CGS Agenda Item: 12-59
Effective: Spring 2013

Eastern Illinois University

NEW/REVISED COURSE PROPOSAL FORMAT

(Approved by CAA on 9/29/11 and CGS on 10/18/11, Effective Fall 2011)

This format is to be used for all courses submitted to the Council on Academic Affairs and/or the Council on Graduate Studies.

Please check one: **_XX_** New course **___** Revised course

PART I: CATALOG DESCRIPTION

1. **Course prefix and number, *such as ART 1000*:** MAT 5409
2. **Title (*may not exceed 30 characters, including spaces*):** Teachers as Researchers
3. **Long title, if any (*may not exceed 100 characters, including spaces*):** Teachers as Researchers in Mathematics Education
4. **Class hours per week, lab hours per week, and credit [*e.g., (3-0-3)*]:** (1-0-1)
5. **Term(s) to be offered:** ___ Fall **XX_** Spring ___ Summer ___ On demand
6. **Initial term of offering:** ___ Fall **XX_** Spring ___ Summer **Year:** _2013_
7. **Course description:** Examination and analysis of research in mathematics education conducted by classroom teachers, with the purpose of preparing graduate students in mathematics education to develop a focused and coherent action research proposal in a subsequent course.
8. **Registration restrictions:**
   a. **Equivalent Courses**
      - **Identify any equivalent courses** (e.g., cross-listed course, non-honors version of an honors course).
        None
      - Indicate whether coding should be added to Banner to restrict students from registering for the equivalent course(s) of this course. ___ Yes **_XX** No

   b. **Prerequisite(s)**
      - **Identify the prerequisite(s),** including required test scores, courses, grades in courses, and technical skills. Indicate whether any prerequisite course(s) MAY be taken concurrently with the proposed/revised course.
        8 hours completed in the Master of Arts in Mathematics with Elementary/Middle School Education Option or Master of Arts in Mathematics with Secondary Mathematics Education Option
      - Indicate whether coding should be added to Banner to prevent students from registering for this course if they haven't successfully completed the prerequisite course(s). ___ Yes **_XX** No

        If yes, identify the minimum grade requirement and any equivalent courses for each prerequisite course:

   c. **Who can waive the prerequisite(s)?**
      ___ No one XX_ Chair **_XX** Instructor ___ Advisor ___ Other (Please specify)

d. Co-requisites (course(s) which MUST be taken concurrently with this one):
None

e. Repeat status: **_XX** Course may not be repeated.

___ Course may be repeated once with credit.

Please also specify the limit (if any) on hours which may be applied to a major or minor.

f. Degree, college, major(s), level, or class to which registration in the course is restricted, if any:
Master of Arts in Mathematics with Elementary/Middle School Education Option or Master of Arts in Mathematics with Secondary Mathematics Education Option

g. Degree, college, major(s), level, or class to be excluded from the course, if any:
None

9. Special course attributes [cultural diversity, general education (indicate component), honors, remedial, writing centered or writing intensive]
None

10. Grading methods (check all that apply): **_XX** Standard letter ___ CR/NC ___ Audit ___ ABC/NC
("Standard letter"—i.e., ABCDF--is assumed to be the default grading method unless the course description indicates otherwise.)

Please check any special grading provision that applies to this course:

___ The grade for this course will not count in a student's grade point average.

___ The credit for this course will not count in hours towards graduation.

If the student already has credit for or is registered in an equivalent or mutually exclusive course, check any that apply:

___ The grade for this course will be removed from the student's grade point average if he/she already has credit for or is registered in _____ (insert course prefix and number).

___ Credit hours for this course will be removed from a student's hours towards graduation if he/she already has credit for or is registered in _____ (insert course prefix and number).

11. Instructional delivery method: (Check all that apply.)

___ lecture ___ lab ___ lecture/lab combined ___ independent study/research
___ internship ___ performance ___ practicum or clinical ___ study abroad
_XX Internet ___ hybrid ___ other (Please specify)

PART II: ASSURANCE OF STUDENT LEARNING

1. List the student learning objectives of this course:
Students will learn to:

- compare and contrast examples of research conducted by mathematics teacher and mathematics educators;

- formulate general observations about the nature of research conducted by mathematics teachers;
- analyze pedagogical implications of specific action research conducted by mathematics teachers;
- identify elements of action research relevant to the individual graduate student/teacher's own practice;
- develop a conceptual foundation for designing the graduate student's own research proposal in ensuing course MAT 5410 Research in Mathematics Education.

a. If this is a general education course, indicate which objectives are designed to help students achieve one or more of the following goals of general education and university-wide assessment:

- **EIU graduates will write and speak effectively.**
- **EIU graduates will think critically.**
- **EIU graduates will function as responsible citizens.**

N/A

b. If this is a graduate-level course, indicate which objectives are designed to help students achieve established goals for learning at the graduate level:

