Materials linked from the April 1, 2016 Graduate Council agenda.

Curriculum Proposal System Oregon State University OSU

New Graduate Option
Advanced Science and Mathematics Education

Status: Pending Review - Graduate Council Chair

1. Review - College Approver - Education

Approved by Randy Bell Assoc Dean-Academic Affairs / College of Education, *February 24, 2016 1:41pm*

2. Review - Curriculum Coordinator

Approved by Cheryl Hagey Administrative Program Assist / Acad Prgms/Assess/Accred, *February 26, 2016 2:19pm*

Comments

Cheryl Hagey (Curriculum Coordinator) February 26, 2016 2:19pm
SUMMARY: This NEW Grad Option seeks to set up the program separate from the current Education Major to fall under the Education EDD, EDM, MS, PhD.

CIP number 130101 has been added to the proposal.

Cheryl

3. Review - Graduate Council Chair

Your Decision: ◯ Approve ◯ Send Back

Your Comment: (optional) NOTE: These comments are visible to everyone

Submit

More Queued Reviews (5)

Graduate School; CC Rep - Education; Curriculum Council Chair; Academic Programs; Catalog Coordinator

Proposal

Proposal ID:	97182
Type:	New Option/Minor
Submission Date:	February 24, 2016 1:40pm
Effective Term:	Spring 2016
Justification:	This new option, Advanced Science and Mathematics Education will be offered as a Master of Education (EdM) degree in the Education Major (2310). It was previously an area of concentration in both the Science Education and Mathematics Education majors as a Master's of Science degree. This option is consolidating areas of concentration in two separate majors. The reason for this change is part of the College of Education reorganization to reduce the number of majors in the College of Education. Eventually, both the Science Education and Mathematics Education majors will be terminated.
Comments:	This option is offered exclusively through Ecampus with online delivery only.

Originators

NAME	TITLE	DEPARTMENT/SCHOOL
Susan Helback	Instructor	Teacher/Counselor Eductn

Contacts

NAME	TITLE	DEPARTMENT/SCHOOL
Jennifer Bachman	Coordinator-Academic Program 2	College of Education

Liaisons

LIAISON	STATUS	REQUIRED
Randy Bell - Assoc Dean-Academic Affairs / College of Education I approve.	Responded	Yes

(Responded on Feb 24, 2016)

Program Information

Program Title:	Advanced Science and Mathematics Education
CIP Code:	130101
College/Department or College/School:	College of Education / No Department
Program Type:	Graduate Option
Associated Major:	Education - EDD, EDM, MS, PhD
Description:	

This EdM option aims to prepare PK-12 teachers and educators to specialize in science and mathematics education in public or private schools or informal settings. Courses emphasize using theory to inform classroom practice and practice to inform understanding of educational research in the context of science and math education.

Requirements:

Content Specialty Courses (15 credits)

SED 541. Weather Concepts for Science and Math Teaching (3)

or SED 564. Engineering and Science in the Lives of Students (3)

SED 566. Fostering Reflective Discourse in Science and Math Contexts (3)

SED 594. Advanced Strategies: Science and Mathematics (3)

SED 595. Assessment and Evaluation (3)

SED 598. Mathematics and Science Curriculum (3)

Electives. Select 12 elective credits. Must be approved by program advisor.

Total Credits = 45

Documents

FILE NAME	FILE SIZE	COMMENT	DATE ADDED
Advanced Science and Math Education Outcomes.pdf	91.87 Kb	Graduate Program Outcomes are attached for Graduate Council Review. Note: This option is accredited by a national accreditation organization (CAEP) as well as the Oregon Teaching Standards and Practices Commission (TSPC).	Feb 24, 2016 12:28 pm
Graduate Assessment Plan for EdM Advanced Science and Math option.pdf	199.92 Kb	Graduate Assessment Plan for Graduate Council review.	Feb 24, 2016 12:28 pm
Advanced Science and Math Option.pdf	163.92 Kb	Cheryl, Her is a description of the EdM degree and the Advanced and Science and Math Education option as it would appear in the course catalog. There will be three new options in the Education major (2310) for the EdM degree offered exclusively online through Ecampus: Advanced Science and Mathematics (#97182), PK ESOL (#97183), and Social Justice in Education (#97184). The EdM degree description is being changed to prepare for these options (#97119).	Feb 24, 2016 12:32 pm

