Washington State University
MAJOR CURRICULAR CHANGE FORM - COURSE
(Submit original signed form and ten copies to the Registrar's Office, zip 1035.)

Future Effective Date: 09/01/2014 (effective date cannot be retroactive)

☐ New course
☐ Temporary course
☐ Drop service course
☐ There is a course fee associated with this course (see instructions)

☐ Variable credit
☐ Increase credit (former credit __________)
☐ Lecture-lab ratio (former ratio __________)
☐ Number (former number __________)
☐ Crosslisting (between WSU departments)
(Must have both departmental signatures)

☐ Repeat credit (cumulative maximum _______ hours)
☐ Prefix (former prefix __________)
☐ Cooperative listing (UI prefix and number __________)
☐ Conjoint listing (400/500)
☐ S, F grading
☐ Request to meet Writing in the Major [M] requirement (Must have All-University Writing Committee Approval)
☐ Request to meet GER in _________ (Must have GenEd Committee Approval)
☐ Fulfills GER lab (L) requirement
☐ Professional course (Pharmacy & Vet Med only)
☐ Graduate credit (professional programs only)
☐ Other (please list request)

T&L Research Internship in Math/Science Education

course prefix 591 course no. ________ title

credit ________ lecture hrs per week
lab hrs per week
studio hrs per week
prerequisite

Description (20 words or less)
This course provides opportunities for students to work closely with an accomplished researcher to observe, learn, and practice research methods.

Instructor: Janet Frost Phone number: (509) 358-7595 Email: frost@wsu.edu
Contact: Kelly LaGrutta Phone number: (509) 358-7942 Email: lag rutta@wsu.edu
Campus Zip Code: 99252

- Please attach rationale for your request, a current and complete syllabus, and explain how this impacts other units in Pullman and other branches (if applicable).
- Secure all required signatures and provide 10 copies to the Registrar's Office.

Chair/date 3/25/12 Dean/date 3/27/12
General Education Com/date

Chair (if crosslisted/interdisciplinary) * Dean (if crosslisted/interdisciplinary) * Graduate Studies Com/date

All-University Writing Com/date Academic Affairs Com/date Senate/date

*If the proposed change impacts or involves collaboration with other units, use the additional signature lines provided for each impacted unit and college.
Rationale for T&L 591 Research Internship in Math/Science Education

Student schedules at times preclude taking the full 3-credit Research Internship in one semester, particularly if they are part-time students. Therefore, we would like students in this situation to have the opportunity to take this course in a way that extends over more than one semester. However, we still believe it is important for students to take a minimum of 3 credits in order to get the full experience desired. For these reasons, we request a change to variable credits with the requirement that students complete at least 3 credits over time. (This course has already been approved for repeat credits with a cumulative maximum of 6 hours.)

This course is available to students in Pullman, Spokane, Tri-Cities, and Vancouver and therefore may impact each of these campuses.
T & L 591: Research Internship in Mathematics/Science Education
Teaching and Learning Department
College of Education
Washington State University
2-3 credits

Course Description and Objective

The internship course will provide PhD and EdD students with preparation for conducting dissertation research through immersion in an existing research project. The objective for the course is to provide an opportunity for students to work closely with an accomplished researcher to observe, learn, and practice research methods. The instructor of record for the course will be the internship coordinator. This coordinator will collect internship proposals from faculty, distribute them to students for selection and assignment, and supervise the internship experiences, in coordination with each intern's assigned project faculty member, as described in greater detail below.

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<tr>
<th>Student Learning Outcomes (SLO)</th>
<th>Activities and Evaluations of Outcomes</th>
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<td><strong>At the end of this course, students should be able to:</strong></td>
<td><strong>These outcomes will be addressed in the following activities and evaluations:</strong></td>
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<td>• Identify one or more of the following:</td>
<td>Student research activity results; student end-of-course culminating written reflection on their learning and application to their future research plans; course summary meeting presentations.</td>
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<td>o Connections between a literature review and research design as implemented in a specific research project.</td>
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<tr>
<td>o Steps necessary to implement a research method such as quantitative, qualitative, or mixed method, as implemented in a specific research project</td>
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<tr>
<td>o Essential aspects of data collection and/or analysis, as associated with</td>
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Course Overview

In this course, students will serve as an intern on a research project currently conducted by a T&L math or science education faculty member or a faculty member. They will conduct work on one or more of the following aspects of the research project: development of a project-based literature review, grant proposal development, data collection, data analysis, or report of results.

Interested faculty will submit internship proposals to the coordinator one semester before the internship course. These proposals will describe the nature of the research project the faculty member conducts, the potential types of work an intern could complete in the project and the readings that would be required of the intern. This work might include conducting interviews or observations, analyzing interview or observation data, or conducting quantitative or qualitative data analysis. All work must be clearly related to intern learning and should not include activities such as transcribing or other tasks that are unlikely to contribute to significant learning.

