ADVISING SHEET:
B. S. IN BIOLOGY: MEDICAL LABORATORY SCIENCE CONCENTRATION

Fall 2025 – Spring 2026

I. ACADEMIC FOUNDATIONS & DEGREE REQUIREMENTS

Requirement	*Course*	*Credits*	*Term*	*Year*	*Grade*
First Year Experience	FYE 100	4			
Effective Writing I	WRT 120 or 123	3			
Effective Writing II	WRT 200	3			
Mathematics: Statistics	MAT 121♠ or 125♠	3			
Interdisciplinary ("INT")		3			
Diverse Communities ("DIV")	♥	3			
Ethics ("ETH")	♥	3			

Writing Emphasis ("WRT") *Nine credits♣, integrated across General Education & Major courses.*

	BIO 211	4			
One at 300/400-level:					

Speaking Emphasis ("SPE") *Nine credits♣, integrated across General Education & Major courses.*

One at 300/400-level:	BIO 490/491/492	3			

II. GENERAL EDUCATION DISTRIBUTIVE REQUIREMENTS

- *Courses must be selected from the approved General Education list (see the catalog).*
- *Interdisciplinary courses cannot also be a General Education distributive course.*
- *Biology majors fulfill their science requirements with CHE 103 and PHY 130/170.*
- *Distributive requirements can be simultaneously satisfied with other degree requirements, see some examples♦.*

A. **Behavioral and Social Sciences** (6 credits): E.g., Psychology (PSY), Sociology (SOC), Anthropology (ANT), Political Science (PSC), Geography (GEO), Economics (ECO)

Courses must be selected from two different subject areas.
Note: Students taking the MCAT should take PSY 100 and SOC 100.

	3				
	3				

B. Humanities (6 credits): E.g., Literature (LIT/CLS), History (HIS), Philosophy (PHI)

Courses must be selected from two different subject areas.

	3				
	3				

C. **Arts** (3 credits): E.g., Art (ART), Art History (ARH), Dance (DAN), Film (FLM), Music (MHL, MTC), Theater (THA)

	3				

III. DIRECTED ELECTIVES – 6 credits (as many as needed to reach 120 total credits)

_____	____	_____	_____	_____	
_____	____	_____	_____	_____	

IV. SUPPORTING COURSES (28-29 credits)

Calculus♠**	MAT 143/145/161	3-4	_____	_____	_____
General Chemistry I Lecture	CHE 103	3	_____	_____	_____
General Chemistry I Lab	CRL 103	1	_____	_____	_____
General Chemistry II Lecture	CHE 104	3	_____	_____	_____
General Chemistry II Lab	CRL 104	1	_____	_____	_____
Organic Chemistry I Lecture	CHE 231	4	_____	_____	_____
Organic Chemistry I Lab	CRL 231	2	_____	_____	_____
Organic Chemistry II Lecture	CHE 232	3	_____	_____	_____
General Physics I – lecture + lab**	PHY 130 + PHY 130L	4	_____	_____	_____
General Physics II – lecture + lab**	PHY 140 + PHY 140L	4	_____	_____	_____

V. BIOLOGY COURSES (53 credits) -- GPA must be 2.0 or higher to graduate.

A. *Required Core Courses* (19 credits)

General Biology I – lecture + lab***	BIO 110 + BIO 110L	4	_____	_____	_____
General Biology II – lecture + lab***	BIO 111 + BIO 111L	4	_____	_____	_____
Genetics Lecture***	BIO 210	3	_____	_____	_____
Genetics Lab***	BIO 210L	1	_____	_____	_____
Cell Biology – lecture + lab***	BIO 211 + BIO 211L	4	_____	_____	_____
Biology Capstone***△	BIO 490 + BIO 490S *or* BIO 491 *or* BIO 492	3	_____	_____	_____

B. *Other Required Courses* (34 credits)

General Microbiology – lecture + lab***	BIO 214 + BIO 214L	4	_____	_____	_____
Immunology – lecture + lab***	BIO 465 + BIO 465L	4	_____	_____	_____
Internship in Medical Laboratory Sci.***	BIO 407 + BIO 408	26	_____	_____	_____

Notes and Requirements

Total degree program: 120 credits.

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

♥ The Diverse Communities ("DIV") course and the Ethics ("ETH") courses can be satisfied through another requirement (e.g., General Education Distributive) as long as the course carries the appropriate attribute(s). *Note*: Credits are not duplicated such that if a course satisfies two requirements, those credits must be made up via directed electives (the minimum total credits for a B.S. degree is 120).

