GEORGE MASON UNIVERSITY
COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT
Instructional Technology Program
EDIT 891 (1-9 variable credits)
Design Research Practicum
Semester Year TBD
Meeting Time/Days TBD
Location TBD

PROFESSOR(S):
Name: Dr. Priscilla Norton
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PREREQUISITE: EDRS 811, 812 or equivalent
                    EDIT 803

COURSE DESCRIPTION:

Applies multiple design research cycles to an identified research problem to systematically test and improve technology-based product interventions or other curriculum/training strategies or materials in order to systematically develop knowledge related to teaching, learning and/or training in context.

NATURE OF COURSE DELIVERY:

This design research internship focuses on providing doctoral students