Readings might include articles that explain the theoretical framework of the study, design approach, and rationale for the data collection and analysis approaches, as well as previously published articles related to the project if such articles exist.

The coordinator will provide all proposals to students who will be taking the internship course. Students will identify a preference ranking among the options, and after the coordinator determines which project each student will join, the student will propose the nature of the work he or she will do and tentative deadlines for completion of each part. This proposal will serve as a contract between the intern and project faculty member. Interns and their project faculty member will meet together at least 5 times, occurring at least once each month during the internship to discuss work progress. The internship coordinator will attend 2 of those meetings and/or conduct a meeting of all participating students and faculty at the end of the semester to hear student presentations of their work and learning and faculty reflections on the experience. During the semester, the coordinator will also communicate frequently with students and faculty in each project to ensure that each student and faculty participant is meeting the expectations for the work.

Upon completion of the internship, students will prepare a culminating paper that compares and contrasts the theoretical framework and approach used in the project with the potential framework and approach they plan to use in their dissertation research.

Varying Expectations By Credits Taken

If students elect to take the course for 2 credits, assignments will be adjusted accordingly. Student assignments will vary according to the number of credits taken – levels of work are defined using the number of required contact hours for the
number of credits, plus 3-4 additional hours per contact hour to account for typical graduate coursework outside of class. Students taking the course for two credits will be expected to complete 96-120 hours of work. Students taking the course for three credits will be expected to complete 144-180 hours of work.

Possible types of work for the varying credits might be something like the following:

2 credits: complete several readings related to research design and methods AND to the topic of the research study, followed by conducting initial data collection and analysis on one aspect of the study

3 credits: complete readings related to research design and methods AND to the topic of the research study, followed by writing a synthesis of the literature AND conducting initial data collection or analysis on two or more aspects of the study.

Intern Evaluation

Evaluation will be based on the following components:

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<tr>
<th>Component</th>
<th>Percent</th>
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<tr>
<td>1. Completion of assigned reading and accurate synthesis of the information, scored by the individual faculty member overseeing the intern’s work.</td>
<td>10%</td>
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<tr>
<td>2. Thorough and thoughtful completion of assigned literature review, and/or qualitative and/or quantitative data collection and/or analysis tasks, as scored by the individual faculty member overseeing the intern’s work.</td>
<td>80%</td>
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<tr>
<td>3. Culminating paper, scored by both the individual faculty member overseeing the intern’s work and the internship coordinator.</td>
<td>10%</td>
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The final course grade and individual course assignment scores will be determined using the following Dept. of Teaching & Learning guidelines:

A 95% or above; Exceptional, consistently exceeds requirements & expectations.

A- 93-94%; Excellent

B+ 91-92%; Very Good

B 87-90%; Good, Fully accomplished all objectives for the course/assignment; demonstrates a complete understanding of the concepts, processes, theories, approaches of the course/assignment.

B- 85-86%; Proficient

C+ 83-84%; Satisfactory

C 79-82%; Minimally satisfactory/ Partial accomplishment, minimal requirements of the course/assignment objectives accomplished, lack of evidence of thorough understanding of the concepts, processes, theories, approaches of the course/assignment.

C- 77-78%; Unsatisfactory, Little accomplishment. Course needs to be repeated for credit.
Sample Internship Description for 3-credit course

Janet Frost is offering an internship related to the Riverpoint Advanced Mathematics Partnership professional development project. This project involves work with secondary and postsecondary mathematics and mathematics education faculty in order to improve students' transition from high school to college mathematics courses. Research on this course includes both quantitative and qualitative analysis. Interns in this project could choose to participate in any of the following activities:

I. Lesson observations
   a. Attendance at observations
   b. Analysis of observation videotapes, including but not limited to:
      i. Lesson structure, objectives, and activities
      ii. Student attributes (e.g., engagement/perseverance)
      iii. Classroom discourse
      iv. Cognitive demand
      v. Assessment

II. Workshop observations
   a. Analysis of workshop interactions and work, including but not limited to:
      i. Team interactions
      ii. Participant engagement
      iii. Participant mathematics content explanations, responses

III. Teacher, administrator, student interviews
   a. Development of interview questions
   b. Interview attendance or participation
   c. Analysis of interview transcripts, including but not limited to topics such as:
      i. Teacher intent
      ii. Teacher curricular reasoning
      iii. Teacher change
      iv. Similarities and differences across teacher courses, multiple teachers, grade levels
      v. Administrator project knowledge
      vi. Administrator change
      vii. Student response to course design
      viii. Student identification of issues
      ix. Student change

IV. Project workshop data analysis
   a. Student work on common tasks across all grade levels and institutions
   b. Teachers' concept maps
   c. Teachers' self-reported changes
Depending on the intern selection among the options above, a reading list and schedule will be assigned.

