

ALTERNATIVES TO BIOMEDICAL SCIENCES

The B.S. in Biomedical Sciences prepares students for admission into professional programs in medicine, dentistry, optometry, chiropractic, and veterinary medicine, as well as graduate programs in the life sciences. Given that, acceptance into BMS is very competitive. Majoring in BMS is not the only way to prepare students for admission into professional programs. Listed below are options for students who wanted to apply to Biomedical Sciences however do not meet the requirements for the major.

The majors listed below are majors that follow many of the same prerequisites as Biomedical Sciences. There are also many other options students can explore that are not listed here, for example: anthropology, a special major, and many other non-science majors.

BIOCHEMISTRY

Students seeking to examine the chemical basis of life while building a solid foundation in biochemical processes and research can focus on a Bachelor of Science degree in Biochemistry. Particularly, the degree is suitable for students with good laboratory and analytical ability.

A majority of graduates go on to graduate school or pursue professional degrees in medicine, dentistry or pharmacy. Other graduates find employment right after college in laboratories involved in research or quality control analysis or in such fields as consumer protection, sales, and many others. Please note: this major requires a more rigorous Math (MTH141/142) and Physics (PHY107/108/158) sequence and a GPA of 3.0 or greater in the prerequisite courses. The department also offers MA and PhD graduate degrees.

- <http://www.smb.sbuffalo.edu/bch/> • 140 Farber Hall • South Campus • 716-829-3005

BIOLOGICAL SCIENCES

Students completing a degree in the biological sciences find employment in such diverse fields as science writing, medical illustration, biologically oriented computer applications, biomedical-associated sciences, teaching, sales, marketing, horticulture, physicians, dentists, veterinarians, and research technicians.

The Bachelor of Arts degree allows students to do elective laboratory and lecture courses as well as provides a broad-based education in the biological sciences. The Bachelor of Science degree is designed to provide the opportunity for in-depth study within sub disciplines of the biological sciences, including cell and molecular biology, ecology and evolutionary biology, and pre-health studies. The department also offers MS and PhD graduate degrees.

- <http://www.biologicalsciences.buffalo.edu/> • 109 Cooke Hall • North Campus • 716-645-2363

BIOTECHNOLOGY

The Biotechnology Program includes a solid background in science with an emphasis in laboratory skills. This combination of a sound science background, experiential technical skills and expertise in the biomedical fields is unique to this program. The biotechnology curriculum focuses on the breadth of skills and knowledge base required to be comprehensive in an industrial or academic setting, or provide a basis for graduate or professional school. The market value of this training is evident in the willingness of biotechnology companies to become associated with the program through internships for our students and hiring of our graduates.

This program is appropriate for students interested in scientific careers in the rapidly expanding biotechnology industry. An internship possibility exists for selected students at various times throughout the program. Graduates have joined the work force in research and development, quality assurance and quality control or in marketing and sales. Places of employment have included vaccine companies, pharmaceutical companies, in companies which make diagnostic test kits and in academia and research institutes. Students also continue their education at professional schools, masters, or doctorate level in a variety of related areas. Fields include law with a specialization in patent law, masters of business administration with a concentration in biotechnology, medical, dental, pharmacy, and physician assistant schools and science MS and PhD programs.

- <http://www.smb.sbuffalo.edu/cls/> • 26 Cary Hall • South Campus • 716-829-3630

CHEMISTRY AND MEDICINAL CHEMISTRY

Graduates with a bachelor's degree in chemistry often work as bench chemists in industry, hospitals, and government laboratories, or go on to attend graduate or professional schools in such areas as medicine, law or business. The chemistry department offers two degree programs where students can specialize in the areas of analytical, inorganic, medicinal, organic, and physical chemistry. The Bachelor of Arts program is designed for students who wish to pursue a very flexible course of study and the Bachelor of Science program is for those who desire a more complete training in chemistry and plan to continue professionally in the field after graduation in either graduate school or industry. Medicinal chemistry is an interdisciplinary area incorporating synthetic organic chemistry, biochemistry, pharmacology, molecular biology and pharmaceutical chemistry in the search for better drugs. Medicinal chemists have the opportunity to advance science and to also see their work directly contribute to alleviating many of the diseases afflicting humankind.

