# ANATOMY AND PHYSIOLOGY CONCENTRATION

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 452</td>
<td>Cell Biology</td>
<td>4</td>
</tr>
<tr>
<td>CHEM 371</td>
<td>Biochemical Principles</td>
<td>5</td>
</tr>
<tr>
<td>or CHEM 313</td>
<td>Survey of Biochemistry and Biotechnology</td>
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</tbody>
</table>

## Biodiversity Courses

Select from the following:

- AEPS/BOT 323 Plant Pathology
- BIO 321 Mammalogy
- BIO 322 Ichthyology
- BIO 323 Ornithology
- BIO 324 Herpetology
- BIO 329 Vertebrate Field Zoology
- BIO 335 General Entomology
- BIO 336 Invertebrate Zoology
- BIO 415 Biogeography
- BOT 313 Taxonomy of Vascular Plants
- MSCI 324 Marine Mammals, Birds and Reptiles
- MSCI 437 Marine Botany

## Core Anatomy and Physiology Courses

Select from the following:

- BIO 406 Advanced Anatomy and Physiology: Neuroscience
- BIO 407 Advanced Anatomy and Physiology: Endocrinology
- or ASCI 405 Domestic Livestock Endocrinology
- BIO 408 Advanced Anatomy and Physiology: Cardiorespiratory and Renal
- BIO 409 Advanced Anatomy and Physiology: Muscle and Locomotion
- BIO 410 Functional Histology
- BIO 426 Immunology
- BIO 490 Advanced Anatomy and Physiology: Muscle and Locomotion

## Department Electives

Select from the following:

- BIO 321 Mammalogy
- BIO 322 Ichthyology
- BIO 323 Ornithology
- BIO 324 Herpetology
- BIO 329 Vertebrate Field Zoology
- BIO 335 General Entomology
- BIO 336 Invertebrate Zoology
- BIO 405 Developmental Biology
- BIO 406 Advanced Anatomy and Physiology: Neuroscience
- BIO 407 Advanced Anatomy and Physiology: Endocrinology
- or ASCI 405 Domestic Livestock Endocrinology
- BIO 408 Advanced Anatomy and Physiology: Cardiorespiratory and Renal
- BIO 409 Advanced Anatomy and Physiology: Muscle and Locomotion
- BIO 410 Functional Histology
- BIO 415 Biogeography
- BIO 426 Immunology
- BIO 428 Hematology
- BIO 429 Parasitology
- BIO 434 Environmental Physiology
- BIO 435 Plant Physiology
- BIO 470 Selected Advanced Topics (for "Gastrointestinal Physiology & Microbiology" topic only)
- BIO/CHEM 475 Molecular Biology Laboratory
- MCRO 224 General Microbiology I
- MCRO 225 General Microbiology II
- MCRO 320 Emerging Infectious Diseases
- MCRO 342 Public Health Microbiology
- MCRO 402 General Virology
- MCRO 423 Medical Microbiology
- MCRO 424 Microbial Physiology

## Approved Electives

Select from the following:

- AEPS/BOT 323 Plant Pathology
- ANT 401 Culture and Health
- ASCI 351 Reproductive Physiology
- ASCI 406 Applied Animal Embryology and Assisted Reproduction
- ASCI 438 Systemic Animal Physiology
- BIO 321 Mammalogy
- BIO 322 Ichthyology
- BIO 323 Ornithology
- BIO 324 Herpetology
- BIO 329 Vertebrate Field Zoology
- BIO 335 General Entomology
- BIO 336 Invertebrate Zoology
- BIO 400 Special Problems for Advanced Undergraduates
- BIO 405 Developmental Biology
- BIO 406 Advanced Anatomy and Physiology: Neuroscience
- BIO 407 Advanced Anatomy and Physiology: Endocrinology
- or ASCI 405 Domestic Livestock Endocrinology
- BIO 408 Advanced Anatomy and Physiology: Cardiorespiratory and Renal
- BIO 409 Advanced Anatomy and Physiology: Muscle and Locomotion
- BIO 410 Functional Histology
- BIO 415 Biogeography
- BIO 426 Immunology
- BIO 428 Hematology
- BIO 429 Parasitology
- BIO 434 Environmental Physiology
- BIO 435 Plant Physiology

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*1* Core Anatomy and Physiology Courses must be taken.

*2* Biodiversity Courses must be taken.

*3* If taken, must be taken with a grade of C or better.

*4* Department Electives must be taken.

*5* Approved Electives must be taken.
<table>
<thead>
<tr>
<th>Course</th>
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<tbody>
<tr>
<td>BIO 461</td>
<td>Senior Project - Research Proposal 4, 5</td>
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<tr>
<td>BIO 462</td>
<td>Senior Project - Research 4, 5</td>
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<tr>
<td>BIO 463</td>
<td>Honors Research 5</td>
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<tr>
<td>BIO 470</td>
<td>Selected Advanced Topics (for &quot;Gastrointestinal Physiology &amp; Microbiology&quot; topic only)</td>
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<tr>
<td>BIO/CHEM 475</td>
<td>Molecular Biology Laboratory</td>
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<td>BOT 313</td>
<td>Taxonomy of Vascular Plants</td>
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<tr>
<td>CHEM 217</td>
<td>Organic Chemistry II</td>
</tr>
<tr>
<td>CHEM 218</td>
<td>Organic Chemistry III</td>
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<tr>
<td>CHEM 220</td>
<td>Organic Chemistry Laboratory For Life Sciences II</td>
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<tr>
<td>CHEM 223</td>
<td>Organic Chemistry Laboratory for Life Sciences III</td>
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<tr>
<td>CHEM 372</td>
<td>Metabolism</td>
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<tr>
<td>CHEM 418</td>
<td>Neurochemistry</td>
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<tr>
<td>COMS 418</td>
<td>Health Communication</td>
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<tr>
<td>ENGR 322/SCM 302</td>
<td>The Learn By Doing Lab Teaching Practicum 5</td>
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<tr>
<td>FSN 310</td>
<td>Maternal and Child Nutrition</td>
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<tr>
<td>FSN 429</td>
<td>Clinical Nutrition I</td>
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<tr>
<td>KINE 406</td>
<td>Neuroanatomy</td>
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<td>KINE 445</td>
<td>Electrocardiography</td>
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<td>KINE 446</td>
<td>Echocardiography</td>
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<td>Marine Botany</td>
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<tr>
<td>PHIL 339</td>
<td>Biomedical Ethics</td>
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<tr>
<td>or PHIL 341</td>
<td>Professional Ethics</td>
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<tr>
<td>or SCM 451</td>
<td>Ethics in the Sciences</td>
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<tr>
<td>PSY 320</td>
<td>Health Psychology</td>
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<tr>
<td>PSY 340</td>
<td>Biopsychology</td>
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<tr>
<td>WGS/ES 350</td>
<td>Gender, Race, Culture, Science and Technology</td>
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Total units: 43

1. Excess units will be applied to subsequent concentration Electives.
2. Consultation with advisor is recommended prior to selecting approved electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.
3. Recommended for students interested in health sciences careers.
4. If BIO 461 or BIO 462 is used to meet the Senior Project Requirement, it cannot also be counted as an Approved Elective.
5. Maximum of 6 units may be applied toward Approved Electives from "by arrangement" courses: BIO 400, BIO 461, BIO 462, BIO 463, ENGR 322/SCM 302.