| Degree: Biochemistry, B.A.: Chemistry Education Concentration 23-24 | | | | |
|---|---|---|---|---|
| **Requirement Area** | **Course** | **Course Title** | **Prerequisites** | **Units** |
| **First Semester (FALL)** | | | | |
| E | SCI 130 | Connecting to STEM Majors | | 2 |
| A1 | | Oral Communication | | 3 |
| B1/LD Major | CHEM 111 | General Chemistry I | | 3 |
| B3/LD Major | CHEM 111L | General Chemistry Lab I | | 2 |
| B4/LD Major | MATH 130 | Calculus I | One from the following: Satisfactory score of 78 or higher on Mathematics Placement Exam, MATH 120 or MATH 125 (either course with grade C- or better). | 4 |
| F | | Ethnic Studies | | 3 |
| | | | **Total:** | 17 |
| **Second Semester (SPRING)** | | | | |
| A2 | | Written Communication | | 3 |
| C1 | | Arts | | 3 |
| LD Major | MATH 131 | Calculus II | MATH 130 with grade C- or better. | 3 |
| LD Major | CHEM 112 | General Chemistry II | CHEM 111 with grade C- or better. | 5 |
| | | | **Total:** | 14 |
| **Third Semester (FALL)** | | | | |
| E | | Lifelong Leanring and Self-Development | | 1 |
| A3 | | Critical Thinking | | 3 |
| UD Major | CHEM 331 | Organic Chemistry I | CHEM 112 with grade C- or better | 5 |
| B2/LD Major | BIOL 140A | Principles of Cell and Molecular Biology | | 5 |
| | | | **Total:** | 14 |
| **Fourth Semester (SPRING)** | | | | |
| Second Composition | ENGL 200 or PHYS 230 | | | 3 |
| LD Major | BIOL 140B | Principles of Organismal Biology | BIOL 140A with grade C- or better. | 5 |
| LD Major | CHEM 220 | Quantitative Analysis | CHEM 112 with grade C- or better. | 4 |
| UD Major | CHEM 332 | Organic Chemistry II | CHEM 331 with grade C- or better. | 5 |
| | | | **Total:** | 17 |
| **Fifth Semester (FALL)** | | | | |
| Sustainability Overlay/LD Major | GEOL 100 | Earth Systems Science | | 4 |
| C2 | | | | 3 |
| UD Major | CHEM 441 | Biochemistry I | CHEM 332 with grade C- or better. | 4 |
| B3/LD Major | PHYS 125 | Principles of Physics I | | 4 |
| | | | **Total:** | 15 |
| **Sixth Semester (SPRING)** | | | | |
| UD Major | CHEM 442 | Biochemistry II | CHEM 441 with grade C- or better. | 4 |
| UWR | | | | 3 |
| LD Major | PHYS 126 | Principles of Physics II | PHYS 125 | 4 |
| D1/Code1 | | | | 3 |
| | | | | |
| | | | **Total:** | 14 |
| **Seventh Semester (FALL)** | | | | |
| D2/Code 2 | | | | 3 |
| UD Major | CHEM 443 | Biochemistry Laboratory I | | 3 |
| UD Major | CHEM 350 | Biophysical Chemistry | | 3 |
| UD-B/Overlay | | | | 3 |
| Add'l C1 or C2 | | | | 3 |
| | | | **Total:** | 15 |
| **Eighth Semester (SPRING)** | | | | |
| UD Major | CHEM 470 | Chemical Literature | CHEM 332 with grade C- or better. | 1 |
| UD Major | CHEM 425 | Environmental Chemistry | CHEM 331 with grade C- or better. | 4 |
| UD-D/Overlay | | | | 3 |
| UD-C/UD Major | PHIL 335 | Philosophy of Science | Completion of GE areas A1, A2, A3 and B4. | 3 |
| UD Major | TED 301 | Exploring Education | | 3 |
| | | | **Total:** | 14 |
| **Total Units:** | | | | 120 |

Note: No changes to, or from, the credit/no credit pattern are permitted after the Grade Type Change period. There are no exceptions to this rule. Courses in a student's major department, regardless of course prefix, may not be taken "CR/NC," unless that is the only grading pattern in the course.

Revised:03/24/23

| CSUEB General Breadth and Graduation Requirement Checklist |
|---|
| **Area A (9 units): Communication in the English Language & Critical Thinking (Must earn passing grade of C-/CR or better)** |
| ☐ A1. COMM 100 or 104, MLL 111 |
| ☐ A2. ENGL 101, 102, or 104 |
| ☐ A3. PHIL 100 |
| **Area B (9 units) : Scientific Inquiry & Quantitative Reasoning** |
| ☐ B1. Physical Science |
| ☐ B2. Life Science |
| ☐ B3. Laboratory Activity |
| ☐ B4. Quantitative Reasoning (Must earn passing grade of C-/CR or better.) |
| **Area C (9 units): Arts & Humanities - Minimum of two different disciplines as designated by course prefix (e.g., ART, THEA, MUS)** |
| ☐ C1. Arts |
| ☐ C2. Humanities |
| ☐ *Additional Lower-division Area C Course in Arts (C1) or Humanities (C2) |
| **Area D (6 units) : Social Sciences - Minimum of two different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC)** |
| ☐ D1. |
| ☐ D2. |
| **Area E (3 units) : Lifelong Learning and Self-Development** |
| ☐ E. |
| **Area F (3 units): Ethnic Studies** |
| ☐ F. |
| **Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing.** |
| ☐ Second Composition |
| **University Writing Requirement** |
| ☐ UWR |
| **U.S. Code (American Institutions Requirement) - Two courses (6 units) covering three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. Constitution), and US-3 (California State & Local Government).** |
| ☐ Code 1. |
| ☐ Code 2. |
| **Upper Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)** |
| ☐ UD-B. Upper-division Science Inquiry and Quantitative Reasoning |
| ☐ UD-C.Upper-division Arts OR Humanities |
| ☐ UD-D. Upper-division Social Sciences |
| **Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major** |
| ☐ Diversity (Div) |
| ☐ Social Justice (SJ) |
| ☐ Sustainability (S) |
| **Concentration Courses** |
| The Bachelor of Arts degree, major in Biochemistry with a concentration in Chemistry Education, is designed for students interested in a career teaching chemistry at the high school level, but also prepares students to work as biochemists in an industrial setting. This program will prepare graduates to enter a single subject credential program. |
| CHEM 425 - Environmental Chemistry Units: 4 |
| GEOL 100 - Earth Systems Science Units: 4 ; G.E./G.R. Area: B1, B3; Sustainability |
| PHIL 335 - Philosophy of Science Units: 3 ; G.E./G.R. Area: UD-C |
| TED 301 - Introduction to Education Units: 3 |

***Students are required to take a minimum of 40 semester units as upper division (includes 9 units upper division GE)**