- <http://www.chemistry.buffalo.edu/> • 363 Natural Sciences • North Campus • 716-645-6800 x2035

MEDICAL TECHNOLOGY

Medical technology deals with the diagnosis and treatment of disease. It is a field of applied biology and chemistry and is appropriate for students interested in the delivery of health-care services. The Bachelor of Science degree in Medical Technology is interdisciplinary in nature, drawing heavily upon the resources of both the natural sciences and the health sciences.

Career opportunities for medical technologists are extremely varied, and employment is available in both the public and private sector. A number of work settings include hospital or private laboratories, instrument manufacturers, research or industrial laboratory careers, and scientific writing or editing, to name a few. Graduates of the Medical Technology Program are also well prepared to pursue additional studies in the biomedical sciences and the medically related professions, such as dentistry, medicine, physician assistant and others.

The Medical Technology Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences and as such graduates are eligible to take the national examination to become a registered medical technologist. UB Program graduates are eligible for licensure and practice in New York State.

- <http://www.smbs.buffalo.edu/cls/> • 24A Cary Hall • South Campus • 716-829-3630

NUCLEAR MEDICINE TECHNOLOGY

Nuclear Medicine Technology is a health-related profession which uses radioactive materials for diagnostic, therapeutic and research purposes. Nuclear Medicine is used to study the function of the internal organs and treat disease. Although it is a highly technical profession, the field also offers a lot of patient interaction. A majority of positions in the nuclear medicine technology field are in hospitals, physician's offices, and outpatient imaging centers. Nuclear medicine technologists can also branch into health physics, or work for commercial companies in sales, research, or education.

- <http://nucmed.buffalo.edu/> • 105 Parker Hall • South Campus • 716-838-5889

PHARMACEUTICAL SCIENCES

Graduates of the pharmaceutical sciences major are highly sought for employment in pharmaceutical research environments. Additionally, graduates may find opportunities in university, hospital, or pharmaceutical industry settings as research associates, drug analysts, manufacturing/production technologists, marketing/sales drug representatives or for preparation for graduate studies. The program offers a unique interdisciplinary field of study that seeks to achieve better understanding of the factors influencing clinical responses to drug therapy and includes coursework in biology, chemistry, biochemistry and mathematics.

- <http://www.pharmacy.buffalo.edu/psci.shtml> • 112 Cooke Hall • North Campus • 716-645-2825

PHARMACOLGY AND TOXICOLOGY

The Department of Pharmacology and Toxicology offers both a BS and a 5 year BS/MS program. These programs provide a strong preparation for graduate study in the Biomedical Sciences and professional schools such as Pharmacy, Medicine, Dentistry, Physician Assistant and Law. The broad academic background of a pharmacology and toxicology degree provides students with a wide array of career opportunities, including the pharmaceutical and chemical industry, government or university laboratories and technical or sales positions. Conceptually this program is based on fundamental sciences, including physics, chemistry, and mathematics and it borrows from developments in allied biomedical fields such as physiology, biochemistry, and molecular biology.

- <http://www.smbs.buffalo.edu/pmy/> • 102 Farber Hall • South Campus • 716-829-2800

PSYCHOLOGY

The department of psychology offers both a Bachelor of Arts and Bachelor of Science degree. The Bachelor of Science degree includes a strong science-oriented training component that emphasizes the scientific foundation of psychology along with a strong basic science background. The Bachelor of Arts degree allows students to pursue diverse interests while obtaining a strong foundation in the behavioral sciences. Graduates of the program are prepared for science-based professions as well as advanced training in psychology, medicine, cognitive science, neuroscience, and other related disciplines.

