MEDICAL LABORATORY SCIENCE - GENERAL CONCENTRATION

Faculty Coordinating Committee: Campbell (Chemistry and Biochemistry), Faulkner (Biology, Chair), Stover (Biology), Fry (Chemistry and Biochemistry, Chair)

Adjunct Faculty: Affiliate Instructors Carlson and Jobst.

Medical Laboratory Science is an interdepartmental major jointly sponsored by the Department of Biology and the Department of Chemistry and Biochemistry. The objective of the program is to provide the student with the appropriate background for admission to an accredited medical laboratory science hospital program. Students electing the Medical Laboratory Science program will be assigned an advisor in the Department of Chemistry and Biochemistry and must complete either the Clinical or General concentrations to fulfill the program requirements.

Students must submit a petition to advance to candidacy in the program following completion of the following courses with a C or better.

Code	Title	Hours
Required BIO Hours		
BIO 151	Molecules to Cells	3.0
BIO 152	Molecules to Cells Laboratory	1.0
BIO 230	Human Anatomy and Physiology I (Lecture)	3.0
BIO 232	Human Anatomy and Physiology II (Lecture)	3.0
BIO 231	Human Anatomy and Physiology Laboratory I	1.0
BIO 233	Human Anatomy and Physiology Laboratory II	1.0
BIO 406	General Microbiology	4.0
BIO 468	Immunology of Host Defense	3.0-4.0
Required CHM Hours		
CHM 122	Introduction to Medical Laboratory Science	1.0
CHM 110 & CHM 111	General Chemistry I and General Chemistry I Lab	4.0
CHM 116 & CHM 117	General Chemistry II and General Chemistry II Laboratory	4.0
CHM 252 & CHM 253	Organic Chemistry I and Organic Chemistry Laboratory I	5.0
CHM 256 & CHM 257	Organic Chemistry II and Organic Chemistry Laboratory II	4.0
CHM 422	Clinical Chemistry	2.0
CHM/BIO Elective		
CHM 360 or BIO 310	Biochemistry Genetics	3.0
MTH 111	Elementary Statistics	3.0
Total Hours		**45-46**

At the completion of 60 hours of coursework, a 3.0 cumulative gpa and a 3.0 science gpa are required for advancement to candidacy in the Medical Laboratory Science -Clinical concentration. Majors who are eligible for the Clinical concentration (a 3+1 program) usually complete their University coursework in the third year and spend their final year in a clinical internship at an affiliated hospital program. Students in this concentration traditionally apply to one or more of the affiliated hospital practicum programs by December 1st of their junior year. Admission to the clinical practicum is competitive and determined by a selection committee external to Bradley. Continuation in the Clinical concentration of the Medical Laboratory Science program is contingent upon acceptance into an affiliated hospital clinical practicum. All affiliated clinical programs are accredited by the National Accrediting Agency for Clinical Laboratory Science (NAACLS). After successful completion of a clinical practicum, the student will be granted a bachelor's degree from Bradley. Upon receipt of the B.S., graduates are eligible to sit for the national certification exams in Medical Laboratory Science.

Students who are not selected for a senior year clinical practicum are eligible to transition into the Medical Laboratory Science-General concentration. In addition, students may elect the General concentration instead of the Clinical concentration to fulfill the Medical Laboratory Science program requirements. After successful completion of the General concentration coursework and all University requirements, the student will be granted a bachelor's degree from Bradley.

Students may also opt for a 4+1 program by completing a four-year degree at the University to allow them to apply to any accredited medical laboratory science clinical practicum in the nation. Majors in Chemistry, Biochemistry, Biology, Medical Laboratory Science-General concentration or the Liberal Arts and Sciences.