- **Depth of content knowledge:** Objectives 1, 3
- **Effective critical thinking and problem solving:** Objectives 1, 2, 3, 4
- **Effective oral and written communication:** Objectives 1, 2, 3, 5
- **Advanced scholarship through research or creative activity: Objectives** 1, 2, 3, 4, 5

2. Identify the assignments/activities the instructor will use to determine how well students attained the learning objectives:

	Written summaries of readings	Participation in online discussion	Response to prompts relevant to readings	Final reflection & position paper
Compare and contrast examples of research conducted by mathematics teachers.	X	X	X	
Formulate general observations about the nature of research conducted by mathematics teachers.	X	X	X	X
Analyze pedagogical implications of specific action research conducted by mathematics teachers.		X	X	X
Identify elements		X	X	X

of action research relevant to the individual graduate student/teacher's own practice.				
Develop a conceptual foundation for designing the graduate student's own research proposal in ensuing course MAT 5410 Research in Mathematics Education.	X	X	X	X

3. Explain how the instructor will determine students' grades for the course:

Written summaries of readings	20%
Participation in online discussion	20%
Response to prompts relevant to readings	30%
Final reflection & synthesis paper	30%

4. For technology-delivered and other nontraditional-delivered courses/sections, address the following:

a. Describe how the format/technology will be used to support and assess students' achievement of the specified learning objectives: Students will submit written work electronically in advance of online discussions. Online discussion will allow the instructor to assess the thoroughness of students' preparation.

b. Describe how the integrity of student work will be assured: Instructor will pose questions during online discussion and via email to individual students designed to expose any mismatch between student understanding and written work submitted.

c. Describe provisions for and requirements of instructor-student and student-student interaction, including the kinds of technologies that will be used to support the interaction (e.g., e-mail, web-based discussions, computer conferences, etc.): Course will incorporate the current Learning Management System (LMS), email.

5. For courses numbered 4750-4999, specify additional or more stringent requirements for students enrolling for graduate credit. These include:

a. course objectives;
b. projects that require application and analysis of the course content; and
c. separate methods of evaluation for undergraduate and graduate students.

N/A

6. **If applicable, indicate whether this course is writing-active, writing-intensive, or writing-centered, and describe how the course satisfies the criteria for the type of writing course identified. (See Appendix *.)**
   N/A

PART III: OUTLINE OF THE COURSE

Provide a week-by-week outline of the course's content. Specify units of time (e.g., for a 3-0-3 course, 45 fifty-minute class periods over 15 weeks) for each major topic in the outline. Provide clear and sufficient details about content and procedures so that possible questions of overlap with other courses can be addressed. For technology-delivered or other nontraditional-delivered courses/sections, explain how the course content "units" are sufficiently equivalent to the traditional on-campus semester hour units of time described above.

The course content units will be equivalent to the traditional on-campus semester hour units of time.

Course Outline

Each week represents required participation in online discussions of readings.

Week 1
Orientation to course, procedures, technology
Nature and purpose of action research

Week 2
Outcomes and benefits of action research

Week 3
Identifying a focus (site) for research

Week 4
Sites for research/critical issues for effective teaching – Worthwhile mathematical tasks

Week 5
Sites for research/critical issues for effective teaching – Worthwhile mathematical tasks (framework)

Week 6
Sites for research/critical issues for effective teaching – Mathematical discourse (revoicing)

Week 7
Sites for research/critical issues for effective teaching – Mathematical discourse (vagueness)

Week 8
Sites for research/critical issues for effective teaching – Purposeful questioning

Week 9
Sites for research/critical issues for effective teaching – Maintaining momentum

Week 10
Sites for research/critical issues for effective teaching – Guiding closure discussions

Week 11
Sites for research/critical issues for effective teaching – Selecting tasks that provide a window into students' thinking.

Week 12
Extracting information from data

Week 13
How do researchers develop a plan?

Week 14
Reflection and Synthesis

Week 15
Reflection and Synthesis

PART IV: PURPOSE AND NEED

1. **Explain the department's rationale for developing and proposing the course.**
   Teachers enrolled in the course MAT 5410 develop a proposal for action research that can be used as an independent study project. This is in itself a challenging task to accomplish in a compact summer term, and allows little time for a teacher to develop an understanding of action research. The proposed course would provide an opportunity for reading, reflection, and discussion that would better prepare students to write their proposals.

   a. **If this is a general education course, you also must indicate the segment of the general education program into which it will be placed, and describe how the course meets the requirements of that segment.**

      N/A

   b. **If the course or some sections of the course may be technology delivered, explain why.**
      This course will be offered in spring semesters prior to MAT 5410, which is offered alternate summers. Students in the summer Master's program in Mathematics Education are typically classroom teachers who may not be able to come to campus during the school year. Offering the course online makes it accessible to students who live some distance from campus.

