BS in Clinical Laboratory Science

The Clinical Laboratory Science Program (CLS), formerly Medical Technology, is designed to prepare graduates to function as professional members of the health care team. Their services are utilized in hospitals, clinics, and private laboratories, as well as in business and industry. Clinical Laboratory Scientists perform a variety of immunological, biochemical, molecular, and microbiological procedures that aid in the diagnosis, treatment, and prevention of disease. Computerized databases, electronic charting, and sophisticated laboratory techniques such as flow cytometry, DNA fingerprinting, PCR, and two-dimensional electrophoresis help ensure the accuracy and precision of their work. The University of Texas at El Paso’s Clinical Laboratory Science Program is accredited by the National Accrediting Agency for Clinical Laboratory Sciences (5600 N. River Rd., Suite 720, Rosemont, IL 60018-5119).

Students completing core and pre-professional courses must apply for the professional phase of the program in the spring semester. The application and application deadlines can be found on the Clinical Laboratory Science department webpage (http://www.utep.edu/chs/cls/). All prerequisite courses must be completed before entering the professional phase of the program in the fall semester. Students are not allowed to take other courses concurrently with upper division, professional-phase CLS courses. Applicants must have a minimum CGPA of 2.5 and a 2.75 GPA in math and sciences and must pass a drug screen and background check. University and clinical faculty may interview all applicants.

A limited number of clinical sites are available; therefore, students are selected in the spring semester to enter the professional phase once a year beginning in the Summer semester. Depending on the number of clinical affiliates available in any one year, a student might be required to attend clinical preceptorships outside the El Paso area at the student’s expense.

Students must complete all lower-division course work prior to enrolling in the professional Clinical Laboratory Science courses. Before enrolling in the clinical practicum, all students must show evidence of professional liability insurance, health insurance, current CPR certification, a recent physical examination, and current immunizations (titers), including hepatitis and influenza vaccinations. Some clinical affiliates may require students to provide proof of immunizations/titers for varicella, hepatitis B, measles, rubella, and rubeola, and two-step TB proof of medical insurance. To engage in clinical practicums, which are crucial to the curriculum, CLS students must undergo and pass a background check and drug screening. In addition, some clinical practicums require finger printing.

A grade of C (75%) or higher must be earned in each CLS class. If a student earns less than a C (75%), the student must withdraw from the program and reapply the following year.

All students must perform within limits of safe practice. Students who are deemed unsafe by faculty will be dropped and will receive an F in the clinical course. All work performed by students during the clinical practicum is under the direct supervision of clinical faculty and countersigned by them.

As a professional, the student must exhibit a commitment to the welfare of patients. The faculty in the program reserves the right to refuse the opportunity of a student to perform tests or procedures on patients if the student gives evidence of unsafe and/or ineffective laboratory techniques.

Students graduating from The University of Texas at El Paso are eligible to take the national certification exam from the American Society for Clinical Pathology Board of Certification (BOC). Students passing the exam can use the initials MLS after their names.

Degree Plan

Required Credits: 133

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>University Core Curriculum</strong></td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>Complete the University Core Curriculum requirements. (p. 2)</td>
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<tr>
<td></td>
<td><strong>Clinical Lab Science Prerequisites</strong></td>
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<tr>
<td></td>
<td>All CLSC courses require a C or better</td>
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<tr>
<td></td>
<td>Designated Core Courses: C</td>
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<tr>
<td>CHEM 1305 &amp;</td>
<td>General Chemistry and Laboratory for CHEM 1305</td>
<td>4</td>
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<tr>
<td>CHEM 1105</td>
<td></td>
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<tr>
<td>CHEM 1306 &amp;</td>
<td>General Chemistry and Laboratory for CHEM 1306</td>
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<td>CHEM 1106</td>
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<tr>
<td>MATH 1411</td>
<td>Calculus I</td>
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<td></td>
<td><strong>Recommended Core</strong></td>
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<tr>
<td>PHIL 2306</td>
<td>Ethics</td>
<td>3</td>
</tr>
<tr>
<td>PSYC 1301</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Program Prerequisites:</strong></td>
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<tr>
<td></td>
<td>The courses below are also prerequisite courses requiring a C or better for other courses in the CLS degree plan</td>
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</table>
BS in Clinical Laboratory Science

