

# B.S.Ed. in Middle Level Grades 4-8 Education: Science to M.Ed. in Integrative STEM Education K-12

## Program Description

The science concentration of the Bachelor of Science in Education (B.S.Ed.) in Middle Level Education degree prepares students to teach science to children in grades 4 through 8. Upon successful completion of this program, students will earn a bachelor's degree and be eligible for Pennsylvania teaching certification.

Qualified undergraduate students in this concentration may be eligible to participate in the accelerated B.S.Ed.-to-M.Ed. program, which enables them to take graduate courses that apply to both their B.S.Ed. in Middle Level Education: Science and (thereafter) a master's in integrative STEM education K-12.

The Master of Education (M.Ed.) in Teacher Education: Integrative STEM Education K-12 focuses on best practices for developing rigorous, relevant, innovative and engaging integrative practices for incorporating STEM principles across disciplines.

Through the accelerated program, students can complete both degrees at Cal U with a total of 142 credits.

## Program Coordinator

Dr. Diane Fine

## Accreditation

These programs are approved by the Pennsylvania Department of Education. Cal U's education programs have also been accredited by the National Council for Accreditation of Teacher Education (NCATE) since 1954, and we are continuing with the successor organization, the Council for the Accreditation of Educator Preparation (CAEP).

## Curriculum

The following curriculum shows the requirements for completing the bachelor's degree under the accelerated B.S.Ed.-to-M.Ed. program. Additional graduate-level courses are required to complete the master's degree; refer to the graduate academic catalog for these requirements.

Course	Credits
<b>General Education Courses</b>	<b>40 or 41</b>
<i>Building a Sense of Community</i> <b>UNI 100</b> First-Year Seminar	1
<i>Composition</i> <b>ENG 101</b> English Composition I	3
<i>Public Speaking</i> <b>EDU 350</b> Supporting English Language Learners	3
<i>Mathematics and Quantitative Literacy</i> <b>MAT 181</b> College Algebra	3
<i>Health and Wellness</i> <b>CHD 250</b> Teaching Health and Physical Education	3
<i>Technological Literacy</i> <b>EDU 333</b> Technology for Teaching and Learning	3

## Accelerated Bachelor's-to-Master's Degree Programs

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Course	Credits
<i>Humanities</i> <b>ESP 210</b> Special Education Foundations and Collaboration	3
<i>Fine Arts</i> Any Fine Arts Course	3
<i>Natural Sciences</i> <b>PHS 120</b> Basic Physical Science with Lab	3 or 4
<i>Social Sciences</i> <b>GEO 102</b> Geographic Systems for Elementary Education (1 credit) AND <b>POS 102</b> American Government for Elementary Education (1 credit) AND <b>ECO 102</b> Economics for Elementary Education (1 credit)	3
<i>Ethics and Multicultural Emphasis</i> <b>CHD 350</b> Family and Community Collaborations	3
<i>General Education Options</i> <ul style="list-style-type: none"> <li>• <b>MAT 130</b> Elementary Topics II</li> <li>• British/American Lit Course (from approved list)</li> <li>• <b>HIS 101</b> U.S. History to 1877 OR <b>HIS 102</b> U.S. History since 1877</li> </ul>	9
<b>Required Major Courses</b>	<b>45</b>
<b>ELM 200</b> Intro to Middle Level Ed	3
<b>ELM 220</b> Instruction and Assessment in Grades 4-8	3
<b>ELM 301</b> Reading Methods, Assessments and Interventions (Grades 4-8)*	3
<b>ELM 302</b> Language Arts Methods, Assessments and Interventions*	3
<b>ELM 311</b> Math Methods, Assessments and Interventions*	3
<b>ELM 321</b> Science Methods, Assessments and Interventions*	3
<b>ELM 331</b> Social Studies Methods, Assessments and Interventions*	3
<b>EDE 751</b> Building Scientific Literacy and Understanding through Inquiry	3
<b>ELM 415</b> Middle Level Education Field Experience*	3
<b>CHD 413</b> Content Area Literacy Field Experience*	3

