CAMPBELL UNIVERSITY
Biological Sciences

# Biology

## Bachelor of Science

### Pre-Physical Therapy Concentration

2019 Undergraduate Bulletin

| **General College Curriculum** (40 SH) | | | **Hours** |
|---|---|---|---|
| Campbell Freshman Seminar | CUFS | 100 | 1 |
| Introduction to Christianity | CHRS | 125 | 3 |
| English Fundamentals[1] | ENGL | 100 | 3 |
| Academic Writing[1] | ENGL | 101 | 3 |
| Academic Writing and Literature | ENGL | 102 | 3 |
| Literature Elective | ENGL | 2__ | 3 |
| Fine Arts (Art, Music, Theater)[2] | | 131 | 3 |
| Western Civilization I **OR** II | HIST | 111/112 | 3 |
| Foreign Language I[3] | | 101 | 3 |
| Foreign Language II[3] | | 102 | 3 |
| Foreign Language III[3] | | 201 | 3 |
| Humanities/Fine Arts Elective[4] | | | 3 |
| Humanities **OR** Social Science Elective[6] | | | 3 |
| Lifetime Wellness | PE | 185 | 2 |
| Connections[7] | CUC | 100 | 0.5 |
| Connections[7] | CUC | 200 | 0.5 |

**Total Credit Hours Earned**
(Minimum Hours Required= 124)

| **Major Requirements** (40 SH) | | | **Hours** |
|---|---|---|---|
| Basic Biology | BIOL | 111 | 4 |
| Cellular & Molecular Biology | BIOL | 201 | 4 |
| Botany | BIOL | 202 | 4 |
| Zoology | BIOL | 203 | 4 |
| Intro to Research & Scientific Lit. | BIOL | 205 | 3 |
| Human Anatomy & Physiology I | BIOL | 285 | 4 |
| Human Anatomy & Physiology II | BIOL | 286 | 4 |
| Ecology | BIOL | 327 | 4 |
| Genetics | BIOL | 342 | 4 |
| Seminar | BIOL | 451 | 1 |
| Biochemistry[8] | BIOL | 430 | 4 |
| Animal Physiology[8] | BIOL | 437 | |
| Plant Physiology[8] | BIOL | 438 | |

| **Ancillary Requirements** (35 SH) | | | **Hours** |
|---|---|---|---|
| Trigonometry | MATH | 112 | 3 |
| Elementary Statistics | MATH | 160 | 3 |
| General Chemistry I | CHEM | 111 | 4 |
| General Chemistry II | CHEM | 113 | 4 |
| Organic Chemistry I | CHEM | 227 | 4 |
| General Physics I | PHYS | 221 | 4 |
| General Physics II | PHYS | 222 | 4 |
| General Psychology[5] | PSYC | 222 | 3 |
| Applied Exercise Physiology | EXER | 324 | 3 |
| Applied Biomechanics | EXER | 325 | 3 |

**Open Electives[10]** (minimum 9 SH) **Hours**

[1] ***English:*** ENGL 100 and ENGL 101 may be waived for students that meet certain criteria

[2] ***Fine Arts:*** "Appreciation," "Introduction," or "Survey" course in art, music, or theatre; (ART 131, MUSC 131, or THEA 131)

[3] ***Foreign Language:*** Students are required to pass a 201 level Foreign Language Course. 3-9 hours, depending on placement.

[4] ***GCC Humanities/Fine Arts Electives:*** Choose one course from CHRS (202, 212, 224, 236, 251, 322 or higher), PHIL 121, ENGL (201, 202, 203, 204, 205, or 206), HIST (1xx, 2xx, 3xx, or 4xx), FLAN (221, 222, 241, 242), MUSC 331, HONOR (207 or 305)

[5] ***GCC Social/Behavioral Sciences Electives:*** Choose one course from CRIM, ECON, GEOG, POLS, PSYC, SOCI, COMM 240, or HONOR 307

[6] ***GCC Elective:*** Choose one additional course from either the Humanities/Fine Arts or Social/Behavioral Sciences Elective Lists. (See [4] & [5])

[7] ***Connections:*** Students entering with less than 30 semester hours must complete both CUC 100 **and** CUC 200. Students entering with 30 or more semester hours must complete either CUC 100 **or** CUC 200

[8] Students are required to take **one** of the following: BIOL 430, BIOL 437, or BIOL 438

[9] ***Biology Electives:*** Take a minimum of 7 hours of BIOL electives; some restrictions apply: maximum of 8 hours of Human A&P (BIOL 221, 285, 286), maximum of 4 hours of Microbiology (BIOL 275, 334). **See reverse for suggested electives**.