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BIOL 1305</td>
<td>General Biology and Topics in Study of Life I</td>
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<tr>
<td>&amp; BIOL 1107</td>
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<tr>
<td>BIOL 2313</td>
<td>Human Anat/Physiology II and Human Anat/Physio Lab II</td>
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<tr>
<td>&amp; BIOL 2113</td>
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<tr>
<td>BIOL 3320</td>
<td>Genetics</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 2324</td>
<td>Organic Chemistry and Lab for Organic Chemistry 2324</td>
<td>4</td>
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<tr>
<td>&amp; CHEM 2124</td>
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<tr>
<td>CLSC 2210</td>
<td>Intro to the Clinical Lab</td>
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<td>CLSC 2212</td>
<td>Clinical Laboratory Statistics</td>
<td>2</td>
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<tr>
<td>CLSC 3357</td>
<td>Opportunistic &amp; Parasitic Infect</td>
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<tr>
<td>MICR 2340</td>
<td>General Microbiology</td>
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<td>&amp; MICR 2141</td>
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**Clinical Lab Science Core (Courses require a grade of C or better.)**

**Junior Year-Summer:**
- CLSC 3351 Concepts in Immunodiagnostics 3

**Junior Year-Fall Semester:**
- CLSC 3153 Body Fluids Lab 1
- CLSC 3155 Clinical Chemistry I Lab 1
- CLSC 3161 Serology Lab 1
- CLSC 3252 Body Fluids 2
- CLSC 3257 Hematology I Lab 2
- CLSC 3260 Serology 2
- CLSC 3354 Clinical Chemistry I 3
- CLSC 3356 Hematology I 3

**Junior Year-Spring Semester:**
- CLSC 3164 Clinical Chemistry II Lab 1
- CLSC 3167 Infectious Dis Lab: Pre-Anal Op 1
- CLSC 3168 Infectious Dis Lab: Anal/Post-Ana Op 1
- CLSC 3269 Immunohematology Lab 2
- CLSC 3364 Hematology II 3
- CLSC 3365 Clinical Chemistry II 3
- CLSC 3366 Infectious Diseases 3
- CLSC 3368 Immunohematology 3

**Senior Year-Fall Semester:**
- CLSC 4111 Molecular Diagnosis Laboratory 1
- CLSC 4210 Molecular Diagnostics 2
- CLSC 4471 Preceptorship I 4
- CLSC 4472 Preceptorship II 4
- CLSC 4273 Clinical Education 2
- CLSC 4274 Clinical Investigation 2

**Senior Year-Spring Semester:**
- CLSC 4100 Ethics 1
- CLSC 4180 Seminar 1
- CLSC 4275 Clinical Lab Mgmt/Supervision 2
- CLSC 4476 Preceptorship III 4
- CLSC 4478 Preceptorship IV 4

**Total Hours** 133

Courses require a grade of C or better.

**University Core Curriculum**

NOTE: The department may make specific suggestions for courses which are most applicable towards your major.
Psychology and Criminal Justice majors and minors are required to take MATH 1320 Math for Social Sciences I or a higher level Calculus course.

Business majors are required to take MATH 1320 Math for Social Sciences I or a higher level Calculus course.

NOTE: All courses require a C or better

**Communication (six hours)**

<table>
<thead>
<tr>
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<th>Title</th>
<th>Hours</th>
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<tr>
<td></td>
<td>The objective of the communication component is to enable the student to communicate effectively in clear and correct prose or orally in a style appropriate to the subject, occasion, and audience.</td>
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<td>Select six hours of the following:</td>
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<tr>
<td></td>
<td>For students whose secondary education was in English:</td>
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<tr>
<td>COMM 1611</td>
<td>Written and Oral Communication</td>
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</tr>
<tr>
<td>ENGL 1313</td>
<td>Writing About Literature</td>
<td></td>
</tr>
<tr>
<td>RWS 1301</td>
<td>Rhetoric &amp; Composition I</td>
<td></td>
</tr>
<tr>
<td>RWS 1302</td>
<td>Rhetoric &amp; Composition 2</td>
<td></td>
</tr>
<tr>
<td>RWS 1601</td>
<td>Rhetoric, Composition &amp; Comm</td>
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</tr>
<tr>
<td></td>
<td>For students whose secondary education was not in English:</td>
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<tr>
<td>ESOL 1311</td>
<td>Expos Engl Compos-Spkr Esl</td>
<td>3</td>
</tr>
<tr>
<td>ESOL 1312</td>
<td>Res &amp; Crit Writng Spkr Esl</td>
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<td>Total Hours</td>
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**American History (six hours)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>The objectives of the history component are to expand students' knowledge of the origin and history of the U.S., their comprehension of the past and current role of the U.S. in the world, and their ability to critically evaluate and analyze historical evidence. U.S. history courses (three hours must be Texas history) include:</td>
<td></td>
</tr>
<tr>
<td>HIST 1301</td>
<td>History of U.S. to 1865</td>
<td>3</td>
</tr>
<tr>
<td>HIST 1302</td>
<td>History of U.S. Since 1865</td>
<td>3</td>
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<td></td>
<td>Total Hours</td>
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</table>

