

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: 08/16/2013 ☒ New course ☐ Temporary course ☐ Drop service course  
(effective date cannot be retroactive) ☐ There is a course fee associated with this course (see instructions)

- ☐ Variable credit ☒ Repeat credit (cumulative maximum 6 hours)  
☐ Increase credit (former credit         ) ☐ Lecture-lab ratio (former ratio         )  
☐ Number (former number         ) ☐ Prefix (former prefix         )  
☐ Crosslisting (between WSU departments) ☐ Cooperative listing (UI prefix and number         )  
(Must have both departmental signatures) taught by: WSU ☐ UI ☐ jointly taught ☐  
☐ 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 591 Research Internship in Math/Science Education  
course prefix course no. title

3                            None  
credit lecture hrs lab hrs studio hrs prerequisite  
per week per week per week

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: David Slavitt Phone number: (360) 546-9653 Email: dslavitt@wsu.edu  
Contact: Debra Barnett Phone number: (360) 546-9660 Email: debarnett@vancouver.wsu.edu  
Campus Zip Code: 9600

- 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.

Darcy Webb 10-28-12 Andru 11-5-12  
Chair/date Dean/date 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.

## **Course Rationale**

### **T & L 591: Research Internship in Math/Science Education**

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 in the area of mathematics and/or science education. 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.

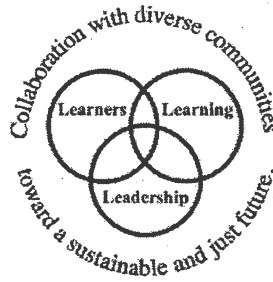
The course has no anticipated impacts on other units in Pullman. The course will be available to students at all campuses who are interested in mathematics and/or science educational research. The course will be taught on a rotating basis by faculty on the Pullman, Spokane, Tri-Cities and Vancouver campuses to ensure equitability in faculty load.

## **T & L 591: Research Internship in Math/Science Education**

Teaching and Learning Department

College of Education

Washington State University



### **Course Description and Objective**

The internship course will provide 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.

### **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 in a related area. Intern responsibilities will include any or all of the following:

- Development of a project-based literature review
- Data collection
- Data analysis
- 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. 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.

### **Intern Evaluation**

Because of the individualized nature of the course, the student intern and faculty mentor will discuss, develop, and submit to the internship coordinator precise grading criteria. Although the final responsibility for assigning the course grade resides with the course coordinator, the coordinator will work with the faculty mentor in assigning the final grade. The following provide guidance to this process:

A: Exceptional work, meets all criteria and exceeds expectations as outlined in the internship project proposal.

A-: Excellent work, well-developed project, scholarly approach, demonstrates initiative and problem solving skills (goes beyond merely following mentor's directions/instructions and contributes to the thinking and decisions in executing the project).

B+: Fully accomplished all proposed goals described in the internship project proposal; demonstrates an understanding of the concepts, processes, theories, and approaches of the project.

B: Accomplished primary goals described in the internship project proposal and/or all goals were addressed but not fully explored; demonstrates basic understanding of the concepts, processes, theories, and approaches of the project.

B-: Satisfactory work.

C+,C,C-: Minimally satisfactory/ Partial accomplishment, minimal requirements of the project goals were accomplished, lack of evidence of thorough understanding of the concepts, processes, theories, approaches of the course/assignment.

D: Failed to accomplish most proposed goals described in the internship project proposal; only marginal understanding of the concepts, processes, theories, and approaches of the project.

F: Failed to execute the proposed project, extremely poor work, approach to project lacked scholarly focus and approach, demonstrated lack of initiative and problem solving skills.

### **Sample Internship Description**

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

- Fontana, A. & Frey, J.H. (2005). The interview: From neutral status to political involvement. In N. K. Denzin & Y. S. Lincoln (eds.) *The Sage handbook of qualitative research* (3<sup>rd</sup> ed.) (pp. 697-727). Thousand Oaks, CA: Sage.
- Scheurich, J. J. (1997). A postmodern critique of research interviewing. In J. J. Scheurich (ed.), *Research method in the postmodern* (pp. 61-79). London: Falmer.
- Stake, R. (2005). Qualitative case studies. In N. K. Denzin & Y. S. Lincoln (eds.) *The Sage handbook of qualitative research* (3<sup>rd</sup> ed.) (pp. 443-466). Thousand Oaks, CA: Sage.