Master of Education Degree (Ecampus)
The Master of Education (EdM) degree advances the knowledge and teaching of PK-12 teachers and other educators who are interested in continued professional development in the field of education in order to create inclusive, supportive learning environments that contribute to student learning and growth. Candidates take courses in educational research, technology, cultural competency, and leadership. They also further their pedagogical content knowledge and instruction in a specific area/option.

The Master of Education degree requires completion of one option for a total of 45 quarter credits. All options require completion of 18 credits of core courses and a minimum of 12 credits of content specialty courses. In addition, elective courses can be selected from the other options, colleges, or transferred into the program. Up to 15 graduate credits may be transferred if they meet OSU Graduate School requirements.

All courses are offered online through Ecampus to meet the needs of working professionals. Because this major is practitioner-based, it requires access to a classroom or informal learning environment to apply educational research, theory, and pedagogical practices, and for completion of a final project.

Note: Completion of this degree does not lead to initial (preliminary) teaching licensure; it is an advanced degree for continued professional development in targeted areas.

These options are approved by the Oregon Teacher Standards and Practices Commission (TSPC) and nationally accredited.

Core Courses (18 credits)
ED 506. Projects (3)
ED 522. Racial and Cultural Harmony in the K-12 Classroom (3)
ED 542. Teacher Leadership (3)
or LEAD 542 Leadership Skills for Career Success (3)
ED 561. Action Research (3)
ED 562. Introduction to Educational Research (3)
ED 596. Technology for Educators (3)
or SED 520. Integrating Technology & Literacy in Learning Math & Science (3)

Options
Advanced Science and Mathematics Education
PK-12 English for Speakers of Other Languages (ESOL)
Social Justice in Education

Advanced Science and Mathematics Education *(Ecampus)*
This EdM option aims to prepare PK-12 teachers and educators to specialize in science and mathematics education in public or private schools or informal settings. Courses emphasize using theory to inform classroom practice and practice to inform understanding of educational research in the context of science and math education.

Content Specialty Courses (15 credits)
SED 541. Weather Concepts for Science and Math Teaching (3)
or SED 564. Engineering and Science in the Lives of Students (3)
SED 566. Fostering Reflective Discourse in Science and Math Contexts (3)
SED 594. Advanced Strategies: Science and Mathematics (3)
SED 595. Assessment and Evaluation (3)
SED 598. Mathematics and Science Curriculum (3)

Electives. Select 12 elective credits. Must be approved by program advisor.

Total Credits = 45

Advanced Science and Math Education Outcomes and Assessments*

*Draft upon final guidelines from CAEP (Council for Accreditation of Educator Preparation) for Advanced Programs

Outcomes	Assessments	CAEP & InTASC Standards	NBPTS Standard
Completers demonstrate mastery of subject material. (GLO #2)	Content specialty courses: SED 564 (or 541), 566, 594, 595, 598 (course grades)	CAEP 1.1, 1.3, 1.4, 1.5 Content (InTASC: 4)	Proposition 2: Teachers Know the Subjects They Teach and how to Teach Those Subjects to Students
Completers apply content and pedagogical knowledge and skills in their teaching practice toward production of creative work. (GLO #1)	Project (rubric)	CAEP 1.1, 1.3, 1.5 Learner and learning (InTASC: 1, 2, 3) Instructional Practice (InTASC: 5, 7, 8)	Proposition 2: Teachers Know the Subjects They Teach and how to Teach Those Subjects to Students Proposition 5: Teachers are Members of Learning Communities
Completers conduct research activities in an ethical manner and reflect professional dispositions expected of educators. (GLO #3)	Application & Letters of Recommendation (rubric) ED 562 Introduction to Educational Research (course grade) Dispositions (TBD)	CAEP 1.1, 1.3 Professional Responsibility (InTASC: 9, 10)	Proposition 1: Teachers are Committed to Students and Their Learning
Completers use research and evidence to measure student progress and their own professional practice.	ED 561 Action Research (course grade)	CAEP 1.1, 1.2 Instructional Practice (InTASC: 6)	Proposition 3: Teachers are Responsible for Managing and Monitoring Student Learning Proposition 4: Teachers Think Systematically about Their Practice and Learn from Experience

