**Slippery Rock University of Pennsylvania – Curriculum Guide**

**Bachelor of Science in Biology – Professional**

**LECOM Osteopathic (4+4)**

---

### LIBERAL STUDIES REQUIREMENTS (45-46 credits)

See Liberal Studies Guide for Goal and Enrichment choices

#### GOAL COURSE REQUIREMENTS

Complete Goal requirements as indicated below (36-37 credits)

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Cr</th>
<th>Gr</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGL 102</td>
<td>Critical Writing</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>ENGL 104 or ENGL 220</td>
<td>Critical Reading or Intro to Literary and Cultural Studies</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>COMM 200</td>
<td>Civil Discourse</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

#### The Arts (3 credits)

Goal

#### Global Community (9 credits)

Goal – Non-US

Goal – US

#### Human Institutions/Interpersonal Relationships (3 credits)

Goal

#### Science, Technology & Math (9-10 credits)

CHEM 107 | General Chemistry I | 3  |
CHEM 111 | General Chemistry I Lab | 3  |
MATH 225 | Calculus I | 4  |
PHYS 211 | General Physics I / Lab | 4  |

#### Challenges of the Modern Age (3 credits)

Goal

#### ENRICHMENT COURSE REQUIREMENTS

Choose one course from three of the following Enrichment areas. (9 credits)

The Arts

Global Community

Human Institutions/Interpersonal Relationships

Science, Technology & Math

CHEM108 | General Chemistry II | 3  |

#### OTHER BASIC REQUIREMENTS

Check with your advisor or a current degree audit report to see if you have been exempted from this course. The credit earned in this course will not be counted toward the 120 credit hour minimum needed to earn a degree.

ACSD 110 | Beginning Algebra | 3  |

---

### COMPUTER COMPETENCY

Students must demonstrate “computer competency” by:

- Passed Exam
- Pass Computer Competency Exam

- OR CPSC ______ Complete one of the following courses: CPSC 100, 110, or PE 202 at SRU or another post-secondary institution | 1-3 |

---

### MAJOR REQUIREMENTS (59-60 credits)

- 30 major credits must be taken at SRU or PASSHE
- 30 major credits must be taken at the 300 level or above

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Cr</th>
<th>Gr</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 104</td>
<td>Principles of Biology/Lab</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 201</td>
<td>General Botany / Lab</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 212</td>
<td>General Zoology / Lab</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>BIOL 250</td>
<td>Genetics / Lab</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

#### Required Upper-Level Biology (1 credit)

* BIOL 432 Seminar 1

#### Upper-Level Biology Electives (15 credits)

- BIOL 325 Biometry/Lab
- BIOL 330 Microbiology/Lab
- BIOL 335 Cell Biology/Lab
- BIOL 340 Vertebrate Anatomy/Lab
- BIOL 370 Molecular Biology/Lab
- BIOL 401 Ecology/Lab
- BIOL 410 Animal Physiology/Lab
- BIOL 451 Plant Physiology/Lab

#### Additional Upper-Level Biology Electives – Courses can come from courses not chosen above, or any 300/400 level course listed below.

- PLE courses are only offered during the summer months through our affiliation with Pymatuning Laboratory of Ecology. (6 credits)

- BIOL 301 Forest Ecology/PLE
- BIOL 302 Ecology of Amphibians & Reptiles/Lab/PLE
- BIOL 303 Behavioral Ecology/Lab/PLE
- BIOL 305 Wetlands and Aquatic Plants/Lab
- BIOL 306 Freshwater Biomonitoring/Lab
- BIOL 307 Vertebrate Ecology/Lab
- BIOL 308 Aquatic Ecosystem Mgmt/Lab/PLE
- BIOL 310 Plant Systematics/Lab
- BIOL 311 Entomology/Lab
- BIOL 313 Herpetology/Lab/PLE
- BIOL 314 Medical Parasitology/Lab
- BIOL 315 Medical Mycology/Lab
- BIOL 316 Medical Immunology/Lab
- BIOL 320 Ornithology/Lab
- BIOL 321 Wildlife Management/Lab/PLE
- BIOL 322 Conservation Biology/Lab/PLE
- BIOL 323 Field Stream Ecology/Lab/PLE

---

### BIOLOGY PROGRAM REQUIREMENTS

- Students desiring a Biology Major must maintain at least a 2.000 average in Biology.
- Before progressing to a 200-level course, students must achieve a 2.000 average in Principles of Biology - BIOL 104.
- Students must register in 200-level courses in any order, but must maintain a Biology average of 2.000 or better and must complete the 200 level Biology sequence before progressing to 300 and 400-level courses in the major.
- A student must repeat any 200-level course that brings the Biology average below a 2.000.
- Students should complete all 200-level Biology requirements by the end of their sophomore year.
- To receive full time financial aid as an undergraduate student, student must be enrolled in 12 undergraduate credits in the term(s) they are receiving financial aid in addition to their graduate credits.
- Graduate courses taken as an undergraduate student count toward their graduate degree, not their undergraduate degree.

---

### IMPORTANT CURRICULUM GUIDE NOTES

This Curriculum Guide is provided to help SRU students and prospective students better understand their intended major curriculum. Enrolled SRU students should note that My Rock Audit may place already-earned and/or in progress courses in different, yet valid, curriculum categories. Enrolled SRU students should use My Rock Audit and materials and information provided by their faculty advisors to ensure accurate progress towards degree completion. The information on this guide is current as of the date below. Students are responsible for curriculum requirements at the time of enrollment at the University.

**Passed Exam**

- Course may have a prerequisite. See Undergraduate Online Catalog.

- Course can be counted as a Liberal Studies Requirement, but earns credit only once toward your 120-credit total.