2. **Justify the level of the course and any course prerequisites, co-requisites, or registration restrictions.**
The course is part of the Master of Arts in Mathematics with Elementary/Middle School Education Option or Master of Arts in Mathematics with Secondary Mathematics Education Option. Its purpose is to help prepare students to write the proposal for action research that is completed in MAT 5410. The prerequisite of 8 hours completed in the program is to ensure that students have had some exposure to the goals and content of the program.
3. **If the course is similar to an existing course or courses, justify its development and offering.**

The landmark research examined in MAT 5410 is typically large-scale and historic research in mathematics education, in contrast to the action research conducted by individual teachers that is the subject of this proposed course.

a. If the contents substantially duplicate those of an existing course, the new proposal should be discussed with the appropriate chairpersons, deans, or curriculum committees and their responses noted in the proposal. Does not duplicate an existing course.

b. Cite course(s) to be deleted if the new course is approved. If no deletions are planned, note the exceptional need to be met or the curricular gap to be filled. No course deleted.

c. If the contents substantially duplicate those of an existing course, the new proposal should be discussed with the appropriate chairpersons, deans, or curriculum committees and their responses noted in the proposal.

d. Cite course(s) to be deleted if the new course is approved. If no deletions are planned, note the exceptional need to be met or the curricular gap to be filled.

4. Impact on Program(s):

a. For undergraduate programs, specify whether this course will be required for a major or minor or used as an approved elective.

b. For graduate programs, specify whether this course will be a core requirement for all candidates in a degree or certificate program or an approved elective.
This one-hour course will be required in the Master of Arts in Mathematics Elementary/Middle Level Education and Secondary Education. Program revisions are submitted along with this course proposal.

If the proposed course changes a major, minor, or certificate program in or outside of the department, you must submit a separate proposal requesting that change along with the course proposal. Provide a copy of the existing program in the current catalog with the requested changes noted.
Program revisions are submitted along with this proposal.

PART V: IMPLEMENTATION

1. Faculty member(s) to whom the course may be assigned: Dr. Anderson, Dr. Jeon, Dr. Lassak, Dr. Wiles, Dr. Somayajulu.

If this is a graduate course and the department does not currently offer a graduate program, it must document that it employs faculty qualified to teach graduate courses.

2. Additional costs to students: None

Include those for supplemental packets, hardware/software, or any other additional instructional, technical, or technological requirements. (Course fees must be approved by the President's Council.)

3. Text and supplementary materials to be used (Include publication dates):

Selected articles from the following:
Promoting purposeful discourse: teacher research in mathematics classrooms, edited by Beth Herbel-Eisenmann, Michelle Cirillo, 2009.
Teachers engaged in research: inquiry into mathematics classrooms, grades pre-k-2, edited by Stephanie Z. Smith and Marvin E. Smith, 2006.
Teachers engaged in research: inquiry into mathematics classrooms, grades 3-5, edited by Cynthia W. Langrall, 2006.
Teachers engaged in research: inquiry into mathematics classrooms, grades 6-8, edited by Joanna O. Masingila, 2006.
Teachers engaged in research: inquiry into mathematics classrooms, grades 9-12, edited by Laura R. Van Zoest, 2006.

Selected articles from the following journals:
Teaching Children Mathematics
Mathematics Teaching in the Middle School
Mathematics Teacher

PART VI: COMMUNITY COLLEGE TRANSFER

If the proposed course is a 1000- or 2000-level course, state either, "A community college course may be judged equivalent to this course" OR "A community college course will not be judged equivalent to this course." A community college course will not be judged equivalent to a 3000- or 4000-level course but may be accepted as a substitute; however, upper-division credit will not be awarded.

PART VII: APPROVALS

Date approved by the department or school: April 23, 2012

Date approved by the college curriculum committee: September 14, 2012

Date approved by the Honors Council *(if this is an honors course):*

Date approved by CAA: CGS:

*In **writing-active courses**, frequent, brief writing activities and assignments are required. Such activities -- some of which are to be graded – might include five-minute in-class writing assignments, journal keeping, lab reports, essay examinations, short papers, longer papers, or a variety of other writing-to-learn activities of the instructor's invention. Writing assignments and activities in writing-active courses are designed primarily to assist students in mastering course content, secondarily to strengthen students' writing skills. In **writing-intensive courses**, several writing assignments and writing activities are required. These assignments and activities, which are to be spread over the course of the semester, serve the dual purpose of strengthening writing skills and deepening understanding of course content. At least one writing assignment is to be revised by the student after it has been read and commented on by the instructor. In writing-intensive courses, students' writing should constitute no less than 35% of the final course grade. In **writing-centered courses** (English 1001G, English 1002G, and their honors equivalents), students learn the principles and the process of writing in all of its stages, from inception to completion. The quality of students' writing is the principal determinant of the course grade. The minimum writing requirement is 20 pages (5,000 words).

Student Success Center		Career Services	Disability Services
http://www.eiu.edu/~success/	http://www.eiu.edu/~counsctr/	http://www.eiu.edu/~careers/	http://www.eiu.edu/~disablty/
581-6696	**581-3413**	**581-2412**	**581-6583**