

New Program Proposal

Date Submitted: 11/11/20 3:24 pm

Viewing: **STEMCP : STEM Education, Certificate of Proficiency**

Last edit: 12/10/20 11:18 am

Changes proposed by: seb010

Submitter: User ID: seb010 Phone:
575-3785

Program Status Active

Academic Level Undergraduate

Type of proposal Certificate

Select a reason for this new program Adding New Undergraduate Certificate of Proficiency (6-21 semester hours)--(LON)

Effective Catalog Year Fall 2021

College/School Code
College of Education and Health Professions (EDUC)

Department Code
Department of Curriculum and Instruction (CIED)

Program Code STEMCP

Degree Certificate of Proficiency

CIP Code

In Workflow

1. EDUC Dean Initial
2. Provost Initial
3. Director of Program Assessment and Review
4. Registrar Initial
5. Institutional Research
6. CIED Chair
7. EDUC Curriculum Committee
8. ARSC Dean
9. EDUC Dean
10. Global Campus
11. Provost Review
12. University Course and Program Committee
13. Faculty Senate
14. Provost Final
15. Provost's Office-- Documentation sent to System Office
16. Higher Learning Commission
17. Board of Trustees
18. ADHE Final
19. Provost's Office-- Notification of Approval
20. Registrar Final
21. Catalog Editor Final

Approval Path

1. 11/11/20 1:41 pm
Ketevan

- Mamiseishvili
(kmamisei):
Rollback to Initiator
2. 11/11/20 8:29 pm
Ketevan
Mamiseishvili
(kmamisei):
Approved for EDUC
Dean Initial
3. 11/12/20 7:55 am
Terry Martin
(tmartin): Approved
for Provost Initial
4. 11/17/20 10:45 am
Alice Griffin
(agriffin): Approved
for Director of
Program
Assessment and
Review
5. 11/30/20 1:11 pm
Lisa Kulczak
(lkulcza): Approved
for Registrar Initial
6. 11/30/20 1:53 pm
Gary Gunderman
(ggunderm):
Approved for
Institutional
Research
7. 11/30/20 1:54 pm
Ed Bengtson
(egbengts):
Approved for CIED
Chair
8. 12/02/20 2:42 pm
Ketevan
Mamiseishvili
(kmamisei):
Approved for EDUC

- Curriculum Committee
- 9. 12/04/20 8:52 am
Jeannie Hulen (jhulen): Approved for ARSC Dean
- 10. 12/04/20 9:31 am
Ketevan Mamiseishvili (kmamisei): Approved for EDUC Dean
- 11. 12/04/20 10:32 am
Suzanne Kenner (skenner): Approved for Global Campus
- 12. 12/08/20 4:06 pm
Terry Martin (tmartin): Approved for Provost Review
- 13. 12/19/20 7:25 am
Alice Griffin (agriffin): Approved for University Course and Program Committee

13.0101 - Education, General.

Program Title

STEM Education, Certificate of Proficiency

Program Delivery

Method

On Campus

Is this program interdisciplinary?

Yes

College(s)/School(s)

| |
|---|
| College/School Name |
| Fulbright College of Arts and Sciences (ARSC) |

Does this proposal impact any courses from another College/School?

Yes

College(s)/School(s)

College/School Name

Fulbright College of Arts and Sciences (ARSC)

What are the total
hours needed to
complete the
program?

9

Program Requirements and Description

Requirements

The Certificate in STEM Education is for STEM majors interested in acquiring valuable communication skills in these complex subject areas, developing a deeper understanding of how people think about and learn these subjects, and applying research-based strategies to engage others in understanding these subjects.

The 9 credit hour Certificate in STEM Education is not a minor or teacher licensure program. However, these courses can be applied to the undergraduate Minor in STEM Education and also the teacher licensure program that prepares students for secondary licensure in the following subjects: Mathematics, Biology, Chemistry, Physics, or Computer Science. For questions about teacher licensure, please visit the [Office of Teacher Education](#). Students may also consider the one-year Master of Arts in Teaching program as a path to teacher licensure.

| | | |
|---|--|---|
| STEM 2003 THE ART OF STEM COMMUNICATION | Course STEM 2003 THE ART OF STEM COMMUNICATION Not Found | 3 |
| Electives chosen from: (3 hrs must be 3000/4000 level) | | 6 |
| ARSC 1201 INTRODUCTION TO TEACHING STEM SUBJECTS | Course ARSC 1201 INTRODUCTION TO | |
| & ARSC 1212 FIELD EXPERIENCE IN TEACHING STEM SUBJECTS | TEACHING STEM SUBJECTS Not Found | |
| | and Course ARSC 1212 FIELD EXPERIENCE IN TEACHING STEM SUBJECTS Not Found | |
| <u>STEM 2103</u> | Knowing and Learning in Science and Mathematics | |
| <u>STEM 4333</u> | History and Philosophy of Science for Science Teachers | |
| <u>CATE 4073</u> | Introduction to Teaching Programming in the Secondary Schools | |
| BIOL 3273 INQUIRY AND MODELING IN SCIENCE EDUCATION | Course BIOL 3273 INQUIRY AND MODELING IN SCIENCE EDUCATION Not Found | |

CHEM 3273 INQUIRY AND MODELING IN SCIENCE EDUCATION

Course CHEM 3273 INQUIRY AND MODELING IN SCIENCE EDUCATION Not Found

PHYS 3273 INQUIRY AND MODELING IN SCIENCE EDUCATION

Course PHYS 3273 INQUIRY AND MODELING IN SCIENCE EDUCATION Not Found

MATH 2903

EDST 4113

Functions, Foundations and Models
Teaching and Funding Outdoor & Informal Education

Total Hours

9

8-Semester Plan

Program Costs

No new cost is associated with this new certificate. The courses used for the Certificate in STEM Education are used in the STEM Education Minor (former UAteach minor).

