

Degree: Physics, B.A. 22-23

| Requirement Area | Course | Course Title | Prerequisites | Units |
|---------------------------------|---------------|------------------------------------------|---------------|--------|
| First Semester (FALL) | | | | |
| E | GS 101A | Foundations of Success I | | 1 |
| A1 | | Oral Communication | | 3 |
| LD Major/B1&B3 | PHYS 135 | Physics for Scientists and Engineers I | | 4 |
| LD Major/B4 | MATH 130 | Calculus I | | 4 |
| C1 | | Arts | | 3 |
| | | | Total: | 15 |
| Second Semester (SPRING) | | | | |
| E | GS 101B | Foundations of Success II | | 1 |
| A2 | | Written Communication | | 3 |
| LD Major | PHYS 136 | Physics for Scientists and Engineers II | | 4 |
| LD Major | MATH 131 | Calculus II | | 3 |
| C2 | | Humanities | | 3 |
| Elective | | | | 1 |
| | | | Total: | 15 |
| Third Semester (FALL) | | | | |
| E | | Lifelong Learning and Self-Development | | 1 |
| A3 | PHIL 100 | Workshop in Critical Thinking | | 3 |
| LD Major | PHYS 137 | Physics for Scientists and Engineers III | | 4 |
| D1/Code 1 | | Social Science/US Code | | 3 |
| B2 | | Life Science | | 3 |
| Elective | | | | 1 |
| | | | Total: | 15 |
| Fourth Semester (SPRING) | | | | |
| LD Major/Second Comp | PHYS 230 | Physical Reasoning | | 3 |
| LD Major | MATH 215 | Introduction to Linear Algebra | | 3 |
| Add'l C1 or C2* | | Arts or Humanities | | 3 |
| D2/Code 2 | | Social Science/US Code | | 3 |
| F | | Ethnic Studies | | 3 |
| | | | Total: | 15 |
| Fifth Semester (FALL) | | | | |
| UD Major | PHYS 350 | Quantum Mechanics I | MATH 230, | 3 |
| UD Major | PHYS 380 | Advanced Lab I | MATH 230, | 3 |
| UD Major | PHYS | Physics Elective | | 3 |
| UD Free Elective | | | | 3 |
| UD Free Elective | | | | 3 |
| | | | Total: | 15 |
| Sixth Semester (SPRING) | | | | |
| UD Major | PHYS 330 | Analytical Mechanics | MATH 230, | 3 |
| UD Major | PHYS 381 | Advanced Laboratory II: Experimental | PHYS 380 | 3 |
| UD Free Elective | | | | 3 |
| UD Free Elective | | | | 3 |
| UD Free Elective | | | | 3 |
| | | | Total: | 15 |
| Seventh Semester (FALL) | | | | |
| UD Major | PHYS 450 | Electromagnetism I | MATH 230, | 3 |
| UD Major | PHYS elective | | | 3 |
| UD Free Elective | | | | 3 |
| UD-C/Overlay | | | | 3 |
| UD-B/Overlay | | | | 3 |
| | | | Total: | 15 |
| Eighth Semester (SPRING) | | | | |
| UD-D/Overlay | | | | 3 |
| UD Major | PHYS 340 | Statistical Mech. & Thermo. | MATH 230, | 3 |
| UD Free Elective | | | | 3 |
| UD Free Elective | | | | 3 |
| UD Free Elective | | | | 3 |
| | | | Total: | 15 |
| Total Units: | | | | 120.00 |

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.

