



GUIDE TO MAJORS AT YESHIVA: BIOCHEMISTRY

Choosing a major can be stressful, but it is important to understand that you can pursue almost any career regardless of which major you choose. While there are some exceptions, most entry-level positions simply require general transferable skills—those that can be learned in one setting and applied in another. Relevant experience through internships and activities is generally more important to employers than a major. It is best to choose an area that you find interesting and where you have the ability to do well.

What is the Biochemistry Major?

Biochemistry is the study of the molecular basis of life. It deals with the structure and function of cellular components, such as proteins, carbohydrates, lipids, nucleic acids, and other biomolecules. Biochemists study the discrete characteristics of every organism and biological process. They must scientifically understand both the living world and the chemical world. Students in this major study general chemistry, principals of biology, organic chemistry, physical chemistry, molecular biology, biotechnology, bioinformatics, and more.

What can I do with a Major in Biochemistry?

A college graduate with a major in biochemistry is prepared for a wide choice of science related careers. The chemical and pharmaceutical industries provide opportunities for applied chemical research; medicine and the health science fields emphasize the biological aspect of advances in chemistry. The major is an ideal choice for those students interested in graduate education in biochemistry, chemistry or biology, a career in medicine, medical research or allied health areas, or eventual employment in the areas of forensic science, food science, agricultural research or the biotechnology industry. Some career options available to Biochemistry majors include:

- Biomedical Engineer
- Biotechnologist
- Chemical Engineer*
- Consultant (healthcare industry)
- Entrepreneur
- Forensic Scientist
- Government Researcher
- Medical Researcher
- Molecular Biology Technician
- Pharmacologist
- Plant Pathologist
- Research Associate
- Toxicologist
- Graduate Study Required
- Patent Lawyer
- Physician
- Pharmacist
- Professor
- Research Scientist

*Students interested in a career in chemical engineering may consider the combined engineering program with Columbia University School of Engineering and Applied Science.

Skills and Abilities

Biochemistry majors gain expertise in the molecular basis of the processes that take place in cells and organisms. They will also be able to plan, conduct and evaluate experiments and research and interpret scientific literature. The following list provides a sample of the potential skills acquired through study in Biochemistry:

- Biology theory & practical knowledge
- Communication skills
- Critical thinking abilities
- Information handling & organization
- Operation of scientific equipment
- Problem solving skills
- Quantitative skills
- Statistical awareness
- Teaming skills
- Technical skills

Joint Program Options

Nursing- B.A./B.S.N./M.S.N.: Stern College offers combined programs in nursing with John's Hopkins University and New York University. Students complete a Shaped major as well as adjusted Jewish and General Education requirements at Stern College. Credits remaining to complete the Bachelor of Arts degree are counted back from the nursing school. Students are awarded the BSN at the successful completion of the respecting nursing school and have the option of continuing on for a master's degree.

Occupational Therapy- B.A./M.S.: Stern College offers a combined program in OT with Columbia University. During the first three years at Stern College, students complete college requirements and pre-requisites for Columbia's OT program. Students may apply for the 2-year Columbia University program during the fall semester of their junior year. Students are award a Bachelor of Arts degree from Stern College after completing the first year at Columbia and then a master's from Columbia after completion of the entire program.

Optometry-B.A./O.C: Stern College and the State University of New York State College of Optometry offer an affiliation program to qualified students through which they can receive an undergraduate degree and a Doctor of Optometry degree in seven years. Students accepted into this program will attend Stern College for three years while they complete their college requirements and prerequisites for the College of Optometry. After the first year at SUNY College of Optometry, students receive their Bachelor of Arts degree. The O.D. degree is awarded after completing the program at SUNY College of Optometry.

Physical Therapy- B.A./D.P.T.: Stern College offers combined programs in Physical Therapy with New York Medical College Graduate School of Health and Sciences and the University of Medicine and Dentistry of New Jersey. During the first three years at Stern College, students complete college requirements and prerequisites for the Doctorate of Physical Therapy program. Students are awarded the Bachelor of Arts degree after completing the first year at the professional school and the D.P.T. at the completion of the three year program.

Teaching Math and Science- B.A/M.A.: Stern College and NYU Steinhardt offer an accelerated option for a master's degree in Mathematics and Science Education. During junior/senior year, students may take up to 14 credits at NYU Steinhardt which will count towards both the undergraduate and graduate degrees. Students pay NYU directly for these credits. YU awards students the Bachelor of Arts degree after completion of all the undergraduate requirements and NYU awards the Master's of Arts degree upon completion of the graduate program.