**Language, Philosophy & Culture (three hours)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>The objective of the humanities component is to expand students' knowledge of the human condition and human cultures, especially in relation to behaviors, ideas, and values expressed in works of human imagination and thought. Through study in disciplines such as literature and philosophy, students engage in critical analysis and develop an appreciation of the humanities as fundamental to the health and survival of any society.</td>
<td></td>
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<tr>
<td></td>
<td>Select one of the following:</td>
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<tr>
<td>CHIC 2302</td>
<td>Latina/o Presence in the U.S.</td>
<td></td>
</tr>
<tr>
<td>ENGL 2311</td>
<td>English Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 2312</td>
<td>English Literature</td>
<td></td>
</tr>
<tr>
<td>ENGL 2313</td>
<td>Intro to American Fiction</td>
<td></td>
</tr>
<tr>
<td>ENGL 2314</td>
<td>Intro to American Drama</td>
<td></td>
</tr>
<tr>
<td>ENGL 2318</td>
<td>Intro to American Poetry</td>
<td></td>
</tr>
<tr>
<td>FREN 2322</td>
<td>Making of the “Other” Americas</td>
<td></td>
</tr>
<tr>
<td>HIST 2301</td>
<td>World History to 1500</td>
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</tr>
<tr>
<td>HIST 2302</td>
<td>World History Since 1500</td>
<td></td>
</tr>
<tr>
<td>PHIL 1301</td>
<td>Introduction to Philosophy</td>
<td></td>
</tr>
<tr>
<td>PHIL 2306</td>
<td>Ethics</td>
<td></td>
</tr>
<tr>
<td>RS 1301</td>
<td>Introduc to Religious Studies</td>
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<tr>
<td>SPAN 2340</td>
<td>Seeing &amp; Naming: Conversations</td>
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</tr>
<tr>
<td>WS 2300</td>
<td>Introduction to Womens Studies</td>
<td></td>
</tr>
<tr>
<td>WS 2350</td>
<td>Global Feminisms</td>
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<td></td>
<td>Total Hours</td>
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</table>
Mathematics (three hours)

Code | Title | Hours
--- | --- | ---
MATH 1309 | College Algebra | 3
MATH 1310 | Trigonometry and Conics |
MATH 1319 | Math in the Modern World |
MATH 1320 | Math for Social Sciences I |
MATH 1411 | Calculus I |
MATH 1508 | Precalculus 1,2 |
MATH 2301 | Math for Social Sciences II |
STAT 1380 | Statistical Literacy |
STAT 2480 | Elementary Statistical Methods |

1 A higher-level course in the calculus sequence can be substituted.
2 TCCN MATH 1314 will also satisfy this requirement.

Total Hours

3

Life & Physical Sciences (six hours)

