

## Preliminary Syllabus

### Introduction to Educational Research (1 credit) Spring 2005

**Location:**

WPI

(room location to be announced)

**Time :**

There will be seven 2-hour meetings during the spring 2005 semester. Exact day and times will be announced later.

**Instructor:**

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**Introduction to Course**

The course is an introduction to education research with application primarily in the sciences and engineering. We will explore research rigor in technical education, research project design, theoretical foundations of the various traditions, data collection and analysis, assessment and evaluation principles, and possible funding sources. The course will include lectures, class discussions, individual and group activities. A variety of journal and book readings will provide background information.

*Prerequisite:* Successful completion of IDG 501: Seminar in College Teaching or permission of instructor.

**Course Objectives**

After completing the course, the student should be able to:

1. Articulate the various theoretical traditions supporting educational research
2. Describe the general aspects of educational research design
3. Analyze and critique examples from the archival literature
4. For a specific research project:
  - a. Make informed decisions regarding research design
  - b. Formulate research questions
  - c. Identify appropriate frameworks
  - d. Choose valid methodologies
  - e. Analyze qualitative and quantitative data
  - f. Derive appropriate meaning from the results

**Possible Background Reading** (final text and course choices to be announced)

Shavelson, R.J., and Towne, T., eds. *Scientific Research in Education*, National Research Council, 2002.

Creswell, J. W., *Qualitative Inquiry and Research Design: Choosing Among Five Traditions*, Sage Publications, 1998.

Pelligrino, J. W., Chudowski, N., and Glaser, R. eds. *Knowing What Students Know: The Science and Design of Educational Assessment*, National Academy Press, 2003.

Bransford, J. D., Brown, A. L., and Cocking, R. R., *How People Learn: Brain, Mind, Experience, and School*, National Academy Press, 2000.

Mentkowsi, M. and associates, *Learning That Lasts: Integrating Learning, Development and Performance in College and Beyond*, Jossey-Bass, 2000.

LeCompte, M. D., and Schensul, J. J., *Designing & Conducting Ethnographic Research*, Alta Mira Press, 1999.

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