Core & Content Specialty Courses Aligned with National Board for Professional Teaching Standards (NBPTS)

NBPTS Proposition 1: Teachers are Committed to Students and Their Learning	
1.1 Accomplished teachers are dedicated to making knowledge accessible to all students. They believe all students can learn.	ED 522, SED 594, 598
1.2 Accomplished teachers treat students equitably. They recognize the individual differences that distinguish their students from one another and they take account for these differences in their practice.	ED 522, SED 594, 598
1.3 Accomplished teachers understand how students develop and learn.	SED 594
1.4 Accomplished teachers respect the cultural and family differences students bring to the classroom.	ED 522
1.5 Accomplished teachers are concerned with their students' self-concept, their motivation and the effects of learning on peer relationships and with the development of character and civic responsibility.	ED 522
1.6 Accomplished teachers cultivate knowledge about the character of the community and its effects on the school and students.	ED 522
NBPTS Proposition 2: Teachers Know the Subjects They Teach and How to Teach Those Subjects to Students	
2.1 Accomplished teachers have mastery over the subject(s) they teach. They have a deep understanding of the history, structure and real-world applications of the subject.	All option courses
2.2 Accomplished teachers possess advanced skills and experience in teaching content, and are very familiar with the skills gaps and preconceptions students may bring to the subject.	SED 594
2.3 Accomplished teachers are able to use diverse instructional strategies to teach for understanding.	SED 594, 595
NBPTS Proposition 3: Teachers are Responsible for Managing and Monitoring Student Learning	
3.1 Accomplished teachers deliver effective instruction, and move fluently through a range of instructional techniques, keeping students motivated, engaged and focused.	SED 594, 598
3.2 Accomplished teachers know how to engage students to ensure a disciplined learning environment, and how to organize instruction to meet instructional goals.	SED 594, 598
3.3 Accomplished teachers know how to assess the progress of individual students as well as the class as a whole.	SED 594, 595
3.4 Accomplished teachers use multiple methods for measuring student growth and understanding, and they can clearly explain student performance to parents.	SED 595

NBPTS Proposition 4: Teachers Think Systematically about Their Practice and Learn from Experience	Courses
4.1 Accomplished teachers model what it means to be an educated person – they read, they question, they create and they are willing to try new things.	All
4.2 Accomplished teachers are familiar with learning theories and instructional strategies and stay abreast of current issues in American Education.	ED 561, 562
4.3 Accomplished teachers rely on educational research and scholarship to improve teaching practice.	ED 561, 562
4.4 Accomplished teachers critically examine their practice on a regular basis to deepen knowledge, expand their repertoire of skills, and incorporate new findings into their practice.	ED 561, 562
NBPTS Proposition 5: Teachers are Members of Learning Communities	**Courses**
5.1 Accomplished teachers collaborate with others to improve student learning.	ED 506, 542
5.2 Accomplished teachers are leaders and actively know how to seek and build partnerships with community groups and businesses.	ED 506, 542
5.3 Accomplished teachers work with other professionals on instructional policy, curriculum development and staff development.	ED 506, 542
5.4 Accomplished teachers can evaluate school progress and the allocation of resources in order to meet state and local education objectives.	ED 506, 542
5.5 Accomplished teachers know how to work collaboratively with parents to engage them productively in the work of the school.	ED 506, 542

Graduate Master's Program Assessment Plan: EdM Education (2310)
Option: Advanced Science and Math Education

Process

How does your unit reflect on the assessment data gathered and who is involved? How do the results of your assessment efforts relate to strategic planning and overall program review?

