

Date Submitted: 10/17/18 3:58 pm

Viewing: **STEMGC : STEM Education for K-6 Early Childhood (K-4) Graduate Certificate**

Last approved: 06/02/17 10:08 am

Last edit: 10/18/18 11:28 am

Changes proposed by: vcarter

Catalog Pages Using
this Program

[STEM Education for Early Childhood \(K-4\) \(STEM\)](#)

Submitter:	User ID:	lkulcza	Phone:
7456			
Program Status	Active		
Academic Level	Graduate		
Type of proposal	Certificate		
Select a reason for this modification			
Changing Name of Existing Certificate, Degree, Major, Option or Organizational Unit—(LON 1)			
Effective Catalog Year	Fall 2019		
College/School Code	College of Education and Health Professions(EDUC)		
Department Code	Department of Curriculum and Instruction(CIED)		
Program Code	STEMGC		
Degree	Graduate Certificate		
CIP Code			

In Workflow

1. EDUC Dean Initial
2. GRAD Dean Initial
3. Director of Program Assessment and Review
4. Registrar Initial
5. Institutional Research
6. CIED Chair
7. EDUC Curriculum Committee
8. EDUC Faculty
9. EDUC Dean
10. Global Campus
11. Provost Review
12. University Course and Program Committee
13. Graduate Committee
14. Faculty Senate
15. Provost Final
16. ADE Licensure Approval
17. Provost's Office-- Notification of Approval
18. Registrar Final
19. Catalog Editor Final

Approval Path

1. 10/05/18 2:49 pm
Ketevan Mamiseishvili (kmamisei):

- Approved for EDUC
Dean Initial
2. 10/05/18 3:19 pm
Pat Koski (pkoski):
Approved for GRAD
Dean Initial
 3. 10/10/18 10:50 am
Alice Griffin
(agriffin): Rollback
to Initiator
 4. 10/17/18 4:03 pm
Ketevan
Mamiseishvili
(kmamisei):
Approved for EDUC
Dean Initial
 5. 10/17/18 4:19 pm
Pat Koski (pkoski):
Approved for GRAD
Dean Initial
 6. 10/17/18 6:22 pm
Alice Griffin
(agriffin): Approved
for Director of
Program
Assessment and
Review
 7. 10/17/18 9:05 pm
Lisa Kulczak
(lkulcza): Approved
for Registrar Initial
 8. 10/18/18 9:39 am
Gary Gunderman
(ggunderm):
Approved for
Institutional
Research
 9. 10/18/18 11:29 am
Cheryl Murphy
(cmurphy):

- Approved for CIED
Chair
10. 10/18/18 11:37 am
Ketevan
Mamiseishvili
(kmamisei):
Approved for EDUC
Curriculum
Committee
11. 10/18/18 11:37 am
Ketevan
Mamiseishvili
(kmamisei):
Approved for EDUC
Faculty
12. 10/18/18 11:38 am
Ketevan
Mamiseishvili
(kmamisei):
Approved for EDUC
Dean
13. 10/18/18 2:50 pm
Miran Kang (kang):
Approved for Global
Campus
14. 10/18/18 3:03 pm
Terry Martin
(tmartin): Approved
for Provost Review
15. 10/29/18 11:06 am
Alice Griffin
(agriffin): Approved
for University
Course and Program
Committee
16. 11/16/18 9:15 am
Pat Koski (pkoski):
Approved for
Graduate
Committee

History

1. May 17, 2016 by
Lisa Kulczak (lkulcza)
2. May 25, 2017 by
Karen Turner
(kjvestal)
3. Jun 2, 2017 by
Charlie Alison
(calison)

13.1202 - Elementary Education and Teaching.

Program Title

STEM Education for **K-6** ~~Early Childhood (K-4)~~ Graduate Certificate

Program Delivery

Method

On Campus

Is this program interdisciplinary?

No

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

No

What are the total **14**
hours needed to
complete the
program?

