SED 580 Research & Evaluation (3 credits)
Summer 2013

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Course Description
Analysis of qualitative and quantitative empirical research in science education, mathematics education and education in general. Development of data collection instruments for use by researchers and teachers of science education, mathematics education and education in general.

Blackboard — This course will be delivered via Blackboard, your online learning community, where you will interact with your classmates and instructor. Within the course Blackboard site you will access the learning materials, tutorials, and syllabus; discuss issues; submit assignments; email other students and the instructor; participate in online activities; and display your projects. To preview how an online course works, visit the Ecampus Course Demo. For technical assistance, Blackboard and otherwise, see http://ecampus.oregonstate.edu/services/technical-help.htm

The purpose of this course is to develop:
- Conceptual background and functional knowledge for conducting small program or project evaluation. Evaluation is characterized by the collection and analysis of data for the purpose of making practical judgments about the merit or worth of a specific educational program.
- Conceptual background and functional knowledge for conducting action research. Action research involves systematic investigation by practitioners. The steps of action research are grounded in the practitioner’s interests and workplace. The teacher becomes researcher.
- Skills, habits, and dispositions of a critical consumer of educational research. Research is characterized by the systematic collection and analysis of information (sometimes called data) in order to develop internally and sometimes externally valid descriptions, predictions, interventions, and explanations (adapted from Gall et al., 2005, p. 3).

Texts and other resources
Required:
A handbook published by a federal agency that funds many math and science projects, the National Science Foundation, provides guidance for developing and conducting evaluations. This handbook is available without cost online at the URL. It is appropriate for individuals intending to undertake a capstone Master’s project evaluating a professional development project:

Certification of Education for the Ethical Use of Human Participants, go to: http://oregonstate.edu/research/ori/irb.htm

Additional readings as specified for each unit.

Optional:

Web Resources
Valley Library Research Tutorial http://osulibrary.orst.edu/instruction/tutorials/
Basic Statistics http://www.statsoft.com/textbook/stbasic.html
Hyperstat Online Textbook http://davidmlane.com/hyperstat/
Students t-test http://www.physics.csbsju.edu/stats/t-test.html
Research Methods Knowledge Base http://www.socialresearchmethods.net/kb

Schedule: During Summer, this course moves at two units a week:

Week of June 25:
Unit 1: Comparing Research with Evaluation, Developing Evaluation Questions
Unit 2: Developing Surveys

Week of July 2:
Unit 3: Developing Interview Protocols
Unit 4: Articulating Evaluation Procedures

Week of July 9:
Unit 5: Developing a Case Study
Unit 6: Developing an Analysis and Interpretation Plan

Week of July 16
Unit 7: Analyzing Various Data Sources and Answering Questions Posed
Unit 8: Developing a Reporting Summary

Week of July 23:
Unit 9: Developing a Management Plan
Unit 10: Reflecting Upon the Writing Process

Final Project is due July 27
**Evaluation of Student Performance:**
All assignments must be submitted by midnight of the due date. Unless other arrangements are made ahead of time, late assignments are reduced by 5 points at the end of the day in which they are due. There is no extra-credit work. Special circumstances will be handled on a case by case basis.

Each unit has three assignments, weighted at 15 points each, for a total of 45 points. One of these assignments includes participating in a community of learners by posting on a discussion board and responding to colleagues’ comments and questions. The other assignments typically include reflecting on a process relevant to conducting evaluations and preparing drafts for particular sections of the evaluation proposal.

Three assignments in each of ten units: 450 points
The final version of the proposal (electronic file and website) 50 points
Total points: 500 points

**Grading Scale:**
- 470-500: A
- 450-469: A-
- 435-449: B+
- 420-433: B
- 400-419: B-
- 385-399: C+
- 370-384: C

**Statement Regarding Students with Disabilities:**
Accommodations are collaborative efforts between students, faculty and Services for Students with Disabilities (SSD) as [http://ecampus.oregonstate.edu/services/student-services/ssd.htm](http://ecampus.oregonstate.edu/services/student-services/ssd.htm). Students with accommodations approved through SSD are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through SSD should contact SSD immediately at 541-737-4098.

**Expectations for Student Conduct:**
Student conduct is governed by the university’s policies, as explained in the [Office of Student Conduct: information and regulations](http://ecampus.oregonstate.edu/services/student-conduct).

**Plagiarism**
You are expected to submit your own work in all your assignments, postings to the discussion board, and other communications, and to clearly give credit to the work of others when you use it. Academic dishonesty will result in a grade of “F.”

**Link to Conceptual Framework, Knowledge Base, and National and State**
This course is associated with the Professional Teacher and Counselor Education (PTCE) unit Conceptual Framework, which is based on four foundational or core values that are listed below. To find out more about how the knowledge base relates to the National Council for Accreditation...
of Teacher Education (NCATE) guidelines, review the Conceptual Framework at the website: http://oregonstate.edu/education/accreditation/

1. Ethics and Professionalism
2. Reflective Practitioner
3. Lifelong Learners
4. Diversity and Equity

With respect to national standards, this course includes application of NCATE content knowledge, professional and pedagogical knowledge and skills, dispositions, and student learning. NCATE Unit Standards: http://www.ncate.org/public/unitStandardsRubrics.asp?ch=4

The Oregon TSPC Standards addressed in this course include the following:

- Standard 1: Plan Instruction that supports student progress in learning and is appropriate for the developmental level.
- Standard 2: Establish a classroom climate conducive to learning.
- Standard 3: Engage students in planned learning activities.
- Standard 4: Evaluate, act upon, and report student progress in learning.
- Standard 5: Exhibits professional behaviors, ethics, and values.

**Authorization Level Focus**
- Elementary, Middle, High School levels are the focus in this course.