B.S. Medical Laboratory Science

Bachelor of Science in Medical Laboratory Science

The B.S. in Medical Laboratory Science prepares students as medical/clinical laboratory scientists or medical technologists and for graduate level programs in medical laboratory science or related disciplines. Students develop a strong background in the broad areas of microbiology, molecular biology, chemistry, hematology, transfusion medicine, biotechnology, and their medical and/or clinical applications. Medical Laboratory Science students gain the ability to carry out standard microbiological, molecular, biological and clinical techniques in the laboratory and to participate in research development, planning, and implementation. The B.S. in Medical Laboratory Science prepares students to have a reasonable expectation of passing a national qualifying exam for the medical laboratory profession and prepares students to be qualified to work at the professional experience level in a variety of settings. The General Education Requirements (http://coursecat.isu.edu/undergraduate/academicinformation/generaleducation) (all Objectives--36 credits minimum) and Total University Credit Requirements must be met. A minimum of 120 credits are required for graduation; 36 of these must be upper division credits.

A student may be awarded a B.S. degree in Medical Laboratory Science by fulfilling the following requirements:

1. Completion of the university General Education Requirements (8 out of 9 Objectives are required--see the General Education Requirements (http://coursecat.isu.edu/undergraduate/academicinformation/generaleducation) in the Academic Information section of this catalog). The following Objective courses also satisfy specific program requirements: 1) Objective 3, MATH 1153, Introduction to Statistics; 2) Objective 5 is met by the program’s biology and chemistry requirements.

2. Completion of the following required courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 1143</td>
<td>College Algebra</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 2206</td>
<td>Cell Biology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2207</td>
<td>Cell Biology Laboratory</td>
<td></td>
</tr>
<tr>
<td>BIOL 2235</td>
<td>General Microbiology</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 2235L</td>
<td>General Microbiology Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 3301</td>
<td>Advanced Human Anatomy and</td>
<td>4</td>
</tr>
<tr>
<td>&amp; BIOL 3301L</td>
<td>Physiology 1 and Advanced Human</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Anatomy and Physiology 1 Lab</td>
<td></td>
</tr>
<tr>
<td>BIOL 3358</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4451</td>
<td>Immunology</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 4463</td>
<td>Human Pathophysiology</td>
<td>3-4</td>
</tr>
<tr>
<td>or BIOL 3305</td>
<td>Introduction to Pathobiology</td>
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</tr>
</tbody>
</table>

In addition, enough additional credits of Chemistry courses to reach 16 credits of Chemistry, which may include organic, inorganic, biochemistry, and/or analytical chemistry.

3. Completion of the Medical Laboratory Science Professional degree requirements (38 credits).
4. Completion of elective courses. Elective courses should be selected according to the student’s interests and career needs, in conjunction with a faculty advisor.

The total number of elective credit hours may include course prerequisites for general education requirements.

5. Credits earned in the required prerequisites or Medical Laboratory Science professional block with a grade of lower than a “C-” will not be counted towards the Medical Laboratory Science requirement, but will be calculated in the total credit calculation toward graduation.

A minimum of 120 credits is required for graduation. Students who have completed the requirements for a B.S. degree in a related discipline at an accredited university, with preparation similar to that described above for the B.S. in Medical Laboratory Science degree may apply to the program and, if accepted, complete the Medical Laboratory Science Professional Block, which would result in the award of a second B.S. degree. Completion of the minimum of a B.S. degree and the professional block will qualify the student to sit for national certification exams. Credit may be given for experience and coursework at the discretion of the Medical Laboratory Science program director. Students whose preparation does not include the required courses listed under the B.S. in Medical Laboratory Science may be required to take additional courses outside the professional block at the discretion of the Medical Laboratory Science program director. University policy requires a minimum of 32 additional credits earned beyond the first B.S. degree in order to award a second B.S. degree. Credits used to satisfy the requirements for the first degree may not be used toward the second degree’s 32 credit requirement.

Required Courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MLS 4410</td>
<td>Phlebotomy Practicum</td>
<td>1</td>
</tr>
<tr>
<td>MLS 4412</td>
<td>Urinalysis and Body Fluids</td>
<td>1</td>
</tr>
<tr>
<td>MLS 4414</td>
<td>Hematology and Hemostasis</td>
<td>3</td>
</tr>
<tr>
<td>MLS 4416</td>
<td>Medical Microbiology I</td>
<td>3</td>
</tr>
<tr>
<td>MLS 4418</td>
<td>Medical Chemistry and Instrumentation</td>
<td>3</td>
</tr>
<tr>
<td>MLS 4420</td>
<td>Medical Immunology</td>
<td>2</td>
</tr>
<tr>
<td>MLS 4422</td>
<td>Basic Concepts in Transfusion</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Medicine</td>
<td></td>
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<tr>
<td>MLS 4424</td>
<td>Medical Laboratory Fundamentals</td>
<td>1</td>
</tr>
<tr>
<td>MLS 4431</td>
<td>Medical Microbiology II</td>
<td>3</td>
</tr>
<tr>
<td>MLS 4433</td>
<td>Medical Laboratory Science</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Management and Education</td>
<td></td>
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<tr>
<td>MLS 4435</td>
<td>Molecular Diagnosis</td>
<td>3</td>
</tr>
<tr>
<td>MLS 4437</td>
<td>Critical Analysis of Lab Information</td>
<td>3</td>
</tr>
<tr>
<td>MLS 4439</td>
<td>Advanced Concepts in Transfusion</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Medicine</td>
<td></td>
</tr>
<tr>
<td>MLS 4441</td>
<td>MLS Research</td>
<td>1-3</td>
</tr>
<tr>
<td>MLS 4455</td>
<td>MLS Student Laboratory Practices</td>
<td>2</td>
</tr>
<tr>
<td>MLS 4490</td>
<td>General Site Practicum</td>
<td>1-6</td>
</tr>
<tr>
<td>MLS 4491</td>
<td>Microbiology Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MLS 4492</td>
<td>Hematology and Urinalysis Practicum</td>
<td>2</td>
</tr>
<tr>
<td>MLS 4493</td>
<td>Transfusion Blood Bank Practicum</td>
<td>1</td>
</tr>
<tr>
<td>MLS 4494</td>
<td>Chemistry and Automation Practicum</td>
<td>1</td>
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</tbody>
</table>

Total Credits: 39-46

1 This is a 1-credit course that may be taken for up to 3 credits.
A total of 6 credits of Practicum experiences (minimum of 480 hours) is required to be eligible to take Board of Certification (BOC) national examinations. One (1) credit of Practicum experience (80 hours) is required for a B.S. in Medical Laboratory Science but the graduate will NOT be eligible for BOC national certification.