

# BS in MEDICAL LABORATORY SCIENCE (285220) MAP Sheet

Department of Microbiology and Molecular Biology

For students entering the degree program during the 2016–2017 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				PROGRAM REQUIREMENTS (61 total hours)	
UNIVERSITY CORE REQUIREMENTS				<b>Admittance Requirements:</b> 1. Complete GE, program prerequisites, and submit an application the semester before starting the program.  2. Application deadlines are March 1 for fall semester and October 1 for winter semester admittance.  <b>Complete the following program prerequisites:</b> Chem 105* General College Chemistry 4.0 Chem 106 General College Chemistry 3.0 Chem 107 General College Chemistry Laboratory 1.0 Chem 285 Intro Bio-organic Chemistry 4.0 MMBio 102 Introduction to Clinical Laboratory Techniques 1.0 MMBio 121* General Biology: Hlth & Disease 3.0 MMBio 221 General Microbiology 3.0 MMBio 222 General Microbiology Lab 1.0 MMBio 240* Molecular Biology 3.0 MMBio 241 Molecular & Cellular Biology Lab 1.0 MMBio 261 Infection and Immunity 3.0 PDBio 220 Human Anatomy (with lab) 3.0 PWS 340 Genetics 3.0  <b>Complete the following program courses:</b> MMBio 392 Hematology 2.5 MMBio 393 Immunohematology & Coagulation Theory 2.5 MMBio 394 Practical Hematology 2.0 MMBio 395 Practical Immunohematology & Coagulation Theory 2.0 MMBio 407 Clinical Microbiology 4.0 MMBio 417 Medical Parasitology 3.0 MMBio 422 Pathophysiology & Lab Diagnosis in Clinical Chemistry 2.5 MMBio 423 Pathophysiology & Lab Diagnosis in Clinical Chemistry and Molecular Diagnostics 2.5 MMBio 424 Diagnostic Techniques in Clinical Chemistry 2.0 MMBio 425 Diagnostic Techniques in Clinical Chemistry & Molecular Biology 2.0 MMBio 491 Concept Applications in Laboratory Medicine 1.0	
<u>Requirements</u>	<u>#Classes</u>	<u>Hours</u>	<u>Classes</u>		
<b>Religion Cornerstones</b>					
Teachings & Doctrine, Book of Mormon	1	2.0	Rel A 275		
Jesus Christ & 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>					
Citizenship					
American Heritage	1–2	3–6.0	from approved list		
Global & Cultural Awareness	1	3.0	from approved list		
<b>Skills</b>					
Effective Communication					
First-Year Writing	1	3.0	from approved list		
Adv Written & Oral Communication	1	3.0	Engl 316 recommended		
Quantitative Reasoning	0–1	0–3.0	Stat 121 recommended		
Languages of Learning (Math or Language)	1–4	3–20.0	Stat 121 recommended		
<b>Arts, Letters, and Sciences</b>					
Civilization 1 and 2					
Civilization 1 and 2	2	6.0	from approved list		
Arts	1	3.0	from approved list		
Letters	1	3.0	from approved list		
Scientific Principles & Reasoning					
Biological Science	2	5.0	MMBio 240* and PDBio 120		
Physical Science	2	7.0	Chem 105*, Phscs 105 recomm.		
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		
GRADUATION REQUIREMENTS:					
Minimum residence hours required					
Minimum hours needed to graduate				30.0 120.0	

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)

**BS in MEDICAL LABORATORY SCIENCE (285220)**  
2016–2017

**Suggested Sequence of Courses:**

**FRESHMAN YEAR**

1st Semester

First-Year Writing or A Htg 100	3.0
Chem 105	4.0
MMBio 121	3.0
MMBio 102	1.0
Quantitative Reasoning*, if needed	0–3.0
Religion Cornerstone course	2.0
<b>Total Hours</b>	<b>13–16.0</b>

2nd Semester

First-Year Writing or A Htg 100	3.0
PDBio 220	3.0
Chem 106	3.0
Chem 107	1.0
Civilization 1 elective	3.0
Languages of Learning elective (recommend Stat 121)	3.0
Religion Cornerstone course	2.0
<b>Total Hours</b>	<b>18.0</b>

**SOPHOMORE YEAR**

3rd Semester

MMBio 240 (Biological Science)	3.0
MMBio 241	1.0
Chem 285	4.0
Civilization 2 elective	3.0
Religion Cornerstone course	2.0
General electives	2.0
<b>Total Hours</b>	<b>15.0</b>

4th Semester

PWS 340	3.0
Global & Cultural Awareness elective	3.0
MMBio 221	3.0
MMBio 222	1.0
Physical Science elective (Recommend Phscs 105)	3.0
Religion elective (FWSpSu)	2.0
<b>Total Hours</b>	<b>15.0</b>

**JUNIOR YEAR**

5th Semester

Arts or Letters elective	3.0
PdBio 360	3.0
MMBio 261	3.0
Social Sciences elective	3.0
Religion Cornerstone course	2.0
<b>Total Hours</b>	<b>14.0</b>

6th Semester

MMBio 392 & 394	4.5
MMBio 393 & 395	4.5
MMBio 407	4.0
Religion elective	2.0
<b>Total Hours</b>	<b>15.0</b>

Spring/Summer Term

Arts or Letters elective	3.0
Adv. Written & Oral Communication (Recommend Engl 316)	3.0
<b>Total</b>	<b>6.0</b>

**SENIOR YEAR**

7th Semester

MMBio 417	3.0
MMBio 422, 423, 424, 425	9.0
MMBio 491	1.0
Religion elective (FWSpSu)	2.0
<b>Total Hours</b>	<b>15.0</b>

8th Semester

MMBio 496R* (FWSpSu)	1.0
General electives	5.0
<b>Total Hours</b>	<b>6.0</b>

Spring/Summer Term

MMBio 496R* (FWSpSu)	1.0
General electives	5.0
<b>Total Hours</b>	<b>6.0</b>

\*MMBio 496R must be taken during one semester and one term.

**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:**

*Health Care Agency/Government  
Hospital/Medical Center  
Health Care Administration  
Staff Medical Technologist/Clinical Laboratory Scientists  
Information Systems Management  
Health Maintenance Organization  
Consultant to Physician  
Physician Office Laboratories  
Reference/Commercial Laboratories  
Veterinary Medicine Laboratory Scientist  
Working Abroad  
Humanitarian Work  
Education  
Industry  
Research  
Diagnostic Molecular Laboratories  
Forensic Laboratories*  
(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

**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.

Microbiology and Molecular Biology  
4007 Life Sciences Building  
Brigham Young University, Provo, UT 84602  
Telephone: (801) 422-2889