SECONDARY EDUCATION: BIOLOGY EDUCATION
College of Education and Human Resources

Degree Benefits
For more than 150 years, Cal U education programs have enjoyed an excellent reputation, with graduates teaching in nearly every state. Secondary Education programs meet the standards of accrediting agencies. The University is accredited by the Middle States Association of Colleges and Universities, and the College of Education is accredited by the National Council for Accreditation of Teacher Education. This program is approved by the Pennsylvania Department of Education for teacher certification.

Job Options
The biology education program leads to Pennsylvania Teacher Certification to teach Biology in grades 7-12. Most of our graduates pursue careers in teaching. Some graduates have also pursued employment in other educational settings.

Program Objectives
Students acquire the knowledge, attitudes, skills and understanding necessary to becoming an effective educator in a specific content area. This balances the need to be an expert in a subject area and the need to have strong teaching skills. Students participate in early and continuous field experiences that approximate full-time employment appropriate to certification. This is a coherent program organized by educators to meet current standards and trends in education that is also enriched by extensive studies in the subject area (biology). The program includes a focus on technology integration, teaching and learning strategies, and standards-based education (including the Common Core Standards).

Certification Program
Admission to the certification program requires:
• 2.80 GPA
• Successful completion of the PAPA assessments
• Successful completion of a three-credit American/English literature course and a three-credit English composition course
• Successful completion of six credits of college level math
• Current Act 34 (criminal record) Act 114 (fingerprinting), and Act 151 (child abuse) clearances
The above requirements must be made by the time you earn 65 credits. Additional time is provided for transfer students.

University Resources
Students have the opportunity to student teach in younger grades, and in secondary grades under the supervision of a qualified teacher and a University professor. Prior to student teaching, they gain experience by assignment to various school settings to observe and report their observations in their education courses. Students also receive individual advising and guidance from permanent faculty members in the Department of Secondary Education and Administrative Leadership.

BACHELOR OF SCIENCE PROGRAMS IN SECONDARY EDUCATION — 121-124 CREDITS

Programs
Secondary certification is offered in Art (K-12), Biology, Chemistry, Communication, Earth and Space Science, English, Mathematics, (Spanish K-12), Social Studies and Physics.

The department also offers several graduate programs including: educational administration (Principals and Superintendents Letter of Eligibility), and advanced studies in secondary education and leadership. Individuals with bachelor's degrees in one of our approved areas may also become certified through the Master of Arts Teaching program.

All Pennsylvania teachers must pass the PAPA test and Praxis II examinations for certification. Art education students also must pass the Fundamental Subjects test. A grade-point average of 3.0 must be maintained overall.

The eight-semester schedule of courses on the other side of this sheet provides a recommended framework for completing this program of study in four years. Additional details are available from the department. To ensure that they are making satisfactory academic progress, students should consult with their faculty adviser, ensure that they complete necessary prerequisites and required courses in sequence, and complete a minimum of 15 credits each semester.
### Freshman Year

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<tr>
<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
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| First Semester| ENG 101 English Composition I ..........................................................3 crs.  
               | UNI 100 First-Year Seminar ..................................................................1 cr.  
               | MAT 199 Pre-calculus ............................................................................3 crs.  
               | PSY 100 Psychology ...............................................................................3 crs.  
               | BIO 120 Zoology ....................................................................................4 crs. | 14 |
| Second Semester| Literature Course ................................................................ ..................3 crs.  
                  | ESP 210 Special Education Foundations .............................................3 crs.  
                  | Math course ..........................................................................................3 crs.  
                  | BIO 125 Botany .....................................................................................4 crs. | 16 |

### Sophomore Year

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<th>Semester</th>
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| Third Semester| PSY 206 Adolescent Psychology ..................................................................3 crs.  
                  | BIO 215 Cellular and Molecular ..................................................................4 crs.  
                  | CHE 101 Chemistry I ...............................................................................4 crs.  
                  | SEC 210 Intro to Secondary Education ..................................................3 crs.  
                  | SEC 220 Standards-Based Instruction ..................................................3 crs. | 17 |
| Fourth Semester| CHE 102 Chemistry II .............................................................................4 crs.  
                   | BIO 248 Ecology ....................................................................................4 crs.  
                   | EDU 333 Technology for Teaching .........................................................3 crs.  
                   | EDU 310 Teaching in a Multicultural Society .........................................3 crs.  
                   | ESP 311 Assessment and Positive Behavior ............................................3 crs. | 17 |

### Junior Year

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<th>Semester</th>
<th>Courses</th>
<th>Credits</th>
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| Fifth Semester| BIO 305 or 306 .....................................................................................4 crs.  
                  | SEC 310 Strategies .................................................................................3 crs.  
                  | SEC 350 Content Area Literacy ................................................................3 crs.  
                  | SEC 360 Technology Integration ..........................................................3 crs. | 13 |
| Sixth Semester| BIO 328 or 486 .....................................................................................4 crs.  
                   | BIO 318 Genetics ...................................................................................4 crs.  
                   | SEC 400 Classroom Management ................................................................3 crs.  
                   | SEC 420 Assessment and Interventions ....................................................3 crs. | 14 |
| Seventh Semester| SEC 395 Teaching of Science ..................................................................3 crs.  
                   | EDU 350 Supporting English Language Learners .......................................3 crs.  
                   | ESP 413 Evidence-based Practices ........................................................3 crs.  
                   | PHYS 111 Physics ....................................................................................4 crs.  
                   | HPE 314 First Aid ....................................................................................3 crs. | 16 |
                   | SEC 461 Student Teaching ........................................................................12 crs. | 15 |

### Program Contact Information

Contact the Secondary Education by phone at 724-938-4140.

### Department Website

[www.calu.edu/academics/programs/secondary-education](http://www.calu.edu/academics/programs/secondary-education)