MEDICAL LABORATORY TECHNOLOGY, A.S.

Begin Campus: Hazleton, Schuylkill
End Campus: Hazleton

Program Description
This two-calendar-year Medical Laboratory Technology major (four semesters, two summer sessions) is designed to provide the necessary general and technical training for hospital personnel between the level of the medical laboratory technician (certificate program) and the medical technologist (baccalaureate program). The course of study includes one year of intensive clinical experience at an affiliated hospital and the theoretical background necessary for the clinical procedures performed by the certified medical laboratory technician (associate degree program). Upon completion of program requirements, the student receives the associate degree and is eligible to sit for examinations leading to certification and registry as a medical laboratory technician.

The Medical Laboratory Technology Program at Penn State Hazleton is fully accredited by the National Accrediting Agency for Clinical Laboratory Sciences.

NAACLS,
5600 N. River Rd, Suite 720,
Rosemont, IL 60018-5119,
Phone 773-714-8880
Website: http://www.naacls.org

Graduates of this accredited MLT program are eligible to take national certification examinations such as the American Society of Clinical Pathology (ASCP) Board of Certification exam, to become certified as an MLT (ASCP).

What is Medical Laboratory Technology?
A Medical Laboratory Technician (MLT) works with a team of pathologists, technologists, and technicians to analyze patient samples to provide information to the patient’s physician to detect illness, enable treatment, and ensure that the treatment will benefit the patient. The MLT works in all areas of the medical laboratory such as microbiology, chemistry, hematology, and transfusion services. MLTs are qualified to perform routine tests as well as more complex procedures including analyzing blood for chemical components, typing blood to ensure safe transfusion, and identifying bacteria and other microorganisms. MLTs also prepare specimens for examination, count cells, and look for abnormal cells in blood and body fluids. They use microscopes, cell counters, and automated equipment and computerized instruments to test specimens. After testing and verifying the results, they relay the results to physicians.

MORE INFORMATION (http://hazleton.psu.edu/associate-science-medical-laboratory-technology)

You Might Like This Program If...
You might like this major if you are interested in science and enjoy working in a laboratory setting. MLTs are problem solvers and are accurate and reliable. They want to help patients in a medical setting but prefer not to have direct patient contact. They enjoy working with their hands and using technical instruments. Their work is interesting, challenging, and requires a love of life-long learning.

MORE INFORMATION (https://www.ascp.org/content/careers)

Entrance to Major
Students must have a minimum 2.0 GPA to change to this Associate degree after admission to the University.

Additional Information
Before beginning the clinical experience rotations at hospitals, students must meet the requirements listed at http://hazleton.psu.edu/program-clinical-prerequisites

Degree Requirements
For the Associate in Science degree in Medical Laboratory Technology, a minimum of 72 credits is required:

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Education</td>
<td>21</td>
</tr>
<tr>
<td>Requirements for the Major</td>
<td>63-65</td>
</tr>
</tbody>
</table>

Scheduling of courses in summer session depends on campus location.

General Education
Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (http://bulletins.psu.edu/undergraduate/general-education/associate-degree-general-education-program) section of the Bulletin and consult your academic adviser.

Foundations (grade of C or better is required.)
• Quantification (GQ): 3 credits
• Writing and Speaking (GWS): 3 credits

Knowledge Domains
• Arts (GA): 3 credits
• Humanities (GH): 3 credits
• Social and Behavioral Sciences (GS): 3 credits
• Natural Sciences (GN): 3 credits

Foundations or Knowledge Domains
• A General Education course selected from GWS, GQ, GN, GA, GH, or GS, and may include Integrative Studies (Inter-domain or Linked) courses: 3 credits

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

12 of the 21 credits are included in the Requirements for the Major.
### University Degree Requirements

#### Cultures Requirement
3 credits of United States (US) or International (IL) cultures coursework are required and may satisfy other requirements.

#### Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

#### Total Minimum Credits
A minimum of 60 degree credits must be earned for a associates degree. The requirements for some programs may exceed 60 credits. Students should consult with their college or department adviser for information on specific credit requirements.

#### Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

#### Limitations on Source and Time for Credit Acquisition
Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80). For more information, check the Suggested Academic Plan for your intended program.

