

# BS in Medical Laboratory Science (285220) MAP Sheet

## Life Sciences, Microbiology and Molecular Biology

For students entering the degree program during the 2018-2019 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>FRESHMAN YEAR</b>			
<b>Requirements</b>	<b>#Classes</b>	<b>Hours</b>	<b>Classes</b>	<u>1st Semester</u>		<b>JUNIOR YEAR</b>	
<b>Religion Cornerstones</b>				First-year Writing or American Heritage 3.0		<u>5th Semester</u>	
Teachings and Doctrine of The Book of Mormon	1	2.0	REL A 275	CHEM 105 4.0	Arts or Letters elective 3.0		
Jesus Christ and the Everlasting Gospel	1	2.0	REL A 250	MMBIO 121 3.0	PWS 340 3.0		
Foundations of the Restoration	1	2.0	REL C 225	MMBIO 102 1.0	MMBIO 261 3.0		
The Eternal Family	1	2.0	REL C 200	Languages of Learning (recommended STAT 121) 3.0	Social Sciences elective 3.0		
<b>The Individual and Society</b>				Religion Cornerstone course 2.0	<b>Total Hours</b> 16.0		<b>Total Hours</b> 16.0
American Heritage	1-2	3-6.0	from approved list	<u>2nd Semester</u>		<u>6th Semester</u>	
Global and Cultural Awareness	1	3.0	from approved list	First-year Writing or American Heritage 3.0	MMBIO 405* 2.0		
<b>Skills</b>				PDBIO 220 3.0	MMBIO 407 4.0		
First Year Writing	1	3.0	from approved list	CHEM 106 3.0	MMBIO 409 3.0		
Advanced Written and Oral Communications	1	3.0	ENGL 316 recommended	CHEM 107 1.0	MMBIO 410 2.0		
Quantitative Reasoning	1	3.0	STAT 121 recommended	Civilization 1 elective 3.0	MMBIO 412 4.0		
Languages of Learning (Math or Language)	1	3.0	STAT 121 recommended	Religion Cornerstone course 2.0	<b>Total Hours</b> 15.0		
<b>Arts, Letters, and Sciences</b>				<b>Total Hours</b> 15.0		<u>Spring/Summer</u>	
Civilization 1	1	3.0	from approved list	<b>SOPHOMORE YEAR</b>		Adv. Written & Oral Communication (Recommended ENGL 316) 3.0	
Civilization 2	1	3.0	from approved list	<u>3rd Semester</u>		General Elective 3.0	
Arts	1	3.0	from approved list	MMBIO 240 3.0	<b>Total Hours</b> 6.0		
Letters	1	3.0	from approved list	MMBIO 241 1.0			
Biological Science	1	3.0	MMBIO 121	CHEM 285 4.0			
Physical Science	1-2	3.0-7.0	CHEM 105*, PHSCS 105 recomm.	Civilization 2 elective 3.0			
Social Science	1	3.0	from approved list	Religion Cornerstone course 2.0			
<b>Core Enrichment: Electives</b>				General Electives 3.0	<b>Total Hours</b> 16.0		
Religion Electives	3-4	6.0	from approved list	<u>4th Semester</u>		<b>SENIOR YEAR</b>	
Open Electives	Variable	Variable	personal choice	Global & Cultural Awareness elective 3.0		<u>7th Semester</u>	
FOR UNIVERSITY CORE QUESTIONS CONTACT THE ADVISEMENT CENTER — FOR PROGRAM QUESTIONS SEE YOUR FACULTY ADVISOR				Arts or Letters Elective 3.0		MMBIO 406 4.0	
*THESE CLASSES FILL BOTH UNIVERSITY CORE AND PROGRAM REQUIREMENTS (7 hours overlap)				MMBIO 221 3.0		MMBIO 411 3.0	
				MMBIO 222 1.0		MMBIO 418 2.0	
				Physical Science elective (Recommend PHSCS 105) 3.0		MMBIO 419 1.0	
				Religion cornerstone course 2.0		MMBIO 491** 1.0	
				<b>Total Hours</b> 15.0		<b>Total Hours</b> 13.0	
				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.		** 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.	
				Note: Quantitative Reasoning can be fulfilled by ACT Math subscore of 22 or higher.		<u>8th Semester</u>	
<b>Graduation Requirements:</b>				MMBIO 496R*** 12.0V			
Minimum residence hours required		30.0		<b>Total Hours</b> 12.0V			
Minimum hours needed to graduate		120.0		<u>Spring/Summer</u>			
				MMBIO 496R*** 6.0V			
				<b>Total Hours</b> 6.0V			
						*** 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) 2018-2019 Program Requirements (61 Credit Hours)

