

Health Sciences (Clinical & Medical Sciences) & Des Moines University's Master of Science in Biomedical Sciences 3+2

Admissions Requirements & Curriculum Guide

This joint degree major allows students the opportunity to complete three years in the Health Sciences program followed by 2 years in the Master of Science in Biomedical Sciences (MSBS) at Des Moines University (DMU).

Biomedical research is an important part of health care today and requires the work of scientists in a wide variety of settings, including academia, government, pharmaceuticals, and biotechnology-dependent industry. MSBS graduates may be employed as advanced technicians, laboratory managers, educators and scientists using their skills in such diverse areas as cancer research, clinical diagnosis, infectious disease, monitoring food and water supplies and teaching the next generation of scientists. Many have gone on to enroll in medical school as well.

Purpose:

DMU's MSBS program is designed to enable the development in careers in medical and scientific research and academic medicine to benefit the health of people around the world. Biomedical scientists are on the front lines, every day, searching for cures and treatments to some of the world's most devastating diseases and infections.

The 22-24 month graduate degree program will deepen your understanding of human diseases and immunology, as well as give you the opportunities to investigate the mechanisms of health and disease.

Whether you are going to pursue a medical degree or a career in research or academia, DMU's MSBS gives you the necessary skills and knowledge—as well as leadership expertise—to succeed in your professional aspirations.

Program Goals:

1. Carry out and interpret biomedical research that generates new knowledge and advances the field.
2. Apply mastery of core concepts in biomedical science to course work and research projects.
3. Effectively communicate scientific information in written and oral format.
4. Adhere to the appropriate standards of professionalism and ethics related to biomedical research.
5. Collaborate effectively with colleagues, advisors, and the larger research community to promote cooperative learning.

Pre-requisite Requirements (grade of C or higher in each course):

- Biology – 8 hours:
 - BIO 012/012L, Pre-Professional Biology I & Lab – 4 s.h.
 - BIO 013/013L, Pre-Professional Biology II & Lab – 4 s.h.
- Chemistry – 8 hours:
 - CHEM 001/003, General Chemistry I – 4 s.h.
 - CHEM 002/004, General Chemistry II – 4 s.h.
- Organic Chemistry – 4 hours:
 - CHEM 097/098, Organic Chemistry I – 4 s.h.
- Biochemistry – 3 hours:
 - CHEM 130, Biochemistry I: Fundamentals – 3 s.h.
- Physics – 8 hours:
 - PHY 011, General Physics I – 4 s.h.
 - PHY 012, General Physics II – 4 s.h.
- English, English Composition, Speech or Literature – 6 hours
 - FYS: First Year Seminar – 3 s.h.
 - Written Communication AOI – 3 s.h.

Other highly recommended courses include cell biology, microbiology, and immunology.

Should students not complete their coursework at Des Moines University and decide to return to Drake University, they will no longer be eligible for their Drake tuition guarantee. They will be responsible for the current University tuition rate.

More information about DMU's MSBS program can be found [here](#).

