|                       |                      | stry, B.A.: Chemistry Education Con   | Centration 24 25                                     |       |
|-----------------------|----------------------|---|--|-------|
| Requirement Area      | Course               | Course Title  | Prerequisites  | Units |
| E                     | 501120               | First Semester (FALL)   |  | 2     |
| A1                    | SCI 130              | Connecting to STEM Majors  Oral Communication   |  | 3     |
| B1/LD Major           | CHEM 111             | General Chemistry I   |  | 3     |
| B3/LD Major           | CHEM 111L            | General Chemistry Lab I   |  | 2     |
|                       |                      |   | One from the following:                              |       |
|                       |                      |   | Satisfactory score of 78 or<br>higher on Mathematics |       |
|                       |                      |   | Placement Exam, MATH                                 |       |
|                       |                      |   | 120 or MATH 125 (either                              |       |
| B4/LD Major           | MATH 130             | Calculus I  | course with grade C- or better).                     | 4     |
| F                     | 110.111.130          | Ethnic Studies  | better).   | 3     |
|                       |                      |   | Total:   | 17    |
|                       |                      | Second Semester (SPRING)  |  |       |
| A2                    |                      | Written Communication   |  | 3     |
| C1                    |                      | Arts  |  | 3     |
|                       |                      |   | MATH 130 with grade C- or                            |       |
| LD Major              | MATH 131             | Calculus II   | better. CHEM 111 with grade C- or                    | 3     |
| LD Major              | CHEM 112             | General Chemistry II  | better.  | 3     |
| LD Major              | CHEM 112L            | General Chemistry II Lab  |  | 2     |
|                       |                      |   | Total:   | 14    |
|                       |                      | Third Semester (FALL)   |  |       |
| E                     |                      | Lifelong Leanring and Self-<br>Development  |  | 1     |
| A3                    |                      | Critical Thinking   |  | 3     |
|                       |                      |   | CHEM 112 with grade C- or                            |       |
| UD Major              | CHEM 331             | Organic Chemistry I Principles of Cell and Molecular  | better   | 5     |
| B2/LD Major           | BIOL 140A            | Biology   |  | 5     |
| ,                     |                      |   | Total:   | 14    |
|                       |                      | Fourth Semester (SPRING)  |  |       |
| Second Composition    | ENGL 200 or PHYS 23  | 30  |  | 3     |
|                       |                      |   | BIOL 140A with grade C- or                           |       |
| LD Major              | BIOL 140B            | Principles of Organismal Biology  | better.  | 5     |
|                       |                      |   | CHEM 112 with grade C- or                            |       |
| LD Major              | CHEM 220             | Quantitative Analysis   | better. CHEM 331 with grade C- or                    | 4     |
| UD Major              | CHEM 332             | Organic Chemistry II  | better.  | 5     |
|                       |                      |   |  |       |
|                       |                      | Fifth Company (FALL)  | Total:   | 17    |
| Sustainability        |                      | Fifth Semester (FALL)   |  |       |
| 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     |
| ob Major              | CHEIN THE            | Biodicinistry ii  | betten   |       |
|                       |                      |   |  |       |
|                       |                      |   |  |       |
| UWR                   |                      |   |  | 3     |
| LD Major              | PHYS 126             | Principles of Physics II  | PHYS 125   | 4     |
| D1/Code1              |                      |   |  | 3     |
| D1/Code1              |                      |   |  |       |
|                       |                      |   | Total:   | 14    |
|                       |                      | Seventh Semester (FALL)   |  |       |
| D2/C-4: 2             |                      |   |  |       |
| D2/Code 2<br>UD Major | CHEM 443             | Biochemistry Laboratory I   |  | 3     |
| UD Major              | CHEM 443<br>CHEM 350 | Biophysical Chemistry   | 1  | 3     |
| UD-B/Overlay          |                      | and an emission of the second |  | 3     |
| Add'l C1 or C2        |                      |   |  | 3     |
|                       |                      |   | Total:   | 15    |
|                       |                      | Eighth Semester (SPRING)  | CUELLOSS III I S                                     |       |
| UD Major              | CHEM 470             | Chemical Literature   | CHEM 332 with grade C- or better.                    | 1     |
|                       |                      | and and alterature  | CHEM 331 with grade C- or                            | ,     |
| UD Major              | CHEM 425             | Environmental Chemistry   | better.  | 4     |
| UD-D/Overlay          |                      |   | Constant Con   | 3     |
| UD-C/UD Major         | PHIL 335             | Philosophy of Science   | Completion of GE areas A1,<br>A2, A3 and B4.         | 3     |
| UD Major              | TED 301              | Exploring Education   | ne, no ana ba.                                       | 3     |
| -,-                   |                      | ,   | Total:   | 14    |
|                       |                      |   |  |       |

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.

