Design of a Pedagogy Course for Graduate Students and Beginning Faculty

Karl A. Smith
Department of Civil Engineering
University of Minnesota
Minneapolis, MN 55455

Olga Vsevolodovna Kritskaya
Higher, Adult & Lifelong Education
Michigan State University
East Lansing, MI 48824

Abstract – Results of survey of pedagogy courses in SMET disciplines (predominantly engineering) for graduate students and beginning faculty. Summary of syllabi from numerous courses around the US. Elements of a new course designed to focus not only on informing participants but also on transforming them.

Summary of key elements from courses for graduate students and beginning faculty at 14 different institutions, including (1) disciplinary area, (2) participants, (3) organizational format (time, number of credits, format, grading, etc), (4) textbook, and (5) reading list. Extended summary from selected courses on (1) course objectives, (2) topics, (3) projects and activities, (4) additional features. Recommended common features for a course in college and university teaching for graduate students and beginning faculty.

Summary of conventional course design texts, including Robert M. Diamond's 1998 *Designing & Assessing Courses and Curricula: A Practical Guide* (Jossey-Bass). A contrasting case will be made for course design using the features of design outlined by Leifer: "a social process that identifies a need, defines a problem, and specifies a plan that enables others to manufacture the solutions." (Larry Leifer, Stanford Center for Design Research).

According to Leifer, engineering design practices include:
·   Negotiating understanding
·   Conserving ambiguity
·   Tailoring engineering communications for recipients
·   Manipulating mundane representations

Leifer's definition of engineering education -- *a social activity that identifies a need, defines a pedagogical problem and specifies a curriculum that enables others to learn from experience* is used to guide the course design process. Leifer's three provisional "laws" of design and education are:

Engineering design is a social activity
Designers require ambiguity
All design is re-design

Education is a social activity
Learning requires ambiguity
All education is re-education

Implications of these "laws" for course design will be described and a prototype pedagogy course will be outlined.