[10] ***Open Electives:*** Any Campbell course, including BIOL courses or courses from the GCC elective lists beyond the GCC requirements to reach a minimum of 124 total hours. Students are encouraged to complete more than the minimum number of hours in biology. **See reverse for suggested electives.**

**Physical Therapy Programs:**

Students should check the specific requirements for each PT program. Some schools may have additional requirements. The GRE is required for admission to PT programs and should be taken by the Fall semester of senior year.

**Suggested Electives:**

The following courses are **required** for most PT programs:

- **One or more** psychology or sociology courses in addition to PSYC 222, such as:
  - PSYC 260 Developmental Psychology
  - PSYC 369 Physiological Psychology
  - PSYC 461 Abnormal Psychology
  - SOCI 225 Principles of Sociology

The following courses are additional **recommended** electives:

- BIOL 310 Advanced Human Physiology
- BIOL 320 Developmental Anatomy
- BIOL 334 Microbiology & Immunology
- BIOL 350 Advanced Cell & Molecular Biochemistry
- BIOL 430 Biochemistry
- EXER 326 Anatomical Kinesiology and Muscle Function

# SAMPLE CURRICULUM OUTLINE*

FRESHMAN YEAR

| SEMESTER 1 | | | HRS | SEMESTER 2 | | | HRS |
|---|---|---|---|---|---|---|---|
| Basic Biology | BIOL | 111 | 4.0 | Botany | BIOL | 202 | 4.0 |
| English Fundamentals[1] | ENGL | 100 | 3.0 | Academic Writing | ENGL | 101 | 3.0 |
| Trigonometry | MATH | 112 | 3.0 | Elementary Statistics | MATH | 160 | 3.0 |
| Intro to Christianity | CHRS | 125 | 3.0 | Fine Arts[2] | | 131 | 3.0 |
| Lifetime Wellness | PE | 185 | 2.0 | Foreign Language | | 102 | 3.0 |
| Freshman Seminar | CUFS | 100 | 1.0 | Connections | CUC | 100 | 0.5 |

SOPHOMORE YEAR

| SEMESTER 1 | | | HRS | SEMESTER 2 | | | HRS |
|---|---|---|---|---|---|---|---|
| Zoology | BIOL | 203 | 4.0 | Cellular & Molecular Biology | BIOL | 201 | 4.0 |
| General Chemistry I | CHEM | 111 | 4.0 | General Chemistry II | CHEM | 113 | 4.0 |
| Intro to Research & Sci. Lit | BIOL | 205 | 3.0 | Literature Elective | ENGL | 2__ | 3.0 |
| Academic Writing & Lit | ENGL | 102 | 3.0 | General Psychology[5] | PSYC | 222 | 3.0 |
| Foreign Language | | 201 | 3.0 | | | | |
| Connections | CUC | 200 | 0.5 | | | | |

JUNIOR YEAR

| SEMESTER 1 | | | HRS | SEMESTER 2 | | | HRS |
|---|---|---|---|---|---|---|---|
| Human Anatomy & Phys. I | BIOL | 285 | 4.0 | Human Anatomy & Phys. II | BIOL | 286 | 4.0 |
| Organic Chemistry I | CHEM | 227 | 4.0 | Applied Exercise Physiology | EXER | 324 | 3.0 |
| General Physics I | PHYS | 221 | 4.0 | General Physics II | PHYS | 222 | 4.0 |
| Western Civ. I or II | HIST | 111/112 | 3.0 | GCC Humanities Elective[4] | | | 3.0 |
| | | | | Open Elective[10] | | | 3.0 |

SENIOR YEAR

| SEMESTER 1 | | | HRS | SEMESTER 2 | | | HRS |
|---|---|---|---|---|---|---|---|
| Biochemistry, Plant Phys., or Elective[8 10] | | | 4.0 | Ecology | BIOL | 327 | 4.0 |
| Seminar | BIOL | 451 | 1.0 | Genetics | BIOL | 342 | 4.0 |
| Applied Biomechanics | EXER | 325 | 3.0 | Animal Physiology or Elective[8 10] | | | 4.0 |
| GCC Elective[6] | | | 3.0 | Open Elective[10] | | | 3.0 |
| Open Elective[10] | | | 3.0 | | | | |

**actual degree plan may differ, students should meet with their academic advisor to create a plan specific and unique to their interests/background*