#### Project issue and descriptions; student learning in mathematics

- Attewell, Paul Al, David E. Lavin, Thurston Domina, and Tania Levey. "New Evidence on College Remediation." *The Journal of Higher Education* 77, no. 5 (September/October 2006): 886-924.
- Boaler, J. & Greeno, J. G. (2000). Identity, agency, and knowing in mathematical worlds. In J. Boaler (Ed.), *Multiple perspectives on mathematics teaching and learning* (pp. 171-200). Westport, CT: Ablex.
- Coomes, J., Frost, J. H., & Lindeblad, K. K. (In press) Learning through inter-institutional collaboration: Challenges and outcomes. *2012 NCTM Annual Yearbook: Professional collaboration*. National Council of Teachers of Mathematics.
- Frost, J. H. (2010, 2011). *Annual report*. Educators for the 21<sup>st</sup> Century 2009-2012: Riverpoint Advanced Mathematics Partnership
- Frost, J.H., Akmal, T. T., & Kingrey, J. U. (2010). Planning teacher professional development: The struggles and successes of an inter-organizational collaboration. *Professional Development in Education* 36(4), 581-595.
- Frost, J.H., Coomes, J., & Lindeblad, K. (under review) Partnership without hierarchy: Postsecondary outcomes from a cross-sector mathematics collaboration. *School-University Partnerships*.
- National Research Council (U.S.), Suzanne Donovan, and John Bransford. *How students learn: Mathematics in the classroom*. Washington, D.C.: National

Academies Press, 2005

- Stein, Mary Kay, Margaret Schwan Smith, Marjorie A. Henningsen, and Edward A. Silver. *Implementing standards-based mathematics instruction: A casebook for professional development*. New York: Teachers College Press, 2000.
- Transition Math Project. *College Readiness Standards in Math*. 2004. <http://www.transitionmathproject.org/standards/doc/2010-crs-16feb10-revisions.pdf> (accessed July 13, 2010).

#### Professional Learning Communities

- Dooner, A-M., Mandzuk, D., & Clifton, R. A. (2008). Stages of collaboration and the realities of professional learning communities. *Teaching and Teacher Education*, 24, (3), 564-574.
- DuFour, Richard. "What Is a "Professional Learning Community"?" *Educational Leadership* 61, no. 8 (May 2004): 6-11.
- Gallucci, C. (2003). Communities of practice and the mediation of teachers' responses to standards-based reform. *Education Policy Analysis Archives*, 11(35). Retrieved from <http://epaa.asu.edu/apaa/v11n35>
- Horn, I. S. (2007). Fast kids, slow kids, lazy kids: Framing the mismatch problem in mathematics teachers' conversations. *The Journal of the Learning Sciences*, 16(1), 37-79.
- Little, J. W. (2003). Inside teacher community: Representations of classroom practice. *Teachers College Record*, 105(6), 913-945.

#### Teacher professional development

- Darling-Hammond, Linda, Ruth Chung Wei, Alethea Andree, Nikole Richardson, and Stelios Orphanos. *Professional Learning in the Learning Profession: A Status Report on Teacher Development in the United States and Beyond*, National Staff Development Council, 2009.
- Fullan, M. (1993). *Change forces: Probing the depths of educational reform*. New York: Routledge.
- Opfer, V. D. & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376-407.
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#### Mathematics teacher beliefs, identities, and contexts

- Cobb, P., McClain, K., Lamberg, T. dS., & Dean, C. (2003). Situating teachers' instructional practices in the institutional setting of the school and district. *Educational Researcher*, 32(6), 13-24.
- Drake, C., Spillane, J.P., & Hufferd-Ackles, K. (2001). Storied identities: Teacher learning and subject matter context. *Journal of Curriculum Studies*, 33(1), 1-23.
- Lortie, D. (1975/2002). *Schoolteacher: A sociological study* (2<sup>nd</sup> ed). Chicago: University of Chicago Press.
- McLaughlin, M. W., Talbert, J. E., & Bascia, N. (1990). *The contexts of teaching in secondary schools: Teachers' realities*. New York: Teachers College Press.

- Rousseau, C. K. (2004). Shared beliefs, conflict, and a retreat from reform: The story of a professional community of high school mathematics teachers. *Teaching and Teacher Education*, 20 (8), 783-796.
- Speer, N. M. (2008). Connecting beliefs and practices: A fine-grained analysis of a college mathematics teacher's collections of beliefs and their relationship to his instructional practices. *Cognition and Instruction*, 26(2), 218-267.

#### Teacher learning and change

- Battey, D. & Franke, M. (2008). Transforming identities: Understanding teachers across professional development and classroom practice. *Teacher Education Quarterly*, 35(3), 127-149.
- Goos, M. & Geiger, V. (2010). Theoretical perspectives on mathematics teacher change. *Journal of Mathematics Teacher Education*, 13(6), 499-507.
- Gresalfi, M. & Cobb, P. (2011). Negotiating identities for mathematics teaching in the context of professional development. *Journal for Research in Mathematics Education*, 42(3), 270-304.
- Kazemi, E. & Hubbard, A. (2008). New directions for the design and study of professional development: Attending to the coevolution of teachers' participation across contexts. *Journal of Teacher Education*, 59(5), 428-441.
- Richardson, V. & Placier, P. (2001). Teacher change. In V. Richardson (Ed.), *Handbook of research on teaching* (4<sup>th</sup> ed, pp. 905-947). Washington, D. C.: American Educational Research Association.
- Spillane, J. P. & Zeuli, J. S. (1999). Reform and teaching: Exploring patterns of practice in the context of national and state mathematics reform. *Education Evaluation and Policy Analysis*, 21(1), 1-27.