Program Requirements and Description

Requirements

Graduate Certificate in STEM Education for **K-6: ~~Early Childhood (K-4)~~**

Required courses:

STEM 4033	Introduction to STEM Education	3
STEM 5033	Introduction to STEM Education	3

or <u>STEM 4033</u>	Introduction to STEM Education	
<u>STEM 5023</u>	Creativity and Innovation in STEM	3
or <u>STEM 4043</u>	<u>Course STEM 4043 Not Found</u>	
<u>CIED 5032</u>	Curriculum Design Concepts for Teachers	2
<u>STEM 5203</u>	Problem-Based Mathematics	3
<u>STEM 5213</u>	Teaching Problem-Based Science in the Elementary Grades	3

In addition to the required courses, students will maintain a minimum 3.0 GPA; pass Praxis II; complete a year-long internship placement in a local school; and complete an action-research project.

Are Similar Programs available in the area?

No

Estimated Student Demand for Program na

Scheduled Program Review Date na

Program Goals and Objectives

Program Goals and Objectives

Provide future and current elementary and middle level teachers with the knowledge, skills, aptitudes, and tools necessary to make positive and lasting differences in the lives of their current and future students through integrated STEM education. ~~na~~

Provide a creative, and critical-thinking environment, where engaging STEM (Science, Technology, Engineering, and Math) content is the foundation and learning is delivered through real-world connections, project based learning, and performance-based assessment.

Nurture STEM confidence, develop the ability to lead a comprehensive STEM program, and foster a passion for STEM learning among elementary and middle level teacher education candidates and practicing teachers.

Learning Outcomes

Learning Outcomes

Develop a theoretically informed argument for embedding mathematical and scientific thinking strategies across the curricula; ~~na~~

Demonstrate a basic knowledge of the national standards in the fields of science, technology, engineering and mathematics education; as well as basic knowledge of national and state standards;

Demonstrate the ability to synthesize relevant information regarding the use of STEM thinking in elementary or secondary education;

Learning Outcomes
Utilize the vocabulary, primary concepts, definitions, and models applicable to STEM education;
Demonstrate an ability to collect, evaluate, synthesize, and share real-world data relevant to curricula in elementary or secondary education;
Demonstrate an ability to solve problems, evaluate the efficacy of possible solutions, and discuss strategies and processes needed for effective problem solving;
Demonstrate the ability to work in collaborative design teams to meet given criteria and solve design problems;
Develop innovative and alternative teaching methods and learning activities that promote STEM education;
Apply STEM cognitive tools (i.e., scientific model, design loop, etc.) and resources toward solving human and environmental problems;
Develop confidence in the use and development of design models and engineering constraints;
Analyze attributes, strengths, and weaknesses of current STEM education programs, initiatives and policies at the local, state, and national levels;
Develop confidence in the use of appropriate technology for data collection, analysis and display;
Develop the ability to work in collaborative design teams to meet given criteria and solve STEM related problems;
Select and experience a wide range of instructional practices, approaches, strategies, and methods for integrating curricula that focus on a problems-based approach, while accommodating for the developmental, cultural, and linguistic differences in students; and
Develop skills and experience in writing grants for the purpose of implementing funded integrated STEM curricula in the classroom.

Description and justification of the request

Description of specific change	Justification for this change
<p>Changed the name of the program to reflect the change of the licensure grades for Childhood education. It has changed from K-4 to K-6. Provided an undergraduate option for the Creativity and Innovation Course (STEM 5023 or STEM 4043)</p>	<p>The new name will reflect the grade-level licensure changes in our teacher education program. The STEM concentration is one of the options for Childhood Education students and we can no longer require students to take graduate level courses. The changes will allow students to fulfill both their undergraduate requirements for graduation and complete the STEM Graduate Certificate during the MAT program.</p>

Upload attachments

[STEMGC - Name Change - Ltr of Notification.docx](#)

Reviewer Comments

Alice Griffin (agriffin) (10/10/18 10:47 am): Inserted STEM 5033 as option for STEM 4033. This change is in response to the dual-level split of classes. Made change in consultation with college.

Alice Griffin (agriffin) (10/10/18 10:50 am): Rollback: Please submit a Letter of Notification 1 with the name change request and change the reason for the modification. This action will impact the approval workflow.

Alice Griffin (agriffin) (10/17/18 6:12 pm): Revised LON, changed degree/department code to match ADHE assigned codes and reformatted curriculum. Inserted approval dates and renamed document to match BOT naming convention.

Alice Griffin (agriffin) (10/17/18 6:16 pm): In order for the program to complete the approval process, the department needs to submit the program goals and student learning outcomes in the appropriate fields within the CourseLeaf template. Approving at this level to help it reach UCPC this month.

Key: 329