

Pre-Medical Laboratory Science Program in the Biology Department at Winthrop University

INTRODUCTION

A medical laboratory scientist (also known as a medical technologist) is a healthcare professional who performs medical laboratory tests using a wide variety of instruments, microscopes, computers, chemicals, or other methods for clinical analysis to detect, diagnose, monitor and treat disease. Several local schools of Medical Laboratory Science (MLS) offer the program including Lexington Health Center (Columbia, SC), the McLeod School of Medical Technology (Florence, SC), Prisma Health (Columbia, SC) and the Carolinas College of Health Sciences (Charlotte, NC). The program is a 12-month program for applicants who have a bachelor's degree, preferably in a science. Experienced faculty members teach students the skills and theory needed to be a medical laboratory scientist. Upon successful completion of the program, students will possess entry-level competencies of a medical laboratory scientist and are eligible to sit for the American Society of Clinical Pathologists (ASCP) national certification exam.

****NOTE:** There is a new Winthrop MLS program offered through a partnership with Carolina College of Health Science where students can complete the MLS program while finishing their BS in Biology (see Combined BS in Biology with MLS Certification advising sheet).

Admission to most programs require a BS in Biology, Chemistry or related science and a GPA overall of 2.75 on a 4.0 scale and a 3.0 GPA in science-related courses is preferred. In addition, students interested in pursuing a career as a MLS should ensure that they complete the prerequisites listed below. Both the GPA and prerequisites may vary slightly, depending on the school, so applicants are encouraged to research this and/or speak with the MLS advisor.

COURSEWORK

The following are only guidelines; students should consult their advisors and programs of interest to plan their academic schedule. Most programs require at least 16 hours of Biology, 16 hours of Chemistry and 6 hours of Math.

Biology:

General Biology I and II with labs (BIOL 220/222 or 220/270 and 221/223 or 221/271)

Microbiology **with lab** (BIOL 310)

Genetics (BIOL 316/317)

Human Anatomy (BIOL 307)

Cell Biology (BIOL 315/320, prerequisite for Immunology)

Immunology (BIOL 522)

Chemistry:

1. General Chemistry I and II with lab (9 credits: CHEM 201, CHEM 202/204). All students take these, then:
2. a) Organic Chemistry I (4 credits: CHEM 301 **or** CHEM 310/311), and Organic Chemistry II with lab (4 credits: CHEM 302/304). TOTAL credits = 17 (8 are upper level)

Or

- b) A combination of Organic Chemistry and Biochemistry such as CHEM 301 (Organic I - 4 credits) **or** CHEM 310/311 (Essentials of Organic Chemistry and Lab – 3 + 1 credits). Followed by CHEM 323 (Introduction to Biochemistry - 3 credits). TOTAL credits = 16

NOTE: some MLS programs require 8hrs of upper level chemistry. Always check the MLS Program requirements.

Math:

Mathematics (MATH 150/151)

Statistics (MATH 241)

Recommended Additions:

Human Physiology (BIOL 308)

Computer Science (CSCI 101 + CSCI 101A + CSCI 101B + CSCI 101C)

Health Care Management (HCMT 200 and HCMT 300)