Science and Math Education faculty and the program coordinator review program data individually and discuss in meetings as necessary. Based on data gathered and analyzed, modifications are made to improve the program which includes course updates, sequence of core courses, and assignment of instructors. The SHE option is nationally accredited by the Council of Accreditation for Educator Preparation (CAEP) and state Teacher Standards and Practices Commission (TSPC) which requires annual program reviews and on-site visits every seven years.

What data are archived? Where, how and for what duration?

The College of Education collects application and program information in an electronic database on applicants and admitted students. From this data, we figure admission rates, matriculation rates, graduation rates, and years to completion for programs within the College back to 1989.

Program Outcomes, Measures and Benchmarks or Milestones

List the university and program level student learning outcomes (GLO).	**Apply content and pedagogical knowledge and skills in teaching practice toward production of creative work**	**Demonstrate mastery of subject material**	**Completers conduct research activities in an ethical manner and reflect professional dispositions expected of educators**	**Use research and evidence to measure student progress and their own professional practice**
What year will you report on this outcome? (Every university GLO must be assessed annually and others at least once every five years.)	Annually	Annually	Annually	2017-2018
List the measures/methods /instruments to be used to assess the outcome. Identify measures, methods, and/or instruments as being direct (D) or indirect (I). (At least one of these must be direct measures.)	Project - rubric (D)	Content Specialty courses for option: SED 564 or 541, 566, 594, 595, 598 - course grades (I)	Application & Letters of Recommendation (D) - rubric ED 562 Intro to Research Methods in Education (I) - course grade	ED 561 Action Research - course grade (I)
What benchmarks/milestones will you use to determine if the outcome has been satisfactorily met by the students?[z]	Demonstrate proficiency in all criteria on rubrics (minimum of 3 out of 4)	Passing course with a 3.0 or better	Demonstrate proficiency in all criteria on rubrics (minimum of 3 out of 4) Passing course with a 3.0 or better	Passing course with a 3.0 or better

[z] Examples include courses, workshops, program of study, internship/externship, research proposal, presentations of research or project results, project or thesis defense, final report or thesis. This is not an exhaustive list of possibilities.

[y] Programs especially with options will likely have specific learning outcomes (competencies, goals, etc.). State those and how they are being assessed.

Graduate Program Annual Reporting - Assessment and Reflection on Graduate Learning Outcomes (GLO)				
List the university and program level graduate learning outcomes (GLO).	**Apply content and pedagogical knowledge and skills in teaching practice toward production of creative work**	**Demonstrate mastery of subject material**	**Completers conduct research activities in an ethical manner and reflect professional dispositions expected of educators**	**Use research and evidence to measure student progress and their own professional practice**
Is this GLO new or revised since the last year you reported on it? (write no, new, or revised)				
What do the data show about student learning or success relative to the outcomes you are reporting on this year?				
Describe any course-level changes related to this outcome that will result /have resulted from assessment activities in this reporting year. Include timelines.				
Describe any program/degree level (e.g. curricular, outcomes, goals, objectives) changes related to this outcome that have resulted/will result from GLO assessment activities in this reporting year and/or from other impetuses (e.g. feedback from accreditors).				
How did your program reflect on the data you are reporting and who was involved? Were there any challenges or concerns? How are the results of your assessment efforts related to strategic planning and overall program review?				
Plans				
Describe the program's assessment plans for the upcoming year.				
Attachments- Please share any relevant attachments related to the items/results you are reporting in this report.				