

## B. S. IN BIOLOGY: MEDICAL LABORATORY SCIENCE CONCENTRATION

Fall 2018 – Spring 2019

REQUIREMENT	COURSE	CREDITS	TERM	YEAR	GRADE
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### I. ACADEMIC FOUNDATIONS (18 credits)

Effective Writing I	WRT 120	3	_____	_____	_____
Writing II	WRT ____*	3	_____	_____	_____
Statistics	MAT 121	3	_____	_____	_____
Communication	SPK ____*	3	_____	_____	_____
Diverse Communities (“J”)	_____	3	_____	_____	_____
Interdisciplinary (“I”)	_____	3	_____	_____	_____

### II. LIBERAL ARTS DISTRIBUTIVE REQUIREMENTS (*Approved courses only*)

No course that carries the Interdisciplinary attribute (“I” course) may be used to fulfill any of these requirements, even if it carries a LIT, GEO, MHL, etc. prefix.

#### A. Approved courses in the **Humanities** (6 credits)

Select courses from at least 2 of the following areas.

Literature (LIT/CLS)	History (HIS)	Philosophy (PHI)
_____	3	_____
_____	3	_____

#### B. Approved courses in the **Behavioral and Social Sciences** (6 credits)

Select courses from at least 2 of the following areas.

Anthropology (ANT)	Psychology (PSY)	Sociology (SOC)
Economics (ECO)	Geography (GEO)	Government (PSC)
_____	3	_____
_____	3	_____

Students taking the MCAT should take at least one semester of psychology and one semester of sociology.

#### C. Approved courses in the **Arts** (3 credits)

Select a course in Art, Cinematography, Dance, Music, Photography, or Theatre.

_____	3	_____
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Note: Biology majors will fulfill their distributive requirements in the Sciences with

CHE 103 and PHY 130/170. These courses are listed under Supporting Courses.

**III. DIRECTED ELECTIVES** – 9-10 credits (as many as needed to reach 120 credits at graduation)

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**IV. SUPPORTING COURSES** (28-29 credits)

Calculus ***	MAT _____	3/4	_____	_____	_____
General Chemistry I	CHE 103	3	_____	_____	_____
Exp. General Chemistry I	CRL 103	1	_____	_____	_____
General Chemistry II	CHE 104	3	_____	_____	_____
Exp. General Chemistry II	CRL 104	1	_____	_____	_____
Organic Chemistry I	CHE 231	4	_____	_____	_____
Exp. Organic Chemistry I	CRL 231	2	_____	_____	_____
Organic Chemistry II	CHE 232	3	_____	_____	_____
General Physics I ****	PHY 130	4	_____	_____	_____
or Physics I	PHY 170	4	_____	_____	_____
General Physics II	PHY 140	4	_____	_____	_____
or Physics II	PHY 180	4	_____	_____	_____

**V. Biology Courses** (49 credits) Must have 2.0 to graduate.

A. Required courses (27 credits)

General Biology **	BIO 110	3	_____	_____	_____
General Microbiology**	BIO 214	4	_____	_____	_____
Botany *** or Zoology**	BIO 215/217	3	_____	_____	_____
Cell Physiology **	BIO 220	3	_____	_____	_____
Genetics **	BIO 230	3	_____	_____	_____
Immunology**	BIO 465	4	_____	_____	_____
Seminar**	BIO 490	3	_____	_____	_____

❖ Internship in Medical Laboratory Science\*\*

BIO 407-408	26	_____	_____	_____
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**VI. Writing Emphasis** See college catalog for details.

<u>BIO 220</u>	_____	_____	_____	_____
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\*One at 300/400-level:

_____	_____	_____	_____	_____
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Total degree program: 120 credits.

## **Requirements**

\* Courses in Communications, second WRT course, and Calculus must be selected with the approval of the advisor. Approved Communication courses are SPK 199 (for transfer students only), 208, or 230. Approved WRT courses are 200, 204, 205, 206, 208, or 220.