| Area   | B General Breadth and Graduation Requirement Checklist A (9 units): Communication in the English Language & Critical  |
|--|---|
|  | Thinking (Must earn passing grade of C-/CR or better)   |
| ☐ A1. CO   | MM 100 or 104, MLL 111  |
|  | GL 101, 102, or 104   |
| ☐ A3. PH   | IL 100  |
| Ar   | ea B (9 units) : Scientific Inquiry & Quantitative Reasoning  |
| ☐ B1. Ph   | ysical Science  |
|  |   |
|  |   |
|  |   |
|  |   |
|  |   |
| ☐ B2. Life   | Science   |
| 🗆 B3. Lab  | poratory Activity   |
| □ B4. Qu   | antitative Reasoning (Must earn passing grade of C-/CR or better.)  |
| Area C (9  | units): Arts & Humanities - Minimum of two different discipline   |
|  | as designated by course prefix (e.g., ART, THEA, MUS)   |
| C1. Art  |   |
| C2. Hu   | manities  |
|  | ional Lower-division Area C Course in Arts (C1) or Humanities (C2)  |
|  | ional Lower-division Area C Course in Arts (C1) or Humanities (C2)<br>i units): Social Sciences - Minimum of two different disciplines a:   |
| ~1 ca D (C   | designated by course prefix (e.g., ANTH, ECON, POSC)  |
| □ D1.  | 0 (   |
| □ D2.  |   |
| ı  | Area E (3 units): Lifelong Learning and Self-Development  |
|  |   |
| □ E.   |   |
|  | Area F (3 units): Ethnic Studies  |
|  |   |
| □ F.   | omposition : Requires completion of GE A2 with a C-/CR or bette   |
| Second C   |   |
|  |   |
|  | Must be completed before attaining junior standing.   |
|  | Must be completed before attaining junior standing.  d Composition  |
| ☐ Second   | Must be completed before attaining junior standing.   |
| □ Second   | Must be completed before attaining junior standing.  Composition University Writing Requirement   |
| □ Second □ UWR U.S. Co   | Must be completed before attaining junior standing.  d Composition  |
| UWR U.S. Co  | Must be completed before attaining junior standing.  d Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units)   |
| UWR U.S. Co  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  |
| UWR U.S. Co  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  |
| □ Second □ UWR U.S. Co covering Code 1   | Must be completed before attaining junior standing.  d Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) g three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).   |
| UWR U.S. Co covering Coi Code 1  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  |
| UWR U.S. Co covering Coi Code 1  | Must be completed before attaining junior standing.  d Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  |
| UWR U.S. Co covering Code 1 Code 2 Upp   | Must be completed before attaining junior standing.  d Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) g three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. stitution), and US-3 (California State & Local Government).  de Composition of California State & Local Government).  de Composition of California State & Local Government).  |
| UWR U.S. Co covering Code 1 Code 2 Upp   | Must be completed before attaining junior standing.  d Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  |
| UWR U.S. Co covering Col Code 1 Code 2 Upp   | Must be completed before attaining junior standing.  d Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) g three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. stitution), and US-3 (California State & Local Government).  de Composition of California State & Local Government).  de Composition of California State & Local Government).  |
| UWR U.S. Co covering Cool Code 1 Code 2 Upp UD-B.  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) as three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  er Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences   |
| UWR U.S. Co covering Cool Code 1 Code 2 Upp UD-B.  | Must be completed before attaining junior standing.  I Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  der Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division,  |
| UWR U.S. Co covering Code 1 Code 2 Upp UD-B. UD-B. UD-C.U  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  de Polivision GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  |
| UWR U.S. Co covering Col Code 1 Code 2 Upp UD-B. UD-C.U UD-D. Overlay  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  der Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR) Upper-division Science Inquiry and Quantitative Reasoning Upper-division Arts OR Humanities Upper-division Social Sciences Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  |
| UWR U.S. Co covering Col Code 1 Code 2 Upp UD-B. UD-C.( UD-D. Overlay Social   | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) as three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  de Point of AI, A2, A3, and B4 with a C- (CR) Upper-division Science Inquiry and Quantitative Reasoning Upper-division Arts OR Humanities Upper-division Social Sciences Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div) Justice (SJ)  |
| UWR U.S. Co covering Col Code 1 Code 2 Upp UD-B. UD-C.( UD-D. Overlay Social   | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  der Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR) Upper-division Science Inquiry and Quantitative Reasoning Upper-division Arts OR Humanities Upper-division Social Sciences Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  |
| UWR U.S. Co covering Col Code 1 Code 2 Upp UD-B. UD-C.( UD-D. Overlay Social   | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) as three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  de Point of AI, A2, A3, and B4 with a C- (CR) Upper-division Science Inquiry and Quantitative Reasoning Upper-division Arts OR Humanities Upper-division Social Sciences Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div) Justice (SJ)  |
