



**RUTGERS**  
UNIVERSITY | NEWARK

**Graduate Evening Courses in  
Chemistry, Fall 2019:  
ORGANIC • ANALYTICAL • BIOMATERIALS**

- The Chemistry Department at Rutgers Newark (<http://chemistry.rutgers.edu/>) will offer Graduate Courses in Organic, Analytical and Materials Chemistry in Fall 2019.
- Register at <http://chemistry.rutgers.edu/grad/graduate-courses> or scan the code



**Biomolecular Design and Nanotechnology (26:160:591)**

**MONDAYS 6:00 - 9:00 PM**

**Life Science Center II, Room 130**

**Instructor: Prof. Fei Zhang      FEI.ZHANG@ASU.EDU**

This course introduces the principles of biomolecular design for self-assembly of nanomaterials, focusing on nucleic acids, peptides, and proteins. Fundamental knowledge, practical applications, and state-of-the-art research topics will be reviewed. The course will begin with an overview of the structures, properties, and cellular functions of the four major classes of biomolecules. The main content of the course will focus on the development of structural nucleic acid nanotechnology, including design and modelling of programmable biomaterials, DNA computing and molecular programming, and DNA/RNA/Protein-based nanomachines and devices. Upon successful completion of this course, students will acquire the knowledge of biomolecular self-assembly, learn to use 3D graphics software, and have a holistic view of research at the interface between biochemistry, materials, computation, and nanotechnology.

**Recent Adv. Organic Chemistry: "Organic Reaction Mechanisms" (26:160:504)**

**WEDNESDAYS 6:00 - 9:00 PM**

**Smith Hall Room 240**

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

This course will cover fundamental aspects of writing mechanisms for organic reactions. Basic principles and reaction types will be reviewed with a focus on mechanistic understanding and synthetic applications. The course is aimed to serve as a bridge between undergraduate and graduate curriculum. The course is aimed at both beginning graduate and advanced undergraduate students with interests in organic chemistry, reaction mechanisms, chemical engineering, biochemistry, and polymers. Attention will also be given to heterocycles, named reactions and reactions of interest in industry. Students are expected to become familiar with drawing reasonable mechanisms in organic chemistry, be able to recognize basic chemistry of functional groups, become familiar with different types of organic reactions and develop an approach to drawing mechanisms of common and new organic reactions.

**Electroanalytical Chemistry (26:160:549)**

**THURSDAYS 6:00 - 9:00 PM**

**Life Science Center I, Room 103**

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

This course will cover the principles and applications of electrochemistry and electroanalytical chemistry. After an introduction to fundamental concepts the course will survey the most commonly used electroanalytical methods, including cyclic voltammetry, linear sweep voltammetry, stripping voltammetry, pulsed voltammetry, and AC impedance spectroscopy. Experimental demonstrations will be designed to provide an in-depth understanding. In addition, relevant examples of frontier research in various fields will be discussed. Upon completion, students are expected to develop a thorough understanding of the concepts of electrochemistry and the different electrochemical techniques; be able to design experiments to investigate a specific physicochemical property by choosing the most suitable techniques; and apply electroanalytical methods for both quantitative and qualitative measurements.