Curriculum Guide

First Year					
Fall Semester			Spring Semester		
FYS ---	First Year Seminar	3 CR	HSCI 021	Professionalism in Health Care	2 CR
HSCI 020	Introduction to Health Sciences	2 CR	CHEM 002/4	General Chemistry II & Lab	4 CR
CHEM 001/3	General Chemistry I & Lab	4 CR	BIO 013/L	Pre-Professional Biology II & Lab	4 CR
BIO 012/L	Pre-Professional Biology I & Lab (SCI AOI)	4 CR	MATH 050	Calculus I (QUAN AOI)	3 CR
ELEC ---	Drake Curriculum/Electives	3 CR	ELEC ---	Drake Curriculum/Electives	3 CR
Total Semester Credit Hours		16	Total Semester Credit Hours		16
Second Year					
Fall Semester			Spring Semester		
HSCI 025*	Introduction to the US Health Care System	3 CR	HSCI 125/L	Physiology/Lab ¹	4 CR
CHEM 097/98	Organic Chemistry I/Lab	4 CR	HSCI 060*	Statistics in Health Sciences ³	3 CR
PSY 001	Introduction to Psychology	4 CR	HSCI 106*	Culture Care & Health Literacy (GLOB/CITZ AOI)	3 CR
HSCI 141/L	Human Anatomy/Lab	4 CR	ELEC ---	Elective (CHEM 108/110: Org Chem II/Lab)	4 CR
HSCI 102	Health Economics ²	3 CR	ELEC ---	Drake Curriculum/Electives	3 CR
Total Semester Credit Hours		18	Total Semester Credit Hours		17
Third Year (Apply to DMU MSBS Program)					
Fall Semester			Spring Semester		
HSCI 172	Evaluating Research Literature (INFO AOI)	3 CR	HSCI 105	Values & Ethics in Health Sciences (VE AOI)	3 CR
HSCI 095*	Medical Terminology	1 CR	ELEC ---	Elective (PHY 012: General Physics II)	4 CR
HSCI 055*	Innovation & Leadership in Health Sciences	3 CR	ELEC ---	Drake Curriculum/Electives	10 CR
ELEC ---	Elective (PHY 011: General Physics I)	4 CR			
ELEC ---	Elective (CHEM 130/131: Biochem I/Lab)	4 CR			
ELEC ---	Drake Curriculum/Electives	3 CR			
Total Semester Credit Hours		18	Total Semester Credit Hours		17
Fourth Year					
Fall Semester			Spring Semester		
DMU MSBS ---	Master of Biomedical Sciences Courses	9.5 CR	DMU MSBS ---	Master of Biomedical Sciences Courses	9 CR
Total Semester Credit Hours		9.5	Total Semester Credit Hours		9
Total Program Hours: 120.5					

Click [here](#) to view the remaining MSBS requirements.

Bolded courses must be taken in the designated semester unless prior approval by the College is provided.

***Asterisked HSCI courses** have multiple offerings each year; they should be taken within the designated year but can be taken during an alternative semester.

1 = BIO 129/L – Mammalian Physiology or PHAR 125 can be substituted for requirement (courses offered only in fall semester)

2 = ECON 002 – Principles of Microeconomics can be substituted for requirement (HSCI 102 offered only in fall semester)

3 = STAT 071: Statistics I – an exception to program policy request may be submitted to fulfill this requirement

Electives (minimum 45 credits): Elective credits include [Drake Curriculum](#) requirements not fulfilled by required coursework (outlined below) as well as non-required coursework that permits exploration of and/or advanced study in areas of professional interest within the student's primary degree. Students should review the [student handbook](#) for the complete elective policy. A maximum of 30 graduate level credits can be equated to this undergraduate Health Sciences degree.

Drake Curriculum Areas of Inquiry not fulfilled by required coursework (12 credits): Artistic Literacy, Engaged Citizen, Historical Foundations, and Written Communication.

DMU MSBS Course Equates (18 credits): For students who complete the first year of the 3+2 program, DMU MSBS coursework will fulfill the following undergraduate requirements, resulting in earning a Bachelor of Science in Health Sciences degree.

Electives – 8 credits (*note: DMU MSBS summer term hours can be used for electives if required hours are not met while at Drake, resulting in a summer degree conferral*)

HSCI 155 & 156 – Guided Research I & II – 4 cr.

HSCI 196 & 197 – Health Sciences Internship I & II – 6 cr.

****If not admitted to the MSBS program at DMU, all credit minimums for **Electives** must be fulfilled. The senior capstone (**HSCI 155, 156, 196, & 197**) must also be completed at Drake to earn a Bachelor of Science in Health Sciences degree.**

Students will be required to send an official transcript to the Drake University Office of the Registrar to apply their transfer coursework to the health sciences major requirements. **A minimum of 120 total hours will be required to earn a Bachelor of Science in Health Sciences from Drake University.**