| UWR U.S. Co covering Cor Code 1 Code 2 Upp UD-B. UD-C.U UD-D. Overlay Social. Sustain  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) as three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  er Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Justice (SJ)  hability (S)  Concentration Courses   |
| UWR U.S. Co covering Con Code 1 Code 2 Upp UD-B. UD-C.U UD-C.U UD-C.U Social Sustain   | Must be completed before attaining junior standing.  I Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  de Polivision GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Justice (SI)  Inability (S)  Concentration Courses  elor of Arts degree, major in Biochemistry with a concentration in   |
| UWR U.S. Co covering Cool Code 1 Code 2 Upp UD-B. UD-C.U UD-D. Overlay Social Sustain  | Must be completed before attaining junior standing.  I Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  de Polivision GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Sustice (SI)  hability (S)  Concentration Courses  elor of Arts degree, major in Biochemistry with a concentration in Feducation, is designed for students interested in a career teaching.  |
| UWR U.S. Co covering Coil Code 1 Code 2 Upp UD-B. UD-C.U UD-D. Overlay Social Sustain The Bachrochemistry  | Must be completed before attaining junior standing.  I Composition University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units) as three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  er Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Justice (SJ)  hability (S)  Concentration Courses  elor of Arts degree, major in Biochemistry with a concentration in a the high school level, but also prepares students to work as  |
| UWR U.S. Co covering Con Code 1 Code 2 Upp UD-B. UD-B. UD-C.U. UD-B. Social Sustain The Bachc  | Must be completed before attaining junior standing.  I Composition  University Writing Requirement  de (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  de Polivision GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Sustice (SI)  hability (S)  Concentration Courses  elor of Arts degree, major in Biochemistry with a concentration in Feducation, is designed for students interested in a career teaching.  |
| UWR U.S. Co covering Coi Code 1 Code 2 Upp UD-B. UD-C.U DOverlay Social. Social. Social. Sustain The Bachchemistry biochemister biochemister a sie   | Must be completed before attaining junior standing.  I Composition  University Writing Requirement  Ide (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  I. In the completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Acts OR Humanities  Upper-division Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Justice (SI)  Inability (S)  Concentration Courses  Pelor of Arts degree, major in Biochemistry with a concentration in Education, is designed for students interested in a career teachin rat the high school level, but also prepares students to work as sts in an industrial setting. This program will prepare graduates to   |
| UWR U.S. Co covering Coi Code 1 Code 2 Upp UD-B. UD-C.U UD-D. Overlay Social Sustain The Bache Chemistry c | Must be completed before attaining junior standing.  I Composition University Writing Requirement  Ide (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  I. In this completion of A1, A2, A3, and B4 with a C- (CR) Upper-division Science Inquiry and Quantitative Reasoning Upper-division Arts OR Humanities Upper-division Social Sciences Requirements (9 units): Courses may be upper or lower division, and GE or major try (Div) Ustice (SI) Inability (S)  Concentration Courses Pelor of Arts degree, major in Biochemistry with a concentration in Education, is designed for students interested in a career teachin at the high school level, but also prepares students to work as sets in an industrial setting. This program will prepare graduates to nogle subject credential program.  Is Earth Systems Science Units: 4; S.E./G.R. Area: B1, B3;   |
| UWR U.S. Co covering Cor Code 1 Code 2 Upp UD-B. UD-C.U UD-D. Overlay Social Sustain The Bachchemistry chemistry che | Must be completed before attaining junior standing.  I Composition  University Writing Requirement  Ide (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  Ide Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR)  Upper-division Science Inquiry and Quantitative Reasoning  Upper-division Arts OR Humanities  Upper-division Social Sciences  Requirements (9 units): Courses may be upper or lower division, and GE or major  ty (Div)  Justice (SI)  Inability (S)  Concentration Courses  Pelor of Arts degree, major in Biochemistry with a concentration in at the high school level, but also prepares students to work as sts in an industrial setting. This program will prepare graduates to ngle subject credential program.  5 - Environmental Chemistry Units: 4 ; G.E./G.R. Area: B1, B3; illity |
| UWR U.S. Co covering Coi  Code 1  Code 2  Upp  UD-B.  UD-C.U  UD-D. Overlay  Diversi  Social  Sustaina  The Bacht Chemistry ch | Must be completed before attaining junior standing.  I Composition University Writing Requirement  Ide (American Institutions Requirement) - Two courses (6 units); three U.S. Code Requirements of US-1 (U.S. History), US-2 (U.S. nstitution), and US-3 (California State & Local Government).  I. In this completion of A1, A2, A3, and B4 with a C- (CR) Upper-division Science Inquiry and Quantitative Reasoning Upper-division Arts OR Humanities Upper-division Social Sciences Requirements (9 units): Courses may be upper or lower division, and GE or major try (Div) Ustice (SI) Inability (S)  Concentration Courses Pelor of Arts degree, major in Biochemistry with a concentration in Education, is designed for students interested in a career teachin at the high school level, but also prepares students to work as sets in an industrial setting. This program will prepare graduates to nogle subject credential program.  Is Earth Systems Science Units: 4; S.E./G.R. Area: B1, B3;   |

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