

Presentation to DBER

Introducing the STEM Education Certificate

(New this semester!)

Supporting students - improve STEM majors ability to communicate STEM concepts and work effectively with others in a variety of collaborative environments.

Service opportunities for STEM majors teaching STEM in local schools and communities.

Recruiting STEM majors to CU Teach (as well as facilitate opportunities to get their secondary math/sci teaching license)

Appears on students transcripts

Student Eligibility: Degree-seeking students majoring in Math, Science, or Engineering (through Engineering Plus) are eligible to enroll in the STEM Education Certificate. Students must have an overall GPA of 2.75, and maintain at least a 3.0 GPA in the STEM Education Certificate courses.

Courses included in the STEM Education Certificate are also applicable to the curriculum for obtaining licensure in secondary math or science; thus, students who decide to pursue a STEM secondary teaching license will be able to do so in a timely manner (~2 additional semesters + student teaching).

1. Coursework

Course Title	Course Number	Credits
Step 1: Inquiry Approaches to Teaching <i>U!</i>	EDUC 2020	1
Becoming a Learning Assistant	EDUC 4610	2
Step 2: Inquiry-Based Lesson Design	EDUC 2030	2
Knowing and Learning in Mathematics and Science	EDUC 4050	3
<i>Qæ} ^Ac, [)</i> Teaching and Learning Biology	EDUC/MCDB 4811	3
Teaching and Learning Chemistry	EDUC 4822	3
Teaching and Learning Earth Systems	EDUC 4833	3
Teaching and Learning Physics	EDUC/PHYS 4460	3
Teaching Design	GEEN 4400	3
Teaching K-12 Mathematics: Geometry and Measurement	EDUC 5830	3
Teaching K-12 Mathematics: Probability and Statistics	EDUC 5840	3
Perspectives on Mathematics	EDUC 5317	3
Total		12-13 credits



2. Additional 15 hours of STEM outreach in informal settings

(Science Discovery, Fiske Planetarium, WOW! Children's Museum, Science Fair judging, etc.)

How Did you Find Out about CU Teach?

(~3000 student responses from 2009-2018)

Friend / CU Teach student	18%
CU Teach Website	13%
Advisor (major, dept)	13%
Professor / Instructor	13%
Advisor, SOE	8%
Lecture Visits	6%
Flyer (on campus)	5%
Parent or Sibling	4%
Letter from CU Teach	5%
LA Program	4%
Other	8%

Step 1 (n= 342)			Step 2 (n= 185)	
Integrative Physiology	19%		Math	27%
Engineering	17%		EBio	15%
Math	16%		Engineering	12%
EBio	14%		Integrative Physiology	8%
Physics	7%		MCD Biology	7%
MCD Biology	6%		Physics	7%
Astronomy	5%		Astronomy	6%
Chemistry	5%		Chemistry	5%

Opportunities for STEM faculty

Support the CU Teach program

Recruiting STEM majors into secondary teaching licensure programs

Increasing visibility/status of CU Teach to STEM majors on campus

Training pre-service secondary STEM teachers and maintaining content-rigor of the program

Collaborating to provide Professional Development for inservice teachers (as service to Mentor teachers)

Opportunities for STEM faculty

Participate as content experts in negotiations with districts
In development of curricula aligned with **NGSS** that are both relevant to today's issues in STEM fields and able to prepare students for CU Boulder introductory courses
In aligning with industry partners to help teachers establish occupational experience

Support the CU Teach mentor teachers and Colorado Teachers in obtaining a Master's Degree in a Science Content, Mathematics or Engineering.

Opportunities for STEM faculty

If you would like to be more involved in the CU Teach program, please let Jeff or Julie know.

julie.andrew@colorado.edu

writer@colorado.edu

Any other Suggestions?

Questions for Discussion

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The goals of CU Teach are congruent with the Academic Futures report - are there opportunities to leverage this opportunity?

How can we support the CU Teach program in

- Recruiting STEM majors into secondary teaching

- Training secondary STEM teachers

Extra Slides

STEM-endorsed high school diploma

The endorsement extends Colorado's recently revised high school graduation requirements, enabling students to prove their proficiency in STEM-related subjects and concepts, rather than simply getting credit for time spent in their seat. Students obtain the STEM endorsement through four requirements, through their local school district:

1. Complete the school's high school graduation requirements at a high level of proficiency
2. Complete a coherent sequence of at least four STEM courses
3. Achieve a minimum score on one of several specified mathematics assessments, and
4. Successfully complete a final capstone project that demonstrates a high proficiency level of mastery

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CTE STEM endorsement for teachers

Schools receive additional state funding if they have teachers with the CTE STEM endorsement

1. Content Knowledge (post-secondary coursework, industry license, PLACE/PRAXIS scores)
2. Occupational Experience (non-teaching experience in content area)