#### Requirements for the Major
This includes 12 credits of General Education courses: 3 credits of GWS courses; 6 credits of GN courses; 3 credits of GQ courses.

To graduate, a student enrolled in the major must earn a grade of C or better in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/#83-80). For more information, check the Suggested Academic Plan for your intended program.

#### Academic Advising
The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information need to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy)

### Hazleton

**Patricia Ferry**
Assistant Teaching Professor of Medical Laboratory Technology
Kostos 120
Hazleton, PA 18202
570-450-3090
pdf1@psu.edu

### Suggested Academic Plan

#### Hazleton Campus

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 141</td>
<td>Introductory Physiology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 142</td>
<td>Physiology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 110</td>
<td>Chemical Principles I</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>Experimental Chemistry I</td>
<td>1</td>
</tr>
<tr>
<td>MICRB 201</td>
<td>Introductory Microbiology</td>
<td>3</td>
</tr>
<tr>
<td>MICRB 202</td>
<td>Introductory Microbiology Laboratory</td>
<td>2</td>
</tr>
<tr>
<td>CAS 100</td>
<td>Effective Speech</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 202</td>
<td>Fundamentals of Organic Chemistry I</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 15</td>
<td>Rhetoric and Composition</td>
<td>3</td>
</tr>
<tr>
<td>MIS 103</td>
<td>Microcomputer Applications in Business</td>
<td>3</td>
</tr>
<tr>
<td><strong>Prescribed Courses: Require a grade of C or better</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICRB 150</td>
<td>Introductory Medical Laboratory Technology</td>
<td>4</td>
</tr>
<tr>
<td>MICRB 151A</td>
<td>Clinical Chemistry for Medical Laboratory Technicians</td>
<td>5</td>
</tr>
<tr>
<td>MICRB 151B</td>
<td>Hematology for Medical Laboratory Technicians</td>
<td>5</td>
</tr>
<tr>
<td>MICRB 151C</td>
<td>Immunohematology and Serology for Medical Laboratory Technicians</td>
<td>4</td>
</tr>
<tr>
<td>MICRB 151D</td>
<td>Clinical Chemistry Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MICRB 151E</td>
<td>Hematology Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MICRB 151F</td>
<td>Immunohematology Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MICRB 151G</td>
<td>Clinical Microbiology and Body Fluid Analysis for Medical Laboratory Technicians</td>
<td>5</td>
</tr>
</tbody>
</table>

- **BIOL 110** Biology: Basic Concepts and Biodiversity
- or **BIOL 129** Mammalian Anatomy

Select one of the following: 3-5

- **MATH 21** College Algebra I
- **MATH 22** College Algebra II and Analytic Geometry
- **MATH 26** Plane Trigonometry
- **MATH 40** Algebra, Trigonometry, and Analytic Geometry
- **MATH 81** Technical Mathematics I
- **MATH 110** Techniques of Calculus I
- **MATH 140** Calculus With Analytic Geometry I
- **STAT 200** Elementary Statistics
- **STAT 250** Introduction to Biostatistics

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**Hazleton Campus**

The course series listed below provides only one of the many possible ways to move through this curriculum. The University may make changes in policies, procedures, educational offerings, and requirements at any time. This plan should be used in conjunction with your degree audit (accessible in LionPATH as either an Academic Requirements or What If report). Please consult with a Penn State academic adviser on a regular basis to develop and refine an academic plan that is appropriate for you.
First Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
<th>Summer</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ENGL 15 or 30†</td>
<td>3</td>
<td>MICRB 201</td>
<td>3</td>
<td>CHEM 2023</td>
<td>3</td>
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<tr>
<td>BIOL 110 or 129†</td>
<td>4</td>
<td>MICRB 202</td>
<td>2</td>
<td>CAS 1003 †</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 110†</td>
<td>3</td>
<td>BIOL 141</td>
<td>3</td>
<td>MICRB 1502, 3</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 108 (optional)</td>
<td>1</td>
<td>BIOL 142</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>General Education Course (GQ)†</td>
<td>3-4</td>
<td>CHEM 111</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSU 8</td>
<td>1</td>
<td>MIS 103</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td>General Education Course</td>
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</table>
Total Credits 15-16