- Course counts for 50% of Major requirements but not for Major GPA

- Course counts for 50% of Major requirements and Major GPA

- Core GPA

- PLE Pymatuning Laboratory of Ecology

PASSHE = Pennsylvania State System of Higher Education Institution

---

### GPA REQUIREMENT

- 3.4 or higher Overall GPA
- 3.2 or higher Science GPA
- 2.0 or higher Core GPA

---

### BIOLOGY – PROFESSIONAL - BS

LECOM OSTEOPATHIC (4+4) (61LD)

Revised 2/2019

UCC 2/5/2019

CONTINUED ON PAGE 2
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOL 326*</td>
<td>Field Methods in Biogeography/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 327*</td>
<td>Limnology/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 331*</td>
<td>Mammalogy/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 343*</td>
<td>Embryology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 345*</td>
<td>Introduction to Biological Electron Microscopy★</td>
<td>2</td>
</tr>
<tr>
<td>BIOL 350*</td>
<td>Evolution★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 356*</td>
<td>Field Ecology/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 357*</td>
<td>Environmental Microbiology/Lab★</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 360*</td>
<td>Field Botany★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 361*</td>
<td>Flora of Western Pennsylvania★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 371*</td>
<td>Vertebrate Field Zoology★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 373*</td>
<td>Ichthyology/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 375*</td>
<td>Ecology of Fish/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 402*</td>
<td>Biogeography/Lab★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 405*</td>
<td>Biological Ecology/Lab★</td>
<td>4</td>
</tr>
<tr>
<td>BIOL 412*</td>
<td>Population Biology ★ PLE</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 430*</td>
<td>Pathogenic Microbiology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 450*</td>
<td>Biology Internship★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 465*</td>
<td>Plant Anatomy/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 470*</td>
<td>Histology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>BIOL 498*</td>
<td>Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>MARS 221^</td>
<td>Marine Invertebrates/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 241^</td>
<td>Marine Biology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 250^</td>
<td>Wetland Ecology/Lab</td>
<td>3</td>
</tr>
<tr>
<td>MARS 260^</td>
<td>Marine Ecolology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 270^</td>
<td>Coastal Vegetation/Lab</td>
<td>3</td>
</tr>
<tr>
<td>MARS 298^</td>
<td>Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>MARS 300^</td>
<td>Behavior of Marine Organ/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 310^</td>
<td>The Mammals of Coastal Ecosystems/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 320^</td>
<td>Marine Microbiology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 330^</td>
<td>Tropical Invertebrates/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 342^</td>
<td>Marine Botany/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 343^</td>
<td>Marine Ichthyology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 344^</td>
<td>Anatomy of Marine Chordate/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 345^</td>
<td>Ornithology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 350^</td>
<td>Physiology of Marine Invertebrates/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 398^</td>
<td>Developmental Biology of Marine Organisms/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 420^</td>
<td>Marine Micropaleontology/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 431^</td>
<td>Ecology of Marine Plankton/Lab★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 441^</td>
<td>Biology of Molluscs★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 490^</td>
<td>Independent Study★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 491^</td>
<td>Coral Reef Ecology★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 492^</td>
<td>Marine Mammals★</td>
<td>3</td>
</tr>
<tr>
<td>MARS 498^</td>
<td>Selected Topics</td>
<td>3</td>
</tr>
<tr>
<td>MARS 500^</td>
<td>Problems in Marine Science★</td>
<td>3</td>
</tr>
</tbody>
</table>

**Independent Study Option** – Choose from BIOL490 or BIOL 3**/4** or MARS***

**Non-Independent Study Option** - Choose one additional 300/400 level Biology/Marine Science course from list above (3 credits)

**Major Field Test**
Required of all Biology students before graduation

---

**Related Sciences – Chemistry (12 credits)**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 108~</td>
<td>General Chemistry II★</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 112~</td>
<td>General Chemistry II Lab★</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 201~</td>
<td>Organic Chemistry★</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 202~</td>
<td>Organic Chemistry II★</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 211~</td>
<td>Organic Chemistry I Lab★</td>
<td>1</td>
</tr>
<tr>
<td>CHEM 212~</td>
<td>Organic Chemistry II Lab★</td>
<td>1</td>
</tr>
</tbody>
</table>

**Related Sciences – Chemistry Advanced Elective (3 credits)**

Not permitted to choose BIOL300, 314, 315, 316, 345

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM301~</td>
<td>Physical Chemistry I★</td>
<td>3</td>
</tr>
<tr>
<td>CHEM335~</td>
<td>Biochemistry I★</td>
<td>3</td>
</tr>
</tbody>
</table>

**Related Sciences – Physics (3-4 credits)**

Not permitted to choose BIOL300, 314, 315, 316, 345

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS213~ or</td>
<td>General Physics III / Lab★</td>
<td>3-4</td>
</tr>
<tr>
<td>any 300/400</td>
<td>or Any BIOL 300/400 level with a</td>
<td></td>
</tr>
<tr>
<td>BIOL</td>
<td>exception of BIOL300, 314, 315,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>316, 345</td>
<td></td>
</tr>
</tbody>
</table>

**NATURAL SCIENCE AND MATH COLLEGE-WIDE REQUIREMENTS**

Students must take the following four courses (12 credits)

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 107</td>
<td>General Chemistry I★</td>
<td>3</td>
</tr>
<tr>
<td>CHEM 111</td>
<td>General Chemistry I Lab★</td>
<td>1</td>
</tr>
<tr>
<td>MATH 225</td>
<td>Calculus I★</td>
<td>4</td>
</tr>
<tr>
<td>PHYS 211</td>
<td>General Physics I / Lab★</td>
<td>4</td>
</tr>
</tbody>
</table>

**ELECTIVES**