“Clinical laboratory science professionals (also called medical laboratory scientists or medical laboratory technicians) are highly skilled scientists who discover the presence or absence of disease and provide data that helps physicians determine the best treatment for the patient. Although they are not often personally involved with patients, laboratory technologists and technicians play a crucial role in the process of providing personalized care. They generate vitally important data for identifying and treating cancer, heart disease, diabetes and many other health conditions.

Using sophisticated biomedical instrumentation and technology, as well as highly skilled manual techniques, clinical laboratory professionals examine and analyze body fluids, tissues and cells, as well as identify infective microorganisms. They analyze the chemical constituents of body fluids, identify blood clotting abnormalities, cross-match donor blood for transfusions and test blood for drug levels to measure the efficacy of particular treatments. They also evaluate test results for accuracy and help interpret them for the physician.

Medical laboratory technicians (MLT) and clinical laboratory technicians (CLT) have associate degrees, while medical laboratory scientists (MLS) have baccalaureate degrees. Much of the laboratory work performed by these professionals is the same, but laboratory technicians focus on collecting, processing and analyzing biological specimens; performing laboratory procedures; maintaining instruments; and relating findings to common diseases or conditions.

Medical laboratory scientists have many similar responsibilities, but because they have a more extensive theoretical knowledge base, they conduct more advanced testing, such as molecular diagnostics and highly involved microbiological and cross-matching blood tests. They also evaluate and interpret laboratory results, integrate data, solve problems, consult with physicians, conduct research and evaluate new test methods. Medical laboratory scientists also are more likely to advance to management positions.

For more information about pursuing a health career in this field, see the American Society for Clinical Laboratory Science website (http://www.ascls.org).” This information was taken from: http://explorehealthcareers.org/en/Career/28/Clinical_Laboratory_ScientistTechnician

At MTSU there are two programs you may follow leading to a degree in Science, with emphasis in Medical Technology. These are:

**A 3 + 1 PROGRAM:** This program involves three years (equivalent to ninety semester hours) of coursework at MTSU in the Pre Medical Technology curriculum and one year (equivalent to thirty semester hours) of coursework at a nationally approved Medical Technology program. Upon successful completion of at least one year of study in a nationally approved Medical Technology program, a Bachelor of Science in Health Science degree is awarded by MTSU. Approved Medical Technology programs in Tennessee may be found at Austin Peay State University and Vanderbilt University.

**A 2 + 2 PROGRAM:** This program involves two years of study at MTSU followed by two years in a Medical Technology program. In Tennessee, the school offering this program is at The University of Tennessee Health Science Center in Memphis.
## 3 + 1 PRE MEDICAL TECHNOLOGY SUGGESTED CURRICULUM
(For students interested in the programs at Vanderbilt and Austin Peay)

### First Year Fall
- ENGL 1010 Expository Writing 3 hrs
- CHEM 1110/1111 General Chemistry I* 4 hrs
- BIOL 1110/1111 General Biology 1 4 hrs
- MATH 1710 College Algebra 3 hrs
- Elective 1 hr 15 hrs

### First Year Spring
- ENGL 1020 Research and Argumentative Writing 3 hrs
- CHEM 1120/1121 General Chemistry II 4 hrs
- BIOL 1120/1121 General Biology II 4 hrs
- PHYS 2010/2011 Non Calculus Based Physics I** 4 hrs 15 hrs

### Second Year Fall
- CHEM 3010/3011 Organic Chemistry I 4 hrs
- BIOL 2230/2231 Microbiology 4 hrs
- HUM General Education Elective 3 hrs
- Literature General Education Elective 3 hrs
- Elective 1 hr 15 hrs

### Second Year Spring
- CHEM 3020/3021 Organic Chemistry II 4 hrs
- BIOL 3250/3251 Genetics 4 hrs
- Social/Behavioral General Education Elective 3 hrs
- US History General Education Elective 3 hrs
- Elective 1 hr 15 hrs

### Third Year Fall
- CHEM 3530/3531 Principles of Biochemistry 4 hrs
- BIOL 4300/4301 Immunology 4 hrs
- BIOL 2000/2001 Orientation to the Medical Lab 2 hrs
- Social/Behavioral General Education Elective 3 hrs
- COMM 2200 Fundamentals of Communication 3 hrs 16 hrs

### Third Year Spring
- BIOL 4110/4111 General Physiology 4 hrs
- BIOL Upper Division Elective*** 4 hrs
- HUM General Education Elective 3 hrs
- US History General Education Elective 3 hrs 14 hrs

For the remaining two semesters, the student must complete one year in a Medical Technology program at a nationally accredited school approved by MTSU.

Notes:
*Students with a weak chemistry background should take CHEM 1010/1011 Introduction to General Chemistry before CHEM 1110/1111.

**PHYS 1110 Discovering Physics may be taken lieu of PHYS 2010/2011.

***See advisor for Recommended Biology electives. Courses to consider include BIOL 3050/3051 Parasitology, BIOL 4130/4131 Histology, BIOL 4170/4171 Endocrinology, BIOL 4210/4211 Cell & Molecular Biology, BIOL 4430/4431 Diagnostic Microbiology, BIOL 4550 Biotechnology, and BIOL 4570/4571 Principles of Toxicology.
# 2 + 2 PRE MEDICAL TECHNOLOGY SUGGESTED CURRICULUM
(For students interested in the program at the UT Health Science Center in Memphis)

<table>
<thead>
<tr>
<th>First Year Fall</th>
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<th>First Year Spring</th>
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<tbody>
<tr>
<td>ENGL 1010 Expository Writing</td>
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<td>ENGL 1020 Research and Argumentative Writing</td>
</tr>
<tr>
<td>CHEM 1110/1111 General Chemistry I*</td>
<td>4 hrs</td>
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<tr>
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<tr>
<td>MATH 1710 College Algebra</td>
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<td>4 hrs</td>
<td>CHEM 3020/3021 Organic Chemistry II</td>
</tr>
<tr>
<td>BIOL 2230/2231 Microbiology</td>
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<td>COMM 2200 Fundamentals of Communication</td>
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<td><strong>Total:</strong></td>
<td><strong>16 hrs</strong></td>
<td><strong>HUM 2130 Medical Vocabulary</strong></td>
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</table>

**Notes:**
*Students with a weak chemistry background should take CHEM 1010/1011 Introduction to General Chemistry before CHEM 1110/1111.*

**General Information:**
The third and fourth years of this four year program are spent at The University of Tennessee Health Science Center in Memphis. Upon completion of this program students will earn a Bachelor of Science in Medical Laboratory Science from the University of Tennessee.

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For more information please see your Advisor in the Pre Professional Health Science Advising Center in KUC 316 or email preprof@mtsu.edu.

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