Biochemistry/ Molecular Biology

at Benedictine University

Why study biochemistry/molecular biology at Benedictine?

When you choose to major in Biochemistry/Molecular Biology at Benedictine University, you will have the opportunity to:

- Pursue a degree in an interdisciplinary major that emphasizes critical thinking and problem-solving skills.
- Pursue an investigative-orientated approach to science.
- Use advanced research instrumentation and techniques in a modern laboratory.
- Participate in a highly productive and nationally recognized undergraduate program that has received external funding from federal agencies and the private sector.
- Use the extensive facilities in the Birck Hall of Science, and possibly the facilities at off-campus sites such as BP Amoco, Argonne National Laboratory and Nalco.
- Study systems biology, which exposes you to the disciplines and tools of bioinformatics, genomics and proteomics.
- Publish and present your research findings at local, regional and national symposia.
- Participate in a program that follows the guidelines of the American Society of Biochemistry and Molecular Biology.

What careers are available with a degree in Biochemistry/Molecular Biology?

Unlike the traditional Biology or Chemistry major, the Biochemistry/Molecular Biology program is focused on interdisciplinary education in the natural sciences. This intensive and research-oriented training prepares students for specific graduate programs that are often unavailable to the traditional science major. These include graduate or health-career programs in biochemistry, cell and molecular biology, developmental biology, genetics, microbiology and biotechnology.

The Biochemistry/Molecular Biology major also prepares students for entry-level research and development careers in biotechnology and industry. Biotechnology is the fastest-growing field of study in the natural sciences. Combined with the University's location in the heart of the research and development corridor of metropolitan Chicago, a market exists for highly trained undergraduates with a Bachelor of Science in Biochemistry/Molecular Biology.

How does the program work?

As a Biochemistry/Molecular Biology major, you will acquire a broad base of knowledge represented by the University's required core courses, which are invaluable to your future career development and daily interactions as a citizen of your community. Within the Biochemistry/Molecular Biology major, you will develop proficiency in biocalculus, university physics, general biology and general and organic chemistry. Additional lecture courses in biochemistry, intermediary metabolism, biophysics, genetics and molecular and cellular biology will be reinforced with consecutive series of laboratory courses in recombinant DNA, protein chemistry and genomic bioinformatics. At least three hours of research credit in biochemistry, biology, chemistry, computer science, mathematics and/or physics is strongly recommended.

Demonstrate your social conscience with a certificate in Environmental Studies.

Students with an interest in the environment can earn a certificate in Environmental Studies by choosing specific environmental-focused courses from the anthropology, biochemistry, biology, environmental science, geography, global studies, humanities, literature, management, natural science, philosophy, political science, religious studies, sociology and theology disciplines. Students will learn about the scientific, humanistic, educational and business aspects of sustainability.

Recommended Program

Bachelor of Science in Biochemistry/Molecular Biology

FRESHMAN

Calculus for the Life Sciences I and Lab	5
General Chemistry I and Lab	4
Principles of Organismal Biology	3
Writing Colloquium	3
	15

Calculus for Life Sciences II and Lab	4
Principles of Biology and Lab	4
Research Writing	3
General Chemistry II and Lab	4
	15

JUNIOR

Biochemistry	3
Protein/Biochemistry Lab	1
Mode of Inquiry elective	3
Biophysics	4
Analytical Chemistry I	3
	14

Intermediary Metabolism	3
Cell Biology	3
Mode of Inquiry elective	3
Human Dignity and the Common Good (IDS 301)	3
Mode of Inquiry elective	3
Research	1
	16

SOPHOMORE

Organic Chemistry I and Lab	4
Genetics	3
Catholic and Benedictine Intellectual Traditions (IDS 201)	3
University Physics I and Lab	5
	15

Basic Speech	3
Organic Chemistry II and Lab	4
Recombinant DNA Lab	1
Mode of Inquiry elective	3
University Physics II and Lab	5
	16

SENIOR

Molecular Biology	3
Science elective	3-4
Mode of Inquiry elective	3
Elective	3
Research	1
Mode of Inquiry elective	3
	16-17

Elective	3
Genomics and Bioinformatics	2
Mode of Inquiry elective	3
Science elective	3-4
Research	1
Cell Biology Lab	2
	14-15

"I earned my Ph.D. in 2000 and was a post-doctoral fellow at Harvard Medical School in 2001. I am now a consultant in Biology Education at Harvard University. I have no doubt that my successes are a direct result of my participation in the Molecular Biology program at Benedictine. As I encounter different courses and laboratory work, I find that I have received a superior background in course material and research experience. This is due to the numerous outstanding teachers and other opportunities I experienced throughout my undergraduate career."

- Christine (Moore) Rodriguez, C94, B.S. Biology