Students desiring a major in Medical Laboratory Science will be required to complete a minimum of 45 hours of science and math courses distributed as follows:

- 19 hours of biology
- 20 hours of chemistry
- 3 hours of biology/chemistry elective
- 3 hours of elementary statistics

Descriptions of biology, chemistry, and math courses required for the degree in Medical Laboratory Science are listed by subject here (https://catalog.bradley.edu/undergraduate/course-descriptions/). These requirements are met by taking the following courses:

Code	Title	Hours
Required BIO Hours		
BIO 151	Molecules to Cells	3.0
BIO 152	Molecules to Cells Laboratory	1.0
BIO 230	Human Anatomy and Physiology I (Lecture)	3.0
BIO 232	Human Anatomy and Physiology II (Lecture)	3.0
BIO 231	Human Anatomy and Physiology Laboratory I	1.0
BIO 233	Human Anatomy and Physiology Laboratory II	1.0
BIO 406	General Microbiology	4.0
BIO 468	Immunology of Host Defense	3.0-4.0
Required CHM Hours		
CHM 122	Introduction to Medical Laboratory Science	1.0
CHM 110 & CHM 111	General Chemistry I and General Chemistry I Lab	4.0
CHM 116 & CHM 117	General Chemistry II and General Chemistry II Laboratory	4.0
CHM 252 & CHM 253	Organic Chemistry I and Organic Chemistry Laboratory I	5.0
CHM 256 & CHM 257	Organic Chemistry II and Organic Chemistry Laboratory II	4.0

CHM 422	Clinical Chemistry	2.0
CHM/BIO Elective		
CHM 360	Biochemistry	3.0
or BIO 310	Genetics	
MTH 111	Elementary Statistics	3.0
Total Hours		**45-46**

Required math and science hours (minimum) in the Medical Laboratory Science major- 45 hrs.

Total required math and science hours (minimum) in the Medical Laboratory Science program – 66 to 78 hrs.

Note: Those students who have not attained an overall grade point average and a science gpa of at least 3.0 after completion of 60 semester hours will complete the General concentration to fulfill the major requirement.

The hours required for a major in Medical Laboratory Science are distributed as follows:

- Biology – 19 to 23 hrs.
- Chemistry - 20 to 23 hrs.
- Statistics - 3 hrs.
- English - 6 hrs.
- Speech Communication - 3 hrs.
- Core Curriculum Electives– 21 hrs.
- Concentration (Clinical or General)-21 to 32 hrs.

Total (minimum) – 120 hrs.

Students in the General concentration must complete 21 to 22 additional science hours as delineated below;

Code	Title	Hours
CHM 320	Quantitative Analysis	3.0
CHM 321	Quantitative Analysis Laboratory	1.0
CHM 380	Junior Seminar in Chemistry and Biochemistry	1.0
CHM 480	Senior Seminar in Chemistry and Biochemistry	1.0
CHM 420	Instrumental Analysis	4.0
Select one of the following:		3.0-4.0
CHM 416	Environmental Chemistry	
BIO 420	Ecosystem Ecology	
BIO 251 & BIO 252	Ecology, Evolution and Biodiversity and Ecology, Evolution and Biodiversity Laboratory	4.0
PHY 107	General Physics I	4.0
Total Hours		**21-22**

Upon receipt of the baccalaureate degree and successful completion of the hospital clinical practicum, graduates are eligible to sit for the national certification exams in Medical Laboratory Science.

The following schedule of courses is suggested for the first year.

Course	Title	Hours
First Year		
Semester 1		
CHM 110	General Chemistry I	3.0
CHM 111	General Chemistry I Lab	1.0
MTH 111	Elementary Statistics	3.0
ENG 101 or COM 103	English Composition or The Oral Communication Process	3.0
Core Curriculum Electives		6.0
	Hours	**16**
Semester 2		
BIO 151	Molecules to Cells	3.0
BIO 152	Molecules to Cells Laboratory	1.0
CHM 116	General Chemistry II	3.0
CHM 117	General Chemistry II Laboratory	1.0
CHM 122	Introduction to Medical Laboratory Science	1.0
COM 103 or ENG 101	The Oral Communication Process or English Composition	3.0
Core Curriculum Elective		3.0
	Hours	**15**
	Total Hours	**31**