Code | Title | Hours
--- | --- | ---
ASTR 1107 | Astronomy Lab I |
ASTR 1307 | Elem Astronomy-Solar System |
ASTR 1308 | Elem Astr Stars & Galaxies |
BIOL 1103 | Introductory Biology Lab |
BIOL 1104 | Human Biology Laboratory |
BIOL 1107 | Topics in Study of Life I |
BIOL 1108 | Organismal Biology Laboratory |
BIOL 1203 | Introductory Biology |
BIOL 1304 | Human Biology |
BIOL 1305 | General Biology |
BIOL 1306 | Organismal Biology |
BIOL 2111 | Human Anat/Physio Lab I |
BIOL 2113 | Human Anat/Physio Lab II |
BIOL 2311 | Human Anat/Physiology I |
BIOL 2313 | Human Anat/Physiology II |
CHEM 1105 | Laboratory for CHEM 1305 |
CHEM 1106 | Laboratory for CHEM 1306 |
CHEM 1107 | Intro General Chemistry Lab |
CHEM 1108 | Intro Organic & Biochem Lab |
CHEM 1305 | General Chemistry |
CHEM 1306 | General Chemistry |
CHEM 1307 | Intro to General Chemistry |
CHEM 1308 | Intro Organic & Biochemistry |
ESCI 1101 | Environmental Sci. Lab |
ESCI 1102 | Non-major Lab for ESCI 1301 |
ESCI 1202 | Intro to Environment Science 2 |
ESCI 1301 | Intro to Environmental Sci |
<table>
<thead>
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<th>Code</th>
<th>Title</th>
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<tbody>
<tr>
<td>GEOG 1106</td>
<td>Laboratory for GEOG 1306</td>
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<tr>
<td>GEOG 1306</td>
<td>Physical Geography</td>
</tr>
<tr>
<td>GEO 1103</td>
<td>Lab for GEOL 1313</td>
</tr>
<tr>
<td>GEO 1104</td>
<td>Lab for GEOL 1314</td>
</tr>
<tr>
<td>GEOL 1111</td>
<td>Principles of Earth Sci - Lab</td>
</tr>
<tr>
<td>GEOL 1112</td>
<td>Laboratory for Geology 1212</td>
</tr>
<tr>
<td>GEOL 1211</td>
<td>Principles of Earth Sciences</td>
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<tr>
<td>GEOL 1212</td>
<td>Principles of Earth Science</td>
</tr>
<tr>
<td>GEOL 1230</td>
<td>The Blue Planet</td>
</tr>
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<td>GEOL 1231</td>
<td>Natural Hazards</td>
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<tr>
<td>GEOL 1313</td>
<td>Intro to Physical Geology</td>
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<tr>
<td>GEOL 1314</td>
<td>Intro to Historical Geol</td>
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<tr>
<td>HSCI 2302</td>
<td>Fundamentals of Nutrition</td>
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<tr>
<td>HSCI 2303</td>
<td>Wellness Dynamics</td>
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<td>MICR 2330</td>
<td>Microorganisms and Disease</td>
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<tr>
<td>PHYS 1403</td>
<td>General Physics I</td>
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<tr>
<td>PHYS 1404</td>
<td>General Physics II</td>
</tr>
<tr>
<td>PHYS 2420</td>
<td>Introductory Mechanics</td>
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<tr>
<td>PHYS 2421</td>
<td>Introductory Electromagnetism</td>
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**Total Hours**: 1-4

### Political Science (six hours)

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<tr>
<td>POLS 2310</td>
<td>Introduction to Politics</td>
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<tr>
<td>POLS 2311</td>
<td>American Gover &amp; Politics</td>
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**Total Hours**: 6

### Social and Behavioral Sciences (three hours)

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<tbody>
<tr>
<td>ANTH 1301</td>
<td>Intro-Phys Anth/Archeolog</td>
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<tr>
<td>ANTH 1302</td>
<td>Intro-Cultural Anthropology</td>
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<td>ANTH 1310</td>
<td>Cultural Geography</td>
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<tr>
<td>ANTH 2320</td>
<td>Intro to Linguistics</td>
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<td>CE 2326</td>
<td>Econ for Engrs &amp; Scientists</td>
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<tr>
<td>COMM 2350</td>
<td>Interpersonal Communication</td>
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<tr>
<td>COMM 2372</td>
<td>Mass Media and Society</td>
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<tr>
<td>ECON 2303</td>
<td>Principles of Economics</td>
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<tr>
<td>ECON 2304</td>
<td>Principles of Economics</td>
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<tr>
<td>EDPC 1301</td>
<td>Introduction to Ed Psychology</td>
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<tr>
<td>EDU 1342</td>
<td>Action Research in Classrooms</td>
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</tr>
<tr>
<td>ENGL 2320</td>
<td>Introduction to Linguistics</td>
<td></td>
</tr>
<tr>
<td>GEOG 1310</td>
<td>Cultural Geography</td>
<td></td>
</tr>
<tr>
<td>LING 2320</td>
<td>An Intro. to Linguistics</td>
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<tr>
<td>LING 2340</td>
<td>Lang. Inside &amp; Out: Sel Topics</td>
<td></td>
</tr>
<tr>
<td>PSYC 1301</td>
<td>Introduction to Psychology</td>
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</tbody>
</table>