Second Year

<table>
<thead>
<tr>
<th>Fall</th>
<th>Credits</th>
<th>Spring</th>
<th>Credits</th>
<th>Summer</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MICRB 151A2 *</td>
<td>5</td>
<td>MICRB 151C2 *</td>
<td>4</td>
<td>General Education Course4</td>
<td>3</td>
</tr>
<tr>
<td>MICRB 151B2 *</td>
<td>5</td>
<td>MICRB 151F2 *</td>
<td>2</td>
<td>General Education Course4</td>
<td>3</td>
</tr>
<tr>
<td>MICRB 151D2 *</td>
<td>2</td>
<td>MICRB 151G2 *</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MICRB 151E2 *</td>
<td>2</td>
<td>MICRB 151W2 *</td>
<td>5</td>
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</tbody>
</table>
Total Credits 14

* Course requires a grade of C or better for the major
† Course requires a grade of C or better for General Education
‡ Course is an Entrance to Major requirement
‡‡ Course satisfies General Education and degree requirement

University Requirements and General Education Notes:

US and IL are abbreviations used to designate courses that satisfy University Requirements (United States and International Cultures).

W, M, X, and Y are the suffixes at the end of a course number used to designate courses that satisfy University Writing Across the Curriculum requirement.

GWS, GQ, GN, GA, GH, and GS are abbreviations used to identify General Education program courses. General Education includes Foundations (GWS and GQ) and Knowledge Domains (GN, GA, GH, and GS). Foundations courses (GWS and GQ) require a grade of ‘C’ or better.

Integrative Studies courses can be completed for the General Education program. N is the suffix at the end of a course number used to designate an Inter-Domain course and Z is the suffix at the end of a course number used to designate a Linked course.

1 Choose one course from approved list: MATH 21, MATH 22, MATH 26, MATH 40 MATH 81, MATH 110, MATH 140, STAT 200, STAT 250

2 MICRB 150, and MICRB 151 practicum courses include experience at affiliated medical laboratory (total of 540 hours). Require admission into MLT Program.

3 These courses should be taken in summer session 1.
4 These courses should be taken in summer session 2.

Program Notes:

A minimum of 72 credits is required for graduation

Career Paths

The two-year MLT program includes a two-semester clinical practicum experience in affiliated hospital laboratories. The MLT learns the most current laboratory techniques in a real laboratory setting.

Careers

You can find a career in a hospital laboratory, food processing industry, veterinary lab, state police or federal forensics lab, public health lab, cancer clinic, chemical company, pharmaceutical company, and more. You can choose to work in a medical lab or non-medical setting.

Opportunities for Graduate Studies

If an MLT graduate chooses to continue his/her education, the first year's courses will transfer to a major in Microbiology, Medical Laboratory Science, Biology or related disciplines. Once an MLT graduate passes a national certification exam and is certified as MLT, earns a BS or BA in any major, and works in a hospital laboratory for at least two years, they can qualify to take a Medical Laboratory Scientist (MLS) certification exam. Bachelor’s degrees earned prior to MLT certification count toward the MLS qualification. This opens the door to careers as an educator, laboratory manager and specialist positions.

MORE INFORMATION (http://ascp.org/Board-of-Certification/GetCertified/#tabs-1)

Professional Resources

• American Society for Clinical Laboratory Science (http://www.ascls.org)
• American Society for Clinical Pathology (https://www.ascp.org/content)
• American Association of Clinical Chemistry (https://www.aacc.org/global-health-outreach/lab-tests-online)
• American Society of Hematology (http://www.hematology.org)
• American Association of Blood Banks (http://www.aabb.org)
• National Accrediting Agency for Clinical Laboratory Sciences (http://www.naaccsl.org)
• Centers for Disease Control and Prevention (https://www.cdc.gov)

Accreditation

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Penn State Hazleton program outcome measures are available at http://hazleton.psu.edu/program-outcome-measures
MORE INFORMATION (http://www.nacls.org)

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pdf1@psu.edu

http://hazleton.psu.edu/associate-science-medical-laboratory-technology