♣ Students must take at least 9 credits of Writing Emphasis courses and 9 credits of Speaking Emphasis courses. Students who enter WCU with 30-60 transfer credits only need 6 credits of each; students who enter with 61-90 transfer credits only need 3 credits of each. **All students with < 91 transfer credits must take at least 3 credits of Writing Emphasis and 3 credits of Speaking Emphasis at the 300-400 level.** Students who enter WCU with > 90 transfer credits are exempt from all Writing and Speaking Emphasis courses.

♦ Students should think about how requirements can be simultaneously satisfied. As examples: LNC 110 is a Humanities distributive that satisfies the Ethics requirement; PHI 180 is a Humanities distributive that satisfies the Diverse Communities & Ethics requirements; LIT 165 is a Humanities distributive that is also Writing Emphasis; PSC 101 is a Behavioral & Social Science distributive that satisfies the Diverse Communities requirement.

♠ All students will need to complete the Math Placement Exam before they can enroll in MAT courses. For information, please visit the Math Department website. Please direct any questions to mathexam@wcupa.edu.

* 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 60 or lower on the exam, you must take MAT 113 (Algebra and Functions) or MAT 115 (Algebra, Functions, and Trigonometry) as preparation for Calculus (MAT 143 or MAT 145). If you score a 44 or lower, you will need to take MAT 112 (Algebra and Functions with Support) before you can enroll in MAT 113 or MAT 115. If you score 29 or lower, you will need to take MAT Q30 before you can enroll in MAT 112. If you receive a score of 61 or above, you can enroll directly into MAT 143 or MAT 145. You must score a 75 or above to enroll into MAT 161 or take the pre-requisite of MAT 131. Students can repeat the math placement exam to improve their score.

** 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.

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

❖ 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.

△ Students may only do one Capstone course (BIO 490/491/492). Students taking BIO 490/491/492 must be aware that they are fulfilling a Capstone requirement, the credits will not also count as elective credits. A maximum of 3 combined credits from BIO 391 and BIO 392 may be applied to the total Directed Elective credits for the Medical Laboratory Sciences concentration.

Suggested Sequence for B.S. Biology Majors

Medical Laboratory Science Concentration

Fall 2025 – Spring 2026

	Semester #1 (15 credits)		**Semester #2 (17 credits)**
____	FYE 100 (4)	____	WRT 200 (3)
____	WRT 120 (3)	____	BIO 111 + 111L (4)
____	BIO 110 + 110L (4)	____	CHE 104 (3) & CRL 104 (1)
____	CHE 103 (3) & CRL 103 (1)	____	MAT 121 or MAT 125 (3)
		____	Gen Ed Distributive: Behavioral & Social Science (3)
	Semester #3 (16 credits)		**Semester #4 (17-18 credits)**
____	BIO 210 (3) & BIO 210L (1)	____	BIO 211 + 211L (WRT) (4)
____	CHE 231 (4) & CRL 231 (2)	____	BIO 214 + 214L (4)
____	Gen Ed Distributive: Arts (3)	____	CHE 232 (3)
____	Gen Ed Distributive: Humanities & Ethics Course (ETH) (3)	____	MAT 145 (3) or MAT 143 (3) /161 (4)
		____	Gen Ed Distributive: Behavioral & Social Science (3)
	Semester #5 (17 credits)		**Semester #6 (16 credits)**
____	BIO 465 + 465L (4)	____	BIO 490/491/492 (SPE) (3)
____	PHY 130 + 130L (4)	____	PHY 140 + 140L (4)
____	Diverse Communities Course (DIV) (3)	____	Directed Elective (3)
____	Interdisciplinary Course (INT) (3)	____	Speaking Emphasis Course (SPE) (3)
____	Upper-level Directed Elective (WRT)(3)	____	Gen Ed Distributive: Humanities (3)
	Semester #7 (13 credits)		**Semester #8 (13 credits)**
____	BIO 407	____	BIO 408

- An average of 16 credits per semester must be completed to enter the Medical Laboratory Science training in the 4th 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.
- All required 200 level Biology courses should be completed by the end of Semester #4.
- Students should take Statistics (MAT 121 or 125) in the first year.
- Students may choose to take MAT 145, 143 or 161 Semester 4.
- Students must take at least 9 credits of Writing Emphasis courses and 9 credits of Speaking Emphasis courses. Students who enter WCU with 30-60 transfer credits only need 6 credits of each; students who enter with 61-90 transfer credits only need 3 credits of each. **All students with < 91 transfer credits must take at least 3 credits of Writing Emphasis and 3 credits of Speaking Emphasis at the 300-400 level.** Students who enter WCU with > 90 transfer credits are exempt from all Writing and Speaking Emphasis courses.