biopolymers: nucleic acids, carbohydrates, proteins, and lipids, with a significant emphasis on proteins and enzymes. It also introduces methods for separation of proteins and nucleic acids, and some biological spectroscopy. Finally, the course introduces the important topic of metabolic pathways, concentrating on sugar metabolism and its utility in the citric acid cycle.

Advanced Organic Chemistry: "Chemistry of Heterocyclic Compounds" (26:160:501)

WEDNESDAYS 6:00 - 9:00 PM

REMOTE INSTRUCTION

Instructor: Prof. Michal Szostak MICHAL.SZOSTAK@NEWARK.RUTGERS.EDU

This course will cover fundamental principles and advanced topics in heterocyclic chemistry. Synthesis and reactivity of major classes of heterocyclic compounds are covered in detail, with emphasis on recent advances in synthesis and reaction development. Attention is given to heterocycles of biological interest and the importance of heterocycles in pharmaceutical industry. A special focus is placed on critical evaluation of heterocyclic chemical literature, presentation of seminars and short reviews in heterocyclic chemistry. Each student will be asked to present a short seminar (20-30 min) based on an original research paper from the current heterocyclic literature. As a final project, each student will be asked to review a heterocyclic transformation, or a heterocycle based on an original research paper from the current heterocyclic literature and prepare a 3-page review article in ACS Communication format.