## Accelerated Bachelor's-to-Master's Degree Programs

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Course	Credits
<b>CHD 450</b> Assessment and Data Literacy*	3
<b>ELM 461</b> Student Teaching and School Law*	12
<b>Concentration Courses</b>	<b>18</b>
<b>EDE 750</b> Foundations of Integrative STEM Ed. K-12	3
Select one Earth Science course from approved list, in consultation with adviser	4
Select one Physical Science course from approved list, in consultation with adviser	4
<b>BIO 120</b> General Zoology OR <b>BIO 125</b> General Botany	4
Select one science concentration course from approved list, in consultation with adviser	3
<b>Required Related Courses</b>	<b>15</b>
<b>ESP 311</b> Assessment and Positive Behavior Interventions	3
<b>ESP 412</b> Evidence Based Practices*	3
<b>PSY 206</b> Adolescent Psychology	3
<b>PSY 208</b> Educational Psychology (PSY 100 waived)	3
<b>MAT 215</b> Statistics	3
<b>Free Electives</b>	<b>3</b>
<b>EDE 701</b> Standards Aligned Curriculum, Instruction and Assessment	3
<b>Total</b>	<b>121</b>

Additional requirements, not counted toward the General Education requirements, include:

- **Special Experience Course (1 course required):** ELM 461 Student Teaching and School Law
- **Writing-Intensive Component Courses (2 courses required):** ELM 415 Middle Level Education Field Experience AND CHD 413 Content Area Literacy Field Experience
- **Laboratory Course (1 course required):** PHS 120 Basic Physical Science with Lab

\* Courses marked with an asterisk are restricted to candidates admitted to Teacher Education.

**Program Notes:**

## Accelerated Bachelor's-to-Master's Degree Programs

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- All courses required for certification with C- or lower must be repeated.
- All ELM, CHD and ESP courses require current clearances and minimum 2.5 GPA to register for courses, except ELM 200 and 220, which require 2.0 GPA to register.
- Candidates must follow policies for Admission to Teacher Education as stated in the Teacher Education Handbook.
- Pre-requisite for ELM 220 and all 300-level ELM and CHD courses is ELM 200.
- State licensure exams must be passed before student teaching.
- Current clearances are required prior to enrolling in program courses.
- Undergraduate students must achieve at least junior standing to take graduate-level coursework.
- Approved American/British Literature Courses are: ENG 107, 125, 127, 148, 150, 155, 160, 203, 301, 302, 337, 338 and HON 250. (HON 250 has a pre-requisite of HON 150; the 300-level ENG courses have pre-requisites of ENG 101 and 102.)
- Please consult with your science education adviser before selecting from the following concentration courses: EAS 104, 105, 142, 163; ENS 101; GLG 150, 210; PHS 121, 122, 137, 145; CHE 101, 103.

## Additional Requirements

Students accepted into a teacher certification program must be admitted to Teacher Education before they may register for upper-level, restricted courses. Please refer to the Teacher Education Program Student Handbook for details on Admission to Teacher Education requirements.

Undergraduate students in the accelerated program may register for no more than 6 graduate credits in any one term, and in terms when a graduate course is registered, the student may not register for more than 18 total credits.

It is the student's responsibility to apply and meet the qualifications of the graduate program portion of the accelerated program. Failure to follow through with enrollment in the accelerated graduate program will result in additional undergraduate credits to complete the bachelor's degree, as outlined in the Undergraduate Credit for Graduate Courses policy.

Additional accelerated program requirements may be found at: [https://www.calu.edu/inside/forms/\\_files/academic-affairs/accelerated-program-application.pdf](https://www.calu.edu/inside/forms/_files/academic-affairs/accelerated-program-application.pdf)

## Program Webpages

- **Undergraduate:** <https://www.calu.edu/academics/undergraduate/bachelors/middle-level-education/science.aspx>
- **Graduate:** <https://www.calu.edu/academics/graduate/masters/stem/index.aspx>