

# BS in Medical Laboratory Science (285220) MAP Sheet

## Life Sciences, Microbiology and Molecular Biology

For students entering the degree program during the 2022-2023 curricular year.

This is a limited enrollment program requiring departmental admissions approval. Please see the department office for information regarding requirements for admission to this major.



University Core and Graduation Requirements	Suggested Sequence of Courses	
<b>University Core Requirements:</b>		
<b>Requirements</b>	<b>#Classes</b>	<b>Hours</b>
<b>Religion Cornerstones</b>		<b>Classes</b>
Teachings and Doctrine of The Book of Mormon	1	2.0 REL A 275
Jesus Christ and the Everlasting Gospel	1	2.0 REL A 250
Foundations of the Restoration	1	2.0 REL C 225
The Eternal Family	1	2.0 REL C 200
<b>The Individual and Society</b>		
American Heritage	1-2	3-6.0 from approved list
Global and Cultural Awareness	1	3.0 from approved list
<b>Skills</b>		
First Year Writing	1	3.0 from approved list
Advanced Written and Oral Communications	1	3.0 WRTG 316 recommended
Quantitative Reasoning	1	3.0 STAT 121 recommended
Languages of Learning (Math or Language)	1	3.0 STAT 121 recommended
<b>Arts, Letters, and Sciences</b>		
Civilization 1	1	3.0 from approved list
Civilization 2	1	3.0 from approved list
Arts	1	3.0 from approved list
Letters	1	3.0 from approved list
Biological Science	1	3.0 MMBIO 121
Physical Science	1-2	3.0-7.0 CHEM 105*, PHSCS 105 recomb.
Social Science	1	3.0 from approved list
<b>Core Enrichment: Electives</b>		
Religion Electives	3-4	6.0 from approved list
Open Electives	Variable	Variable personal choice
FOR UNIVERSITY CORE QUESTIONS CONTACT THE ADVISEMENT CENTER – FOR PROGRAM QUESTIONS SEE YOUR FACULTY ADVISOR		
*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (7 hours overlap)		
<b>Graduation Requirements:</b>		
Minimum residence hours required		30.0
Minimum hours needed to graduate		120.0
<b>FRESHMAN YEAR</b>		
<b>1st Semester</b>		
First-year Writing or American Heritage		3.0
CHEM 105		4.0
MMBIO 121		3.0
MMBIO 102		1.0
Languages of Learning (recommended STAT 121)		3.0
Religion Cornerstone course		2.0
<b>Total Hours</b>		<b>16.0</b>
<b>2nd Semester</b>		
First-year Writing or American Heritage		3.0
CELL 220		4.0
CHEM 106		3.0
CHEM 107		1.0
Civilization 1 elective		3.0
Religion Cornerstone course		2.0
<b>Total Hours</b>		<b>16.0</b>
<b>SOPHOMORE YEAR</b>		
<b>3rd Semester</b>		
MMBIO 240		3.0
MMBIO 241		1.0
CHEM 285		4.0
Civilization 2 elective		3.0
Religion Cornerstone course		2.0
General Electives		3.0
<b>Total Hours</b>		<b>16.0</b>
<b>4th Semester</b>		
Global & Cultural Awareness elective		3.0
Arts or Letters Elective		3.0
MMBIO 221		3.0
MMBIO 222		1.0
Physical Science elective (Recommend PHSCS 105)		3.0
Religion cornerstone course		2.0
<b>Total Hours</b>		<b>15.0</b>
Note: This degree program requires a minimum of 120.0 hours for graduation. Students are encouraged to complete an average of 15 credit hours each semester or 30 credit hours each year, which could include spring and/or summer terms. Taking fewer credits substantially increases the cost and the number of semesters to graduate.		
Note: Quantitative Reasoning can be fulfilled by ACT Math subscore of 22 or higher.		
<b>JUNIOR YEAR</b>		
<b>5th Semester</b>		
Arts or Letters elective		3.0
PWS 340		3.0
MMBIO 261		3.0
Social Sciences elective		3.0
Religion elective		2.0
Religion elective		2.0
<b>Total Hours</b>		<b>16.0</b>
<b>6th Semester</b>		
MMBIO 405*		2.0
MMBIO 411		3.0
MMBIO 409		3.0
MMBIO 410		2.0
MMBIO 412		4.0
<b>Total Hours</b>		<b>14.0</b>
<b>Spring/Summer</b>		
Adv. Written & Oral Communication (Recommended WRTG 316)		3.0
General Elective		3.0
<b>Total Hours</b>		<b>6.0</b>
* MMBIO 405 should be taken the 1st semester you are accepted into the program. If you start in the Fall, take MMBIO 405 in the Fall rather than the winter.		
<b>SENIOR YEAR</b>		
<b>7th Semester</b>		
MMBIO 406		4.0
MMBIO 407		4.0
MMBIO 418		2.0
MMBIO 419		1.0
MMBIO 491**		1.0
Religion elective		2.0
<b>Total Hours</b>		<b>14.0</b>
** MMBIO 491 should be taken the 2nd semester you are accepted into the program. If you start in the Fall, take MMBIO 491 in the Winter, if you start in the winter take MMBIO 491 in the Fall.		
<b>8th Semester</b>		
MMBIO 496R***		12.0V
<b>Total Hours</b>		<b>12.0V</b>
<b>Spring/Summer</b>		
MMBIO 496R***		6.0V
<b>Total Hours</b>		<b>6.0V</b>
*** MMBio 496R must be taken during one semester and one term (minimum of 1 credit/semester and term). If you need to have more credits to keep a scholarship, up to 12 credits of MMBIO 496R can be taken during the semester and up to 6 credits for the term.		