**Sample reading list** (Weekly assignments will be determined by the project faculty and intern, according to the intern’s proposal.)

Qualitative interviews and case studies

Project issue and descriptions; student learning in mathematics
revisions.pdf (accessed July 13, 2010).

Professional Learning Communities

Teacher professional development

Mathematics teacher beliefs, identities, and contexts
Teacher learning and change


General Information and Expectations

**Academic Integrity.** Academic dishonesty, including all forms of cheating, plagiarism, and fabrication, is prohibited. Knowingly facilitating academic dishonesty is also prohibited. The expectation of the University is that all students will accept these standards and conduct themselves as responsible members of the academic community. Please take time to read the full statement on student conduct at [http://www.conduct.wsu.edu/](http://www.conduct.wsu.edu/).

Students are encouraged to collaborate with others in many aspects of this course, including on the weekly problems. For all formative and summative assessment and lesson design, unit plan, and literature review assignments, students must submit their own original work or provide clear citations and references for ideas taken from other sources, including other people or teachers. Students who present others’ work as their own, including “cutting and pasting” or directly quoting parts of other documents into their work without appropriate formatting and citations that indicate material provided by another author, or do not provide written acknowledgement of others’ ideas or written work when referenced in assignments will always be asked to redo the assignment, and, if the plagiarism extends beyond a few phrases, will receive an F in the course.

**Attendance policy.** Because class discussion and activities provide the main source of learning for this course and make-up activities are not provided, absences are likely to decrease students’ ability to master the course material. If a student misses more than 1-2 classes, the student will be asked to meet with Janet to discuss the reason for the absences and plans for avoiding future absences.
Attitude. It is likely that you will encounter new ideas about mathematics and mathematics education in this course, and that the instructional approaches we discuss will be quite a bit different from those you experienced as a K-12 student. You will be most successful in learning if you actively participate and maintain a positive and open attitude.

Inclusion statement. The instructor of this course is committed to teaching equitably and inclusively, addressing the academic needs, concerns, and interests of every student, regardless of age, gender, race/ethnicity, religion, social class, sexual orientation, English language proficiency, or disability.

Instructional approach. The primary instructional approach used in this course will be small and large group discussions and cooperative work. An emphasis will be placed on active student participation in discussions and activities.

Late assignments: In order to submit a late assignment, you must meet with Janet to discuss the reason why the assignment is late and your plans for addressing the issue so that you will not have any other late assignments. In some cases, re-submission of assignments is permissible. If you would like to re-submit an assignment, meet with Janet to discuss this option.

Professional communication. The faculty members of the Teaching & Learning Department and the College of Education emphasize the importance of effective written and oral communication for teachers. Students of the program are expected to demonstrate that they can meet standards of professional communication on all of their assignments. A student who fails to adhere to the conventions of writing (e.g. makes consistent grammatical and/or spelling errors, frequently misuses words or phrases, fails to organize writing in an effective manner) may be required to work with the Writing Center or complete additional coursework. Students who fail to meet expectations after being provided with opportunity for remediation and improvement may be removed from the program. Students will also be held accountable for demonstrating that they are capable of clear and professional verbal communication.

Safety and emergency notification. The WSU Campus Safety Plan contains a comprehensive listing of university policies, procedures, statistics, and information relating to campus safety, emergency management, and the health and welfare of the campus community. The Campus Safety Plan can be found at: http://safetyplan.wsu.edu/. Please visit this site to become familiar with the campus safety and emergency information provided. Links to the WSU Spokane, Tri-Cities, and Vancouver Safety Plans are also available on this web site. All faculty, staff, and students should go to the zzusis portal at http://zzusis.wsu.edu and register their emergency contact information for the Crisis Communication System (CCS). Enter your network ID and password and you will be taken to the zzusis portal page. On the left column, you will see a place to update your emergency information.
**Students with disabilities.** Reasonable accommodations are available for students with a documented disability. If you have a disability and need accommodations to fully participate in this class, please either visit or call a Disability Specialist on your home campus:

**Pullman:** 509-335-3417 [http://accesscenter.wsu.edu, Access.Center@wsu.edu](http://accesscenter.wsu.edu, Access.Center@wsu.edu)
**Spokane:** 509-358-7534  
[http://spokane.wsu.edu/students/current/studentaffairs/disability/](http://spokane.wsu.edu/students/current/studentaffairs/disability/)