

# Forensic Biochemistry

Do you enjoy science and logic? Are you persistent and curious and ready to work when and where you are needed? If so, forensic biochemistry may be the field for you.

Biochemistry is the chemistry of life. Forensics involves applying science to answer legal questions. Often this relates to crime, but not always. Forensic biochemists may be asked to trace the origin of a particular substance, determine paternity or relatedness of humans or animals, or track the spread of disease. Forensic biochemistry is a challenging yet rewarding career. One needs to be honest and ethical to serve the profession well, and also have patience and a keen eye for details. The majority of forensic crime laboratories in the U.S. are publicly operated. The laboratories may be part of the federal, state, county, or local government. There are also a number of private laboratories that operate independently, are associated with universities, or are under contractual agreements with government agencies.

## Skills and Competencies

The Forensic Biochemistry major at NMU is a competitive program that gives you the opportunity to become acquainted with several subjects. Along with the required biology and chemistry classes, you will also need math and criminal justice courses. Students of forensic biochemistry need to be careful followers of the scientific method with a patient and thorough work ethic. Being able to do scientific experiments is one aspect in a forensic biochemistry career, but just as important is being able to analyze and interpret data.

## Job Outlook

Graduating Forensic Biochemistry students can expect to find an average growth market awaiting them. The total number of jobs will grow at about a 6% rate. The starting salary in most fields will be \$38,000 to \$45,000, with the potential to reach \$80,000 for some jobs.

## Course Work

This degree includes the following courses as part of the program requirements, and specific major requirements along with general education courses and graduation requirements.

### Chemistry

- CH111 General Chemistry I (5 cr.)
- CH112 General Chemistry II (5 cr.)
- CH241 Chemical Equilibrium (3 cr.)
- CH242 Quantitative Analysis (2 cr.)
- CH315 Organic Chemistry I (3 cr.)
- CH317 Organic Chemistry Lab I (1 cr.)
- CH325 Organic Chemistry II (3 cr.)
- CH327 Organic Chemistry Lab II (1 cr.)
- CH435 Gas and Liquid Chromatography (2 cr.)
- CH440 Forensic Chemistry (4 cr.)
- CH450 Biochemistry I (4 cr.)

### Forensic Biochemistry Electives

(21 cr.): Choose from a list of courses within the Biology, Chemistry, Criminal Justice, Mathematics, Philosophy, and Political Science programs.

### Other Required Courses

- BI111 Introductory Biology: Principles (4 cr.)
- BI203 Medical Microbiology (3 cr.) or BI303 General Microbiology (5 cr.)
- BI218 Introduction to Cell and Molecular (4 cr.)
- BI312 Genetics (4 cr.)
- CJ110 Introduction to Criminal Justice (4 cr.)
- CJ214 The Investigative Process I (4 cr.)
- MA 161 Calculus I (4 cr.)
- MA109 Intro to Probability and Statistics (4 cr.)
- PH220 Introductory Physics I (5 cr.) or PH201 College Physics I (5 cr.)
- PH221 Introductory Physics II (5 cr.) or PH202 College Physics II (5 cr.)

Detailed course descriptions can be found at [www.nmu.edu/bulletin](http://www.nmu.edu/bulletin).

## Career Development

You should begin the resume-building process as soon as you can. The Academic and Career Advisement Center can assist you with career planning, while Career Services will help you fine tune your resume and look for jobs related to your field.

## Additional Considerations

In the meantime, the more hands-on experience you have, the better the chances are that you will find a job. Participating in a faculty-led research project is the best way to gain practical experience on campus. We have two research courses, CH 490 and CH 491, which allow you to earn college credit towards your degree while gaining hands-on experience. Becoming involved in a career-related internship is another way to develop your professional skills and gain experience. The academic advisors in Chemistry will help to find you a suitable laboratory internship position and you can earn credits for your degree in most cases. The department hires student workers for its chemical stockroom—another way one can gain practical experience and also earn money for school. There is an active Forensic Biochemistry club which is involved in K-12 outreach activities as well as other career preparation events. Finally, your academic course work is important as well, so be sure to maintain a high grade point average. Criminalists work in forensic laboratories in the public or private sectors. The criminalist may start as a bench scientist and work up to forensic laboratory director or professor at community colleges and universities. The field of forensic anthropology encompasses archaeology and physical analysis/comparisons of primarily skeletal remains. Students wishing to gain background training for this field should consider courses in statistics, archaeological field methods, human anatomy, and skeletal biology.

## Potential Careers

NMU's Chemistry Program prepares students for employment in the following careers:

Criminalists

Forensic DNA Analyst

Forensic Scientist

Lab Analyst

Physical Anthropology

Biological Researcher

## Additional Resources and Information

For Career Planning and Opportunities:  
Academic & Career Advisement Center  
3302.1 C.B. Hedgcock  
906-227-2971  
[www.nmu.edu/acac](http://www.nmu.edu/acac)

Chemistry Department  
3301 New Science Facility  
906-227-2911  
[www.nmu.edu/chemistry](http://www.nmu.edu/chemistry)

For Job Search, Resume and Career Information:  
Career Services  
302.3 C.B. Hedgcock  
906-227-2800  
[www.nmu.edu/careers](http://www.nmu.edu/careers)

For Information about NMU Student Organizations  
Associated with this Major Contact:  
Center for Student Enrichment  
1206 University Center  
906-227-2439  
[www.nmu.edu/cse](http://www.nmu.edu/cse)

Chemistry Club;  
(on Facebook as "NMU Chemistry Club")

Forensic Biochemistry Club

Tri Beta Biological Honor Society

Internet Resource Links:  
[www.careers.org](http://www.careers.org)  
[www.bls.gov](http://www.bls.gov)

For Career Information with National Organizations:  
[www.aafs.org](http://www.aafs.org) -Am. Academy of Forensic Science  
[www.asbmb.org](http://www.asbmb.org) -Am.Society for Biochemistry and  
Molecular Biology  
[www.biochemistry.org](http://www.biochemistry.org) -Biochemical Society



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The Academic & Career Advisement Center  
2020



What to do with  
a major in...

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