- <http://www.psychology.buffalo.edu/> • cmgreen@buffalo.edu • 283 Park Hall • North Campus • 716-645-0205

SOCIAL SCIENCES INTERDISCIPLINARY

The Interdisciplinary Degree Programs in the Social Sciences offer students an opportunity to focus on a particular thematic area of interdisciplinary studies whose breadth and diversity overlaps several departments. Each program is designed to offer choice and flexibility in building the program most suitable for individual interests and career goals. There are six different concentrations within the BA and BS programs: cognitive science, environmental studies, health and human services, international studies, legal studies and urban and public policy studies.

- <http://www.ssc.buffalo.edu/> • 203 Clemens Hall • North Campus • 716-645-2245

RESOURCES

CAREER SERVICES

If it is time to re-evaluate your interests and goals or if you need assistance with further understanding yourself, exploring options, or gaining guidance in the decision-making process, then UB's Office of Career Services is an excellent resource that provides several key services:

Career Counseling

Workshops/Seminars/Career Fairs

Self-Assessments/Vocational Interest Inventories

Career Library

Meet-A-Mentor Program

UBE 202 (3-credit course) and much more.

- <http://www.student-affairs.buffalo.edu/career/index.php>
- 259 Capen Hall • North Campus • 716-645-2231

STUDENT ADVISING SERVICES

Student Advising Services (SAS) is the starting point for students to explore the many academic options available at UB. The Center serves students in transition – those undecided about a major and those required to leave one major and choose another. The Center also assists students with planning their semester schedules as they explore. SAS offers a wealth of resources, including semester workshops on choosing a major, the annual UB Majors and Careers Night, listserv announcements, and numerous materials on choosing a major.

- <http://sas.buffalo.edu/>
- 109 Norton Hall • North Campus • 716-645-6013

PREREQUISITES FOR UNDERGRADUATE MAJORS^a

Students who are preparing for a major listed below should seek advisement from the appropriate department.

	ANA	APY	BIO	CHE	CSE	MIC	MT	MTH	NMD	PGY	PHI	PHY	STA
BIOCHEMISTRY^d			200-201 and 205/215	101-102 and 201-202				141-142				107-108/158	
BIOLOGY^d			200-201 and 205/215	101-102 and 201-202				121-122 or 141-142				101/151 and 102/152 or 107-108/158	
BIOTECHNOLOGY			200-201	101-102 and 201-202	101	301 ^c				300			119 or PSY 207
CHEMISTRY^d				101-102 or 105-106 or 107-108 and 201-202 or 251-252				141-142				107-108/158	
MEDICAL TECHNOLOGY	113 ^b	248 ^b	200-201	101-102 and 201-202	101	301	101 ^b 150 ^b 201 ^b			300	337 or 107 or 117		119 or PSY 207
NUCLEAR MEDICINE TECHNOLOGY	113 or NMD 113		200-201	101-102 201-202 ^b	101				210 ^b	300		101/151	119 or PSY 207
PHARMACEUTICAL SCIENCES			200-201	101-102 or 105-106 or 107-108 and 201-202 or 251-252				121-122 or 141-142				101-102 or 107-108	
PHARMACOLOGY AND TOXICOLOGY			200-201	101-102 and 201-202				121-122 or 141-142				101/151 and 102/152 or 107-108/158	
PSYCHOLOGY (BS)^d			200	101-102 or 103-104 or 105-106				121-122 or 141-142					PSY 207
SOCIAL SCIENCES INTERDISCIPLINARY^d	See catalog for prerequisites: http://undergrad-catalog.buffalo.edu/academicprograms/ssc.shtml .												

^a Visit the undergraduate catalog for current requirements and course descriptions at <http://undergrad-catalog.buffalo.edu/>

^b Courses that are recommended by the department but not required.

^c Although MIC 301 is recommended prior to admission, on a space-available basis, students may be admitted without this course; the course must be taken by the end of the summer prior to the senior year.

^d Foreign language is required

KEY: ANA: Anatomy BIO: Biology CSE: Computer Science & Engineering MT: Medical Technology NMD: Nuclear Medicine PHI: Philosophy PSY: Psychology
 APY: Anthropology CHE: Chemistry MIC: Microbiology MTH: Mathematics PGY: Physiology PHY: Physics STA: Statistics