



## MEDICAL LABORATORY SCIENCE MAJOR

Four-year plan for students starting in odd years

**This is a suggested program guide. It is not to be interpreted as a contract. Changes may occur. Please see your program advisor before you register for courses.**

Updated 9/23

YEAR	FALL	SPRING
First Year	BENV100 Becoming a Scholar 3 Writing Well Competency 3 <b>BIO 230 Human Anatomy &amp; Physiology 1*</b> 4 <b>CEM 121 General Inorganic Chemistry 1</b> 5 Total 15	Understanding Self and Society Competency 3 Reading the Bible Competency 3 <b>BIO 231 Human Anatomy &amp; Physiology 2</b> 4 <b>CEM 122 General Inorganic Chemistry 2</b> 5 Total 15
Second Year	BENV200 Learning in Community 5 Living Well Competency 2-3 <b>CEM 221 Organic Chemistry 1</b> 4 <b>BIO 303 Genetics (offered even years only)**</b> 4 Total 15-16	BENV300 Cross-cultural Experience 3 Creative Expression Competency 3 <b>CEM 222 Organic Chemistry 2</b> 4 <b>BIO 301 Microbiology</b> 4 Total 14
Third Year	Religious Understanding Competency 3 Speaking and Listening Competency 3 <b>BUS/PSY/SOC 284 General Statistics***</b> 3 <b>BIO 335 Cell Biology</b> 4 (Electives 0-4) Total 13-17	BENV400 Christian Values in a Global Community 2 Exploring the Past Competency 3 <b>BIO 315 Immunology (offered even years only)**</b> 3 (Electives 4-9) Total 12-17
Fourth Year	<b>NAACLS-Accredited West Central Ohio Medical Laboratory Science Program (WCOMLS) at ONU****:</b>  <b>MLS 4601 Foundations of MLS</b> 3 <b>MLS 4621 Biological Fluids</b> 4 <b>MLS 4641 Hematology &amp; Hemostasis</b> 4 <b>MLS 4651 Blood Banking &amp; Transfusion Science</b> 4 Total 15	<b>CEM 341 Biochemistry (offered odd years only)**</b> 3  <b>NAACLS-Accredited West Central Ohio Medical Laboratory Science Program (WCOMLS) at ONU:</b>  <b>MLS 4611 Professional Practice &amp; Development</b> 3 <b>MLS 4661 Medical Chemistry</b> 4 <b>BIOL 3201 Immunology Laboratory</b> 1 <b>BIOL 4961 Clinical Microbiology Laboratory</b> 1 <b>MLS Enrichment Course*****</b> 3 Total 15

Fourth Year <b>SUMMER - WCOMLS Clinical Courses Taken at Clinical Sites in Ohio or Indiana:</b>	
<b>MLS 4691 Medical Hematology Practicum</b>	4
<b>MLS 4701 Blood Bank Practicum</b>	4
<b>MLS 4711 Medical Chemistry Practicum</b>	3
<b>MLS 4721 Medical Microbiology Practicum</b>	4
<b>MLS 4921 Capstone Experience</b>	1
<b>MLS 4941 Capstone Seminar</b>	1
Total	17

ASCP Board of Certification Exam  
<https://www.ascp.org/content/Board-of-Certification#> is taken within 3 months of graduation.

\*To be admitted into BIO 230 during the first year, students must have completed a high school chemistry and a high school biology course with grades of B or better (or college equivalent courses with C or better). Rare exceptions to this rule will be considered on a case-by-case basis.

\*\*Alternate year courses. Even/odd designation refers to calendar year (NOT to the year in which the academic year began).

\*\*\*MAT 340 Probability and Statistics (3 hours – offered spring semesters) is an allowable substitution for General Statistics, but it requires the advanced math prerequisite courses MAT 135 Calculus 1, MAT 136 Calculus 2, and MAT 225 Multivariate Calculus that are not required for the MLS major. Please discuss this option with your advisor if you plan to take additional math courses.

\*\*\*\*Application to the West Central Ohio Medical Laboratory Science Program (WCOMLS) housed on the campus of Ohio Northern University, Ada, OH, must be made during the spring semester of the junior year (<https://www.onu.edu/academics/medical-laboratory-sciences>). Applications are typically due by 4:00 p.m. on March 1. The ONU program is accredited by The National Accrediting Agency for Clinical Laboratory Sciences (NAACLS) (<https://naacls.org/Home.aspx>). Application to the WCOMLS program requires a 2.8 minimum overall college GPA, with a 3.0 minimum in science-related courses. Bluffton students not granted admittance to the WCOMLS program during their junior year will need to work closely with their advisor to plan senior year courses and will most likely need to complete a biology major during their senior year.

\*\*\*\*\*MLS Enrichment Course options include BIOL 3231 Introduction to Virology (spring, even years), BIOL 3251 Pharmacology (spring, odd years), BIOL 3621 Parasitology (spring, even years), BIOL 3921 Practical Toxicology, or PLSC 2601 Health Policy. See your advisor for more information.

**Boldface** print denotes major course requirements.

Total hours needed to complete graduation requirements are 124. (This includes 2 hours of Arts and Lecture credit.)

Suggested elective courses at Bluffton include MAT 135 Calculus 1 (5 hours – offered every semester), NTR 225 Fundamentals of Nutrition (3 hours - offered fall semesters), NTR 340 Human Pathophysiology (3 hours - offered spring semesters), BIO 205 Invertebrate Zoology (4 hours – offered spring semesters of even years), or PHY 211 Physics for Science/Engineering 1 (5 hours – offered fall semesters).

**Note:** This plan assumes that Scientific Inquiry and Critical Analysis competencies are met by the major. The Writing Well competency should be completed in the first year. The Reading the Bible competency should be completed prior to the Religious Understanding competency. The timing of the remaining competencies is flexible and may be adjusted to accommodate desired elective courses.