\*\* Course must be passed with a "C-" or better.

\*\*\* The Biology department recommends MAT 145 (Calculus for the Life Sciences; 3 credits) or MAT 161 (Calculus I; 4 credits). MAT 143 (Brief Calculus; 3 credits) is also acceptable. You must meet the necessary pre-requisites or obtain a minimum score on the Math Placement Exam to enroll in a calculus class. Visit the Math Department website to take the exam. If you receive a score of 3 or lower on the placement exam, you must take MAT 115 (Algebra, Functions, and Trigonometry) or MAT 131 (Precalculus) as preparation for Calculus (MAT 143 or MAT 145). If you receive a score of 4 or above, you can enroll directly into MAT 143 or MAT 145. You must score a 5 to enroll into MAT 161 or take the pre-requisite of MAT 131.

\*\*\*\* The recommended Physics sequence is PHY 130 & PHY 140. Students may substitute the PHY 170 & PHY 180 sequence, but PHY 130 may not be used as a prerequisite for PHY 180 and PHY 170 may not be used as a prerequisite for PHY 140.

❖ To qualify for the internship, students must have a minimum 2.75 GPA and be accepted by an accredited hospital Medical Laboratory Science program. Applications should be submitted by the summer of the junior year (60 credits completed). Internships are very competitive and acceptance depends on the cumulative GPA, excellent letters of recommendation and successful completion of an on site interview. Please note that some programs require computer science or Anatomy and Physiology courses. Please see **Dr. Pisciotta** for any questions about applying for this internship.

All students entering WCU Fall of 1980 or later must take at least three approved Writing Emphasis courses, totaling at least 9 credits; students who enter with 40-70 transfer credits need only 2, and a minimum of 6 credits; students who enter with more than 70cr. only need one course (at least 3 credits). **At least 1 Writing Emphasis course must be taken at the 300 or 400 level for all students.**

A maximum of 8 combined credits from BIO 409 & 491 may be applied to total Biology credits.

Some Medical Laboratory Science programs require a course in computer science. Consult with **Dr. Pisciotta**.

## Suggested Sequence for B.S. Biology Majors

### Medical Laboratory Science Concentration

Fall 2018 – Spring 2019

_____	<b>Semester #1 (16 credits)</b> WRT 120 (3) _____ BIO 110 (3) _____ CHE 103/CRL 103 (3)/(1) _____ MAT 121 (3) or MAT 143, 145, 161 _____ Social Science #1 (3)	_____	<b>Semester #2 (16 credits)</b> WRT 2 ____ (3) _____ BIO 215 or 217 (3) _____ CHE 104/CRL 104 (3)/(1) _____ MAT 121 (3) or MAT 143, 145, 161 _____ Elective (3)
_____	<b>Semester #3 (16 credits)</b> BIO 214 (4) _____ CHE 231/CRL 231 (4)/(2) _____ SPK 208 or 230 (3) _____ Humanities #1 (3)	_____	<b>Semester #4 (15 credits)</b> BIO 220 (3) _____ BIO 230 (3) _____ CHE 232 (3) _____ Humanities #2 (3) _____ Social Science #2 (3)
_____	<b>Semester #5 (17 credits)</b> PHY 130/170 (4) _____ BIO 465 (4) _____ Art (3) _____ Diversity (J) Course (3) _____ Interdisciplinary (I) Course (3)	_____	<b>Semester #6 (16 credits)</b> PHY 140/180 (4) _____ BIO 490 (3) _____ Free Elective (3) _____ Free Elective (3) _____ Free Elective (3)
_____	<b>Semester #7 (13 credits)</b> BIO 407	_____	<b>Semester #8 (13 credits)</b> BIO 408

An average of 16 credits per semester must be completed to enter the Medical Laboratory Science training in the 4<sup>th</sup> year. If a student follows the proposed outline of courses, a total of 94 credits will be earned at WCU. The additional 26 credits necessary for graduation will be earned at the affiliated hospital.