### General Information and Expectations

**Disability Accommodation:** Reasonable accommodations are available for students with a documented disability. All accommodations must be approved through your WSU Disability Services office. If you have a disability and need accommodations, we recommend that you begin the process as soon as possible. All accommodations must be approved through Disability Services. For more information, contact a Disability Specialist on your home campus.

- **Spokane** /students/current/StudentAffairs/disability/index.html
- **Pullman** <http://accesscenter.wsu.edu>
- **Tri-Cities:** <http://www.tricity.wsu.edu/disability/index.html>
- **Vancouver:** <http://studentaffairs.vancouver.wsu.edu/student-resource-center/disability-services>

**Academic Integrity:** Academic integrity is the cornerstone of the university and will be strongly enforced in this course. Any student found in violation of the

academic integrity policy will be given an "F" for the course and will be referred to the Office of Student Conduct. Read <http://academicintegrity.wsu.edu/>  
For additional information about WSU's Academic Integrity policy, procedures, and definitions, please check online at  
<http://www.conduct.wsu.edu/default.asp?PageID=338> and  
<http://www.conduct.wsu.edu/>.

Note: Plagiarism is a violation of academic integrity. Students sometimes do not realize what constitutes plagiarism. Please read the information at  
<http://www.wsulibs.wsu.edu/plagiarism/what.html> and associated links.

**Emergency Notification System:** WSU has made an **emergency notification system** available for faculty, students and staff. Please register at myWSU with emergency contact information (cell, email, text, etc). You may have been prompted to complete emergency contact information when registering for classes on ROnet. In the event of a **Building Evacuation**, a map at each classroom entrance shows the evacuation point for each building. Please refer to it.

Finally, in case of **class cancellation campus-wide**, please check local media, the appropriate WSU web page and/or <http://www.flashalert.net/>. Individual class cancellations may be made at the discretion of the instructor. Each individual is expected to make the best decision for their personal circumstances, taking safety into account.

**Audio, video, digital, commercial note-taking and other recording during class:** Copyright (insert year) (insert Faculty Name) as to this syllabus, all lectures, and course-related written materials. During this course students are prohibited from making audio, video, digital, or other recordings during class, or selling notes to or being paid for taking notes by any person or commercial firm without the express written permission of the faculty member teaching this course.



## Oakley, Christine Kay

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**From:** Slavitt, David  
**Sent:** Friday, December 07, 2012 11:48 AM  
**To:** Oakley, Christine Kay  
**Subject:** Re: T & L course submissions  
**Attachments:** image001.png; TL531.pdf; TL581.pdf

Christine,

I believe I have taken care of the suggested changes. I have also worked with my colleague Tamara Holmlund Nelson in taking care of the edits required for T&L 531.

Specifically, here are the changes made:

T&L 581: (see attached)

SLOs have been added under "Course Objectives"

An additional week of readings has been added to the syllabus

Clarification was provided to the individual assignments, as well as the overall grading scale

T&L 531: (see attached)

An additional week has been added to the course schedule

T&L 584:

One of the weeks will serve as spring break

T&L 591:

We are comfortable with changing the maximum to 6 credits. This would still allow for a year-long research internship at 3 credits per semester

Thanks for the feedback. If I can be of any further help to the committee, or if you desire to meet with me, please let me know.

Also, if you have emailed any of the other program faculty besides Tamara Nelson about changes to course syllabi, could you please let me know? I am trying to coordinate this effort.

Thanks again,  
Dave

David Slavitt  
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**From:** <Oakley>, Christine Kay <[coakley@wsu.edu](mailto:coakley@wsu.edu)>

**Date:** Thursday, December 6, 2012 6:50 PM

**To:** David Slavit <[dslavit@vancouver.wsu.edu](mailto:dslavit@vancouver.wsu.edu)>

**Subject:** T & L course submissions

Hello Dr Slavit

I am on the Catalog Subcommittee and have reviewed your submissions for T & L 581, 585, and 591. I'm requesting that you submit a revised syllabi for these courses with the following changes that meet WSU syllabus guidelines:

1. 581 – All WSU syllabi are required to have explicit student learning outcomes. Please include the SLOs for this course. The current schedule has 14 weeks of instruction – week 8 is designated as “spring break;” please include a 15<sup>th</sup> week. The Subcommittee was confused about the grading scale. Please indicate the points or percentages assigned to the various graded work in the course and revise the scale to indicate what constitutes a A, B, etc based on these percentages or point distributions. Thanks!
2. 584 – This course schedule has 16 weeks. Please indicate if one of the weeks is a break week or just let me know that you plan to utilize finals week as a teaching week.
3. 591 – The Subcommittee is concerned about the 9 repeatable credits. Given the nature of the research internship, we suggest that the course might be applicable for repeating twice (6 cum max hours), rather than 9. We will need a rationale for the 9 cum max credits if you would like this request to remain.

Thanks so much. Please don't hesitate to contact me with your questions or concerns. You can send the revised syllabus directly to me!

Take care,

Christine

**Christine K. Oakley MPH PhD**

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