| 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) | |
| <input type="checkbox"/> A1. COMM 100 or 104, MLL 111 | |
| <input type="checkbox"/> A2. ENGL 101, 102, or 104 | |
| <input type="checkbox"/> A3. PHIL 100 | |
| Area B (9 units) : Scientific Inquiry & Quantitative Reasoning | |
| <input type="checkbox"/> B1. Physical Science | |
| <input type="checkbox"/> B2. Life Science | |
| <input type="checkbox"/> B3. Laboratory Activity | |
| <input type="checkbox"/> B4. Quantitative Reasoning (Must earn passing grade of C-/CR or better.) | |
| Area C (9 units): Arts & Humanities - Minimum of three different disciplines as designated by course prefix (e.g., ART, THEA, MUS) | |
| <input type="checkbox"/> C1. Arts | |
| <input type="checkbox"/> C2. Humanities | |
| *Additional Lower-division Area C Course in Arts (C1) or Humanities (C2) | |
| Area D (6 units) : Social Sciences - Minimum of three different disciplines as designated by course prefix (e.g., ANTH, ECON, POSC) | |
| <input type="checkbox"/> D1. | |
| <input type="checkbox"/> D2. | |
| Area E (3 units) : Lifelong Learning and Self-Development | |
| <input type="checkbox"/> E. | |
| Area F (3 units): Ethnic Studies | |
| <input type="checkbox"/> F. | |
| Second Composition : Requires completion of GE A2 with a C-/CR or better. Must be completed before attaining junior standing. | |
| <input type="checkbox"/> Second Composition | |
| 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). | |
| <input type="checkbox"/> Code 1. | |
| <input type="checkbox"/> Code 2. | |
| Upper Division GE Requirements (9 units): Should be taken after completion of A1, A2, A3, and B4 with a C- (CR) | |
| <input type="checkbox"/> UD-B. Upper-division Science Inquiry and Quantitative Reasoning | |
| <input type="checkbox"/> UD-C. Upper-division Arts OR Humanities | |
| <input type="checkbox"/> UD-D. Upper-division Social Sciences | |
| Overlay Requirements (9 units): Courses may be upper or lower division, and GE or major | |
| <input type="checkbox"/> Diversity (Div) | |
| <input type="checkbox"/> Social Justice (SJ) | |
| <input type="checkbox"/> Sustainability (S) | |
| Elective Courses | |
| Choose a minimum of 6 units from the following: | |
| CHEM 100 - Introduction to College Chemistry Units: 3 ; G.E./G.R. Area: B1, B3 | |
| CHEM 110 - General Chemistry for Engineering Units: 3 ; G.E./G.R. Area: B1, B3 | |
| CHEM 111 - General Chemistry I Units: 5 ; G.E./G.R. Area: B1, B3 | |
| CHEM 112 - General Chemistry II Units: 5 | |
| CS 100 - Programming for Everyone Units: 3 | |
| CS 101 - Computer Science I Units: 4 | |
| PHYS 104 - Musical Acoustics Units: 4 ; G.E./G.R. Area: B1, B3 | |
| PHYS 105 - How Things Work Units: 3 ; G.E./G.R. Area: B1 | |
| PHYS 106 - Physics for Future Leaders Units: 3 ; G.E./G.R. Area: B1; Sustainability | |
| PHYS 107 - Science of Energy Units: 3 ; G.E./G.R. Area: B1; Sustainability | |
| PHYS 108 - Astronomy of Indigenous Cultures Units: 3 ; G.E./G.R. Area: B1; Diversity | |
| PHYS 115 - Elementary Physics Units: 3 ; G.E./G.R. Area: B1, B3 | |
| ASTR 138 - Descriptive Astronomy Units: 3 ; G.E./G.R. Area: B1 | |
| ASTR 139 - Astronomy Laboratory Units: 1 ; G.E./G.R. Area: B3 | |
| PHYS 303 - Biophysics Units: 3 ; G.E./G.R. Area: UD-B | |
| ASTR 337 - Extrasolar Planets Units: 3 ; G.E./G.R. Area: UD-B | |
| ASTR 338 - The Cosmos Units: 3 ; G.E./G.R. Area: UD-B | |
| ASTR 339 - Stars and Galaxies Units: 3 ; G.E./G.R. Area: UD-B | |
| PHYS 351 - Quantum Mechanics II Units: 3 | |
| PHYS 360 - Selected Topics Units: 1 | |
| PHYS 451 - Electromagnetism II Units: 3 | |
| PHYS 460 - Astrophysics Units: 3 | |
| PHYS 461 - Atomic Physics Units: 3 | |
| PHYS 462 - Solid State Physics Units: 3 | |
| PHYS 463 - Particle Physics Units: 3 | |
| PHYS 480 - Advanced Laboratory III: Modeling, Design, and Analysis Units: 3 | |
| PHYS 481 - Advanced Laboratory IV: Projects Units: 3 | |
| PHYS 497 - Issues in Physics Units: 3 | |
| SCI 308 - Hands-On Science Teaching Units: 1 | |

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