Library Resources

N/A

Instructional

Facilities

N/A

Faculty Resources

No new faculty resources are needed to deliver the new Certificate in STEM Education.

List Existing Certificate or Degree Programs that Support the Proposed Program

| Program(s) |
|---|
| BIOLBA - Biology, Bachelor of Arts |
| BIOLBS - Biology, Bachelor of Science |
| CHEMBS - Chemistry, Bachelor of Science |
| MATHBA - Mathematics, Bachelor of Arts |
| MATHBS - Mathematics, Bachelor of Science |
| PHYSBA - Physics, Bachelor of Arts |
| PHYSBS - Physics, Bachelor of Science |

Are Similar Programs available in the area?

No

Estimated Student Demand for Program 50

Scheduled Program Review Date 2029-2030

Program Goals and Objectives

Program Goals and Objectives

To attract STEM majors to explore issues in STEM literacy and develop communication strategies from the field of education that will be beneficial to any STEM-related career.

To increase the pool of potential teachers of STEM subjects to help address the critical shortage of teachers in math, science, and computer science at the secondary level.

To increase enrollment in the STEM education (former UAteach) courses to keep them viable and offered on a regular basis to ensure that the University of Arkansas will be able to continue to prepare math, science, and computer science teachers at the secondary level.

Learning Outcomes

Learning Outcomes

Students who earn this certificate in STEM Education will improve their ability to communicate STEM concepts from fields such as science, engineering, medical professions, mathematics

Students who earn this certificate in STEM Education will be able to explain STEM topics in a way that engages a class or other audience, using research-based strategies.

Students who earn this certificate in STEM Education will have a deeper understanding of how people learn math, science, and computer science.

Students who earn this certificate in STEM Education will have an opportunity to explore their interests by choosing three elective courses relating to STEM education.

Students who earn this certificate in STEM Education can apply up to 9 hours that will transfer to the Minor in STEM Education. To earn the Minor in STEM Education, students will earn 15 credit hours in STEM education courses that can be applied to the teacher licensure program for Math, Biology, Chemistry, Physics, or Computer Science if they decide to become teachers.

Description and Justification for this request

Description of request

Justification for request

| Description of request | Justification for request |
|--|---|
| To create a new 9 hour STEM Education Certificate. | Of the vast number of STEM majors on campus, most will enter professions where communicating complex information in science, math, computer science, engineering, medical professions, etc. is highly valued. Offering a certificate in STEM education in which STEM majors can learn valuable skills for explaining and teaching information in any employment situation will be an important contribution to the purpose of this university and to future employers of these students. Most STEM majors have 9 credits of free electives, which will allow this certificate to fit into their degree plans. Not only will the experience of the certificate courses benefit the students, it serves as a gateway into becoming a teacher of STEM subjects, exposing students to the idea of taking more courses to earn teacher licensure while earning their STEM degree. Most of the courses in the certificate can be applied to the Minor in STEM Education or to the teacher licensure program for math, biology, chemistry, physics, and computer science. Attracting STEM majors to the certificate program will increase the pool of students who may decide to continue on to become teachers. |

Upload attachments

[STEMCP - New Certificate - Supporting Documentation.docx](#)

[4x_stemcp_newcertificate_ltrofnotification_12182020.pdf](#)

Reviewer Comments

Ketevan Mamiseishvili (kmamisei) (11/11/20 1:41 pm): Rollback: Please build a course table.

Ketevan Mamiseishvili (kmamisei) (11/11/20 8:29 pm): Added the LON.

Alice Griffin (agriffin) (11/16/20 9:50 am): Inserted course titles for pending courses. Both are currently pending approval.

Alice Griffin (agriffin) (11/16/20 10:49 am): Changed the program code from STEM-C to STEMCP to match campus naming convention.

Alice Griffin (agriffin) (11/16/20 10:54 am): Also changed Program Title from Certificate in STEM Education to STEM Education, Certificate of Proficiency, to match campus naming convention.

Alice Griffin (agriffin) (11/17/20 9:59 am): Updated science courses with proposed name changes. Each are in the approval workflow.

Alice Griffin (agriffin) (11/17/20 10:01 am): Changed scheduled program review after consulting with department.

Alice Griffin (agriffin) (11/17/20 10:44 am): Inserted supporting documentation into the LON. Renamed documents to the BOT naming convention.

Gary Gunderman (ggunderm) (11/30/20 1:53 pm): I edited the CIP Code from 13.9999 to 13.0101. The text of the letters will need to be changed prior to submission.

Ketevan Mamiseishvili (kmamisei) (11/30/20 2:57 pm): Updated the CIP Code from 13.9999 to 13.0101 in the LON.

Alice Griffin (agriffin) (12/10/20 11:08 am): Corrected course title for ARSC 1201. Approved course title change had not carried over to curriculum inventory.

Alice Griffin (agriffin) (12/10/20 11:16 am): Revised approval dates in the LON.