## BS in Medical Laboratory Science (285220)

### 2022-2023 Program Requirements (62 Credit Hours)

**Licensure:** *This program meets the educational requirements designed to lead to an occupationally required professional license or certificate in the state of Utah. Students pursuing occupations requiring a license or certificate in a state other than Utah should contact the appropriate BYU academic advisement center as well as the licensing agency in the state where they intend to work to seek information and guidance regarding licensure and certification requirements.*

**REQUIREMENT 1** Complete 13 courses

**PROGRAM PREREQUISITES:**

CELL 220 - Human Anatomy (with lab)	4.0
*CHEM 105 - General College Chemistry 1 with Lab (Integrated)	4.0
CHEM 106 - General College Chemistry 2	3.0
CHEM 107 - General College Chemistry Laboratory	1.0
CHEM 285 - Introductory Bio-organic Chemistry	4.0
MMBIO 102 - Introduction to Clinical Laboratory Techniques	1.0
*MMBIO 121 - General Biology: Health and Disease	3.0
MMBIO 221 - General Microbiology	3.0
MMBIO 222 - General Microbiology Laboratory	1.0
MMBIO 240 - Molecular Biology	3.0
MMBIO 241 - Molecular and Cellular Biology Laboratory	1.0
MMBIO 261 - Infection and Immunity	3.0
PWS 340 - Genetics	3.0

**REQUIREMENT 2** Complete 10 courses

**PROGRAM COURSES:**

MMBIO 405 - Basic Laboratory Operations in Medical Laboratory Science	1.0
MMBIO 406 - Clinical Chemistry	4.0
MMBIO 407 - Clinical Microbiology	5.0
MMBIO 409 - Hematology	3.0
MMBIO 410 - Hematology Laboratory	2.0
MMBIO 411 - Molecular Diagnostics	3.0
MMBIO 412 - Immunohematology	4.0
MMBIO 418 - Medical Parasitology	2.0
MMBIO 419 - Clinical Parasitology Laboratory	1.0
MMBIO 491 - Concept Applications in Laboratory Medicine	1.0

**REQUIREMENT 3** Complete 2.0 hours from the following course(s)

**COMPLETE AN INTERNSHIP EXPERIENCE. COMPLETE AT LEAST 2 HOURS**

**FROM THE FOLLOWING:**

MMBIO 496R - Clinical Experience	12.0v
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**REQUIREMENT 4**

Complete an exit interview.

**REQUIREMENT 5**

Pass the BYU comprehensive exam offered during the clinical experience.

**RECOMMENDED** Complete 2 courses

**ALTHOUGH NOT REQUIRED, THESE COURSES ARE RECOMMENDED.**

STAT 121 - Principles of Statistics	3.0
WRTG 316 - Technical Communication	3.0

**THE DISCIPLINE:**

This degree program is for students who desire to practice clinical laboratory science/medical technology in diagnostic laboratories or related options. The program in clinical laboratory science is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (8410 West Bryn Mawr Avenue, Suite 670, Chicago, IL 60631, 773-714-8880). Program graduates are eligible for National Certification examinations (i.e., ASCP, NCA).

**OBJECTIVE:**

At career entry, the clinical laboratory scientist/medical technologist will be proficient in performing the full range of clinical laboratory tests in areas such as hematology, clinical chemistry, immunohematology, microbiology, serology/immunology, coagulation, molecular, and other emerging diagnostics, and will play a role in the development and evaluation of test systems and interpretive algorithms. The clinical laboratory scientist / medical technologist will have diverse responsibilities in areas of analysis and clinical decision-making, regulatory compliance with applicable regulations, education, and quality assurance/performance improvement wherever laboratory testing is researched, developed, or performed. The clinical laboratory scientist/medical technologist will also possess basic knowledge, skills, and relevant experiences in:

- a. Communication to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient education;
- b. Financial, operations, marketing, and human resource management of the clinical laboratory to enable cost-effective, high-quality, value-added laboratory services;

(continued in next column)

c. Information management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information; and;  
 d. Research design/practice sufficient to evaluate published studies as an informed consumer.

**CAREERS:**

Medical Laboratory Scientist in a Hospital laboratory, Outpatient lab or a Reference Lab; Quality Control/Assurance officer in clinical laboratory; MLS in a Clinical Diagnostic Molecular Laboratory; Clinical Laboratory Information System analyst; Physician Office Laboratory; Management in a Clinical Laboratory; MLS Specialty in Clinical Hematology, Chemistry, Immunohematology or Microbiology; Graduate Studies; Veterinary Medicine Laboratory Scientist; Medical Laboratory Industry – instrumentation sales and service; MLS Educator; Research Scientist; Pathology Assistant Studies

See faculty advisor for additional career choices.

**HONORARY SOCIETIES AND CLUBS:**

The student chapter of the Utah Society for Clinical Laboratory Science provides opportunity for fellowship and professional association.

**FINANCING:**

An endowed scholarship is available to students in clinical laboratory science. Recipient is selected by CLS faculty after program admission. No application is necessary.

**MAP DISCLAIMER**

While every reasonable effort is made to ensure accuracy, there are some student populations that could have exceptions to listed requirements. Please refer to the university catalog and your college advisement center/department for complete guidelines.

**DEPARTMENT INFORMATION**

**Microbiology and Molecular Biology**  
 Brigham Young University

## **BS in Medical Laboratory Science (285220)**

**2022-2023**

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Telephone: (801) 422-2889

### **ADVISEMENT CENTER INFORMATION**

**Life Sciences Advisement**  
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