Master in Biochemistry - Minor in Faith-Based Scientific Research and Public Health

HBI University
Course Duration: 2 years
Credit Hours: 69 (including 15 credit hours for minor)

Program Description

The Master in Biochemistry at HBI University is designed for students who seek to develop expertise in molecular biology, chemical processes in living organisms, and advanced laboratory research. This program integrates biochemical engineering, genetic analysis, and pharmaceutical research to prepare graduates for careers in biotechnology, medicine, environmental sciences, and faith-based public health initiatives.

The Minor in Faith-Based Scientific Research and Public Health offers a specialized focus on applying scientific discoveries to faith-driven healthcare and ethical biomedical research. Students will explore the ethical intersection of faith and science, biotechnological advancements in medicine, and public health strategies for faith-based communities.

This 69-credit hour program includes 30 credit hours of foundational biochemistry courses, 24 credit hours of core laboratory research and pharmaceutical training, 15 credit hours in Faith-Based Scientific Research and Public Health, elective coursework, a supervised practicum, and a research-based master's thesis or capstone project.

Admissions Requirements

- Bachelor's degree in biochemistry, biology, chemistry, or a related field
- Minimum GPA of 3.0
- Two letters of recommendation from faculty or professionals in biochemistry, medicine, or public health
- Statement of purpose outlining career goals in biochemistry and faith-based research
- Research proposal or laboratory portfolio submission (optional)
- Interview with faculty committee (if required)

Practicum Requirement

Students must complete a 300-hour supervised practicum in biotechnology labs, pharmaceutical research facilities, public health organizations, or faith-based healthcare initiatives. Practicum placements include Christian medical missions, nonprofit biomedical research centers, and ethical biotechnology companies.

Master's Thesis / Capstone Project

Students must complete either a research-based master's thesis on biochemical processes, biomedical ethics, or faith-driven medical research, or develop a capstone project implementing a biochemistry-driven public health initiative.

Program Outcomes

Graduates of this program will be able to:

- Conduct biochemical research with applications in medicine, environmental science, and biotechnology.
- Integrate scientific and ethical perspectives in medical and pharmaceutical research.
- Analyze biochemical pathways and their impact on disease, nutrition, and human health.
- Develop public health programs that apply biochemical discoveries to faith-based communities.
- Advocate for ethical biotechnological advancements in healthcare and scientific research.

Career Outcomes & Potential Salary

- Biochemist & Biomedical Researcher – $80,000 - $160,000
- Pharmaceutical Scientist & Drug Development Specialist – $85,000 - $170,000
- Faith-Based Public Health Researcher – $75,000 - $140,000
- Clinical Lab Director for Faith-Based Medical Institutions – $90,000 - $180,000
- Director of Bioethics & Scientific Policy in Religious Organizations – $95,000 - $190,000

Advocacy and Professional Development

Students are encouraged to join organizations such as:

- American Society for Biochemistry and Molecular Biology (ASBMB)
- Christian Medical & Dental Associations
- Society for Faith-Based Scientific Research
- International Bioethics & Medical Ethics Network

Participation in biomedical research conferences, public health summits, and faith-driven scientific policy forums is highly recommended.

Course Breakdown (Total: 69 Credit Hours)

A. Foundational Biochemistry Courses (30 Credit Hours)

Course Code	Course Name	Credit Hours
BIOC-101	Molecular Biology & Genetic Engineering	3

BIOC-102	Enzymology & Metabolic Pathways	3
BIOC-103	Structural Biochemistry & Protein Chemistry	3
BIOC-104	Chemical Biology & Drug Development	3
BIOC-105	Immunochemistry & Disease Mechanisms	3
BIOC-106	Biochemical Techniques & Laboratory Methods	3
BIOC-107	Bioinformatics & Computational Biochemistry	3
BIOC-108	Research Methods in Biochemistry & Biotechnology	3
BIOC-109	Ethics in Biomedical Research & Biotechnology	3
BIOC-110	Systems Biology & Personalized Medicine	3

B. Core Laboratory Research and Pharmaceutical Training (24 Credit Hours)

Course Code	Course Name	Credit Hours
BIOC-201	Pharmaceutical Chemistry & Drug Design	3
BIOC-202	Nanotechnology in Medicine & Healthcare	3
BIOC-203	Biochemical Basis of Neurodegenerative Diseases	3
BIOC-204	Nutrition & Biochemistry of Human Health	3
BIOC-205	Biotechnology & Faith-Based Healthcare Innovations	3
BIOC-206	The Role of Genetics in Disease & Spiritual Ethics	3
BIOC-207	Clinical Laboratory Science & Diagnostics	3
BIOC-208	Supervised Biochemistry Practicum	3

C. Faith-Based Scientific Research and Public Health Minor (15 Credit Hours)

Course Code	Course Name	Credit Hours
FBSC-301	Biblical Ethics in Biomedical Research	3
FBSC-302	Faith & Science: The Intersection of Medicine & Religion	3
FBSC-303	Public Health Initiatives in Religious Communities	3

FBSC-304	Genetics, Bioethics & Theological Perspectives	3
FBSC-305	Faith-Based Approaches to Disease Prevention & Nutrition	3

D. Electives (9 Credit Hours)

Course Code	Course Name	Credit Hours
ELEC-2501	Regenerative Medicine & Ethical Implications	3
ELEC-2502	Artificial Intelligence in Drug Discovery & Ethics	3
ELEC-2503	Sustainable Biochemistry & Green Pharmaceutical Practices	3