The objective of the social and behavioral science component is to increase students' knowledge of how social and behavioral scientists discover, describe, and explain the behaviors and interactions among individuals, groups, institutions, events, and ideas. Such knowledge will better equip students to understand themselves and the roles they play in addressing the issues facing humanity.

Select one of the following: 3
<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>SOCI 1301</td>
<td>Introduction to Sociology</td>
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</tr>
<tr>
<td>SOCI 1310</td>
<td>Cultural Geography</td>
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</tr>
<tr>
<td></td>
<td><strong>Total Hours</strong></td>
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</tr>
</tbody>
</table>

**Creative Arts (three hours)**

The objective of the visual and performing arts component is to expand students' knowledge and appreciation of the human imagination as expressed through works of visual art, dance, music, theatre and film. Through study in these disciplines, students will form aesthetic judgments and develop an appreciation of the arts as fundamental to the health and survival of any society.

Select one of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>ART 1300</td>
<td>Art Appreciation</td>
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<tr>
<td>ARTH 1305</td>
<td>History of Art I</td>
<td></td>
</tr>
<tr>
<td>ARTH 1306</td>
<td>History of Art II</td>
<td></td>
</tr>
<tr>
<td>DANC 1304</td>
<td>Dance Appreciation</td>
<td></td>
</tr>
<tr>
<td>FILM 1390</td>
<td>Intro-Art of Motion Pict.</td>
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</tr>
<tr>
<td>MUSL 1324</td>
<td>Music Appreciation</td>
<td></td>
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<tr>
<td>MUSL 1327</td>
<td>Jazz to Rock</td>
<td></td>
</tr>
<tr>
<td>MUSL 2321</td>
<td>Music, Culture, and Society</td>
<td></td>
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<tr>
<td>THEA 1313</td>
<td>Introduction to Theatre</td>
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<tr>
<td></td>
<td><strong>Total Hours</strong></td>
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</table>

**Component Area Option (six hours)**

The objective of the institutionally designated option component is to develop the critical thinking skills and academic tools required to be an effective learner. Special emphasis is placed on the use of technology in problem-solving, communications, and knowledge acquisition.

Select two of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>BUSN 1301</td>
<td>Intro to Global Business</td>
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<tr>
<td>COMM 1301</td>
<td>Public Speaking</td>
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<td>COMM 1302</td>
<td>Business/Profession Comm</td>
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<td>CS 1310</td>
<td>Intro-Computational Thinking</td>
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<tr>
<td>CS 1320</td>
<td>Computer Programming Sci/Engr</td>
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<td>EL 1301</td>
<td>Eng Innovation and Leadership</td>
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<tr>
<td>SCI 1301</td>
<td>Inquiry in Math &amp; Science</td>
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<tr>
<td>UNIV 1301</td>
<td>Seminar/Critical Inquiry</td>
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<td><strong>Total Hours</strong></td>
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**4-Year Sample Degree Plan**

**BS Clinical Laboratory Science (Starting with Pre-Calculus)**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td></td>
<td><strong>BACHELOR OF SCIENCE IN CLINICAL LABORATORY SCIENCE</strong></td>
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</tr>
<tr>
<td></td>
<td><strong>(Starting with Pre-Calculus)</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>FRESHMAN</strong></td>
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**Total Hours** 135

**BS Clinical Laboratory Science (Starting with Calculus)**

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| & CLSC 3168     | and Infec Dis Lab:Anal/Post-Ana Op   |
| CLSC 3364       | Hematology II                        |
| CLSC 3365       | Clinical Chemistry II                |
| & CLSC 3164     | and Clinical Chemistry II Lab        |
| CLSC 3366       | Infectious Diseases                  |
| CLSC 3368       | Immunohematology                     |
| & CLSC 3269     | and Immunohematology Lab             |

| **Summer**      |                                      |
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| & CLSC 4111     | and Molecular Diagnosis Laboratory   |

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