<p><b>REQUIREMENT 1</b> Complete 13 courses</p> <p><b>PROGRAM PREREQUISITES:</b></p> <p>*CHEM 105 - General College Chemistry 1 with Lab (Integrated) 4.0</p> <p>CHEM 106 - General College Chemistry 2 3.0</p> <p>CHEM 107 - General College Chemistry Laboratory 1.0</p> <p>CHEM 285 - Introductory Bio-organic Chemistry 4.0</p> <p>MMBIO 102 - Introduction to Clinical Laboratory Techniques 1.0</p> <p>*MMBIO 121 - General Biology: Health and Disease 3.0</p> <p>MMBIO 221 - General Microbiology 3.0</p> <p>MMBIO 222 - General Microbiology Laboratory 1.0</p> <p>MMBIO 240 - Molecular Biology 3.0</p> <p>MMBIO 241 - Molecular and Cellular Biology Laboratory 1.0</p> <p>MMBIO 261 - Infection and Immunity 3.0</p> <p>PDBIO 220 - Human Anatomy (with lab) 3.0</p> <p>PWS 340 - Genetics 3.0</p> <p><b>REQUIREMENT 2</b> Complete 10 courses</p> <p><b>PROGRAM COURSES:</b></p> <p>MMBIO 405 - Basic Laboratory Operations in Medical Laboratory Science 2.0</p> <p>MMBIO 406 - Clinical Chemistry 4.0</p> <p>MMBIO 407 - Clinical Microbiology 4.0</p> <p>MMBIO 409 - Hematology 3.0</p> <p>MMBIO 410 - Hematology Laboratory 2.0</p> <p>MMBIO 411 - Molecular Diagnostics 3.0</p> <p>MMBIO 412 - Immunohematology 4.0</p> <p>MMBIO 418 - Medical Parasitology 2.0</p> <p>MMBIO 419 - Clinical Parasitology Laboratory 1.0</p> <p>MMBIO 491 - Concept Applications in Laboratory Medicine 1.0</p> <p><b>REQUIREMENT 3</b> Complete 2.0 hours from the following course(s)</p> <p><b>COMPLETE AN INTERNSHIP EXPERIENCE. DURING ONE SEMESTER AND ONE TERM, COMPLETE AT LEAST 2 HOURS FROM THE FOLLOWING:</b></p> <p>MMBIO 496R - Clinical Experience 12.0v</p> <p style="padding-left: 20px;"><i>You may take up to 2 credit hours.</i></p> <p><b>REQUIREMENT 4</b></p> <p>Complete an exit interview.</p> <p><b>REQUIREMENT 5</b></p> <p>Pass the BYU comprehensive exam offered during the clinical experience.</p> <p><b>RECOMMENDED</b> Complete 2 courses</p> <p><b>ALTHOUGH NOT REQUIRED, THESE COURSES ARE RECOMMENDED.</b></p> <p>ENGL 316 - Technical Communication 3.0</p>	<p style="text-align: right;">STAT 121 - Principles of Statistics 3.0</p> <p><b>THE DISCIPLINE:</b></p> <p>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).</p> <p><b>OBJECTIVE:</b></p> <p>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:</p> <p>a. Communication to enable consultative interactions with members of the healthcare team, external relations, customer service, and patient education;</p> <p>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)</p> <p>c. Information management to enable effective, timely, accurate, and cost-effective reporting of laboratory-generated information, and;</p> <p>d. Research design/practice sufficient to evaluate published studies as an informed consumer.</p>	<p><b>CAREERS:</b></p> <p>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</p> <p>See faculty advisor for additional career choices.</p> <p><b>HONORARY SOCIETIES AND CLUBS:</b></p> <p>The student chapter of the Utah Society for Clinical Laboratory Science provides opportunity for fellowship and professional association.</p> <p><b>FINANCING:</b></p> <p>An endowed scholarship is available to students in clinical laboratory science. Recipient is selected by CLS faculty after program admission. No application is necessary.</p> <p><b>MAP DISCLAIMER</b></p> <p>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.</p> <p><b>DEPARTMENT INFORMATION</b></p> <p><b>Microbiology and Molecular Biology</b> Brigham Young University 4007 Life Sciences Building Provo, UT 84602 Telephone: (801) 422-2889</p>
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## **BS in Medical Laboratory Science (285220)**

2018-2019

### **ADVISEMENT CENTER INFORMATION**

#### **Life Sciences Advisement**

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Provo, UT 84602  
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