

B.S. in BIOLOGICAL SCIENCES (AY 2024-2025)
CONCENTRATION IN PHYSIOLOGY (75 units)

CORE COURSE REQUIREMENTS (39 units)

| LOWER DIVISION BIOLOGY | UNITS | OFFERED | PREREQUISITES |
|---|--------------|----------------|---------------------------|
| BIOL 140A <i>Principles of Cell & Molecular Biology</i> | 5 | Fall & Spring | N/A |
| BIOL 140B <i>Principles of Organismal Biology</i> | 5 | Fall & Spring | BIOL 140A* |
| subtotal | 10 | | |
| LOWER DIVISION PHYSICAL SCIENCE & MATH | UNITS | OFFERED | PREREQUISITES |
| CHEM 111 & 111L <i>Gen Chem I (Lec & Lab)</i> | 5 | Fall & Spring | MATH 120(25) or 130 (co-) |
| CHEM 112 & 112L <i>General Chemistry II (Lec & Lab)</i> | 5 | Fall & Spring | CHEM 111* & 111L* |
| MATH 130 <i>Calculus I</i> | 4 | Fall & Spring | MATH 120 or MATH 125 |
| PHYS 125 <i>Principles of Physics I</i> | 4 | Fall & Spring | MATH 120 or MATH 125 |
| PHYS 126 <i>Principles of Physics II</i> | 4 | Fall & Spring | PHYS 125 |
| subtotal | 22 | | |
| UPPER DIVISION BIOLOGY | UNITS | OFFERED | PREREQUISITES |
| BIOL 310 <i>Genetic Analysis I</i> | 4 | Fall & Spring | BIOL 140B* |
| BIOL 320 <i>Evolutionary Biology</i> | 3 | Fall & Spring | BIOL 310* |
| subtotal | 7 | | |

CONCENTRATION COURSE REQUIREMENTS (36 units)

| UPPER DIVISION BIOLOGY | UNITS | OFFERED | PREREQUISITES |
|--|--------------|----------------|--------------------------|
| BIOL 350 <i>Ecology</i> | 4 | Fall & Spring | BIOL 140B* |
| BIOL 370 <i>Animal Physiology</i> | 4 | Fall & Spring | BIOL 140B*, CHEM 112* |
| BIOL 488 <i>Environmental Physiology**</i> | 3 | Fall | BIOL 370* |
| subtotal | 14 | | |
| UPPER DIVISION PHYSICAL SCIENCE & STATS | UNITS | OFFERED | PREREQUISITES |
| CHEM 230 <i>Survey of Organic Chemistry</i> | 5 | Fall | CHEM 112* |
| CHEM 340 <i>Survey of Biochemistry</i> | 3 | Fall & Spring | CHEM 230* or 332* |
| STAT 303 <i>Statistical Methods in Biology</i> | 3 | Fall & Spring | completion of GE Area B4 |
| subtotal | 8 | | |

Note: Depending on their professional objective, students may opt to take **CHEM 331 & 332** rather than CHEM 230 and **CHEM 441 & 442 (Biochemistry I & II)**. Please consult an advisor if you would like to make these substitutes.

| ELECTIVES (Select 14 units from the list below) | UNITS | OFFERED | PREREQUISITES |
|--|--------------|----------------|-----------------------------|
| BIOL 330 <i>Microbiology</i> | 3 | Fall | BIOL 140B*, CHEM 112* (co-) |
| BIOL 425 <i>Techniques in Mammalian Cell Culture</i> | 3 | Spring | BIOL 310*, BIOL 330* |
| BIOL 430 <i>Microbial Physiology and Metabolism</i> | 3 | Intermittently | BIOL 140B* |
| BIOL 431 <i>Medical Microbiology</i> | 5 | Spring | BIOL 330* |
| BIOL 432 <i>Microbe-Host Interactions</i> | 3 | Fall | BIOL 320* |
| BIOL 440 <i>Molecular Virology</i> | 3 | Fall | BIOL 310* |
| BIOL 441 <i>Parasitology</i> | 3 | Fall | BIOL 310* |
| BIOL 443 <i>Hematology</i> | 4 | Intermittently | BIOL 140B*, CHEM 112* |
| BIOL 445 <i>Immunology</i> | 3 | Fall & Spring | BIOL 310*, CHEM 332* |
| BIOL 470 <i>Animal Senses</i> | 4 | Intermittently | BIOL 370* |
| BIOL 471 <i>Neurobiology</i> | 3 | Intermittently | BIOL 370* |
| BIOL 472 <i>Neurobiology Lab</i> | 4 | Intermittently | BIOL 471* |
| BIOL 473 <i>Comparative Physiology</i> | 3 | Intermittently | BIOL 370* or BIOL 270 + 271 |
| BIOL 474 <i>Biomedical Physiology</i> | 3 | Intermittently | BIOL 370* or BIOL 270 + 271 |
| BIOL 475 <i>Global Change Biology</i> | 4 | Spring | BIOL 370* |
| BIOL 476 <i>General Endocrinology</i> | 3 | Fall | BIOL 370* |
| subtotal | 14 | | |

Note: BIOL 490 *Independent Study*, BIOL 493 *Directed Research in Biology*, BIOL 498 *Internship* or a combination of 2 or more of these courses may be used for a maximum of 3 total units of elective credit.

* Must pass this prerequisite course with a C- or better to move onto the next course.

**Capstone course for the Physiology concentration.

- **Freshman/Sophomore Physiology Concentration & GE Advisor:** Ms. Joanna Cady-Aguilar (joanna.cadyaguilar@csueastbay.edu)
- **Junior/Senior Physiology Concentration & GE Advisors:** Mr. Avel Perez or Dr. Kelley Gove (cscistudentcenter@csueastbay.edu)
- **Physiology Concentration Career & Course Sub Advisors:** Dr. Tyler Evans (tyler.evans@csueastbay.edu) or Dr. James Murray (james.murray@csueastbay.edu)

DEGREE: B.S. in Biological Sciences (AY 2024-25)

CONCENTRATION: Physiology

Graduation Semester: _____

Name (Last, First): _____ **Net ID:** _____

CORE REQUIREMENTS

| Course | Grade | Semester & Year | Units | College/University Where Equivalent Course Was Taken | Equivalent Course Number | TES Verification |
|-----------|-------|-----------------|-------|--|--------------------------|------------------|
| CHEM 111 | | | 3 | ..... | ..... | ..... |
| CHEM 111L | | | 2 | ..... | ..... | ..... |
| CHEM 112 | | | 3 | ..... | ..... | ..... |
| CHEM 112L | | | 2 | ..... | ..... | ..... |
| PHYS 125 | | | 4 | ..... | ..... | ..... |
| PHYS 126 | | | 4 | ..... | ..... | ..... |
| MATH 130 | | | 4 | ..... | ..... | ..... |
| BIOL 140A | | | 5 | ..... | ..... | ..... |
| BIOL 140B | | | 5 | ..... | ..... | ..... |
| BIOL 310 | | | 4 | ..... | ..... | ..... |
| BIOL 320 | | | 3 | ..... | ..... | ..... |

CONCENTRATION REQUIREMENTS

| Course | Grade | Semester & Year | Units | College/University Where Equivalent Course Was Taken | Equivalent Course Number | TES Verification |
|----------|-------|-----------------|-------|--|--------------------------|------------------|
| CHEM 230 | | | 5 | ..... | ..... | ..... |
| CHEM 340 | | | 3 | ..... | ..... | ..... |
| STAT 303 | | | 3 | ..... | ..... | ..... |
| BIOL 350 | | | 4 | ..... | ..... | ..... |
| BIOL 370 | | | 4 | ..... | ..... | ..... |
| BIOL 488 | | | 4 | ..... | ..... | ..... |

ELECTIVES (At least 14 units from the courses below)

| Course | Grade | Semester & Year | Units | College/University Where Equivalent Course Was Taken | Equivalent Course Number | TES Verification |
|----------|-------|-----------------|-------|--|--------------------------|------------------|
| BIOL 330 | | | 5 | ..... | ..... | ..... |
| BIOL 425 | | | 3 | ..... | ..... | ..... |
| BIOL 430 | | | 3 | ..... | ..... | ..... |
| BIOL 431 | | | 5 | ..... | ..... | ..... |
| BIOL 432 | | | 3 | ..... | ..... | ..... |
| BIOL 440 | | | 3 | ..... | ..... | ..... |
| BIOL 441 | | | 3 | ..... | ..... | ..... |
| BIOL 443 | | | 4 | ..... | ..... | ..... |
| BIOL 445 | | | 3 | ..... | ..... | ..... |
| BIOL 470 | | | 4 | ..... | ..... | ..... |
| BIOL 471 | | | 3 | ..... | ..... | ..... |
| BIOL 472 | | | 4 | ..... | ..... | ..... |
| BIOL 473 | | | 3 | ..... | ..... | ..... |
| BIOL 474 | | | 3 | ..... | ..... | ..... |
| BIOL 475 | | | 4 | ..... | ..... | ..... |
| BIOL 476 | | | 3 | ..... | ..... | ..... |
| | | | | | | |
| | | | | | | |

Total Units for Concentration (75 min.): _____

Note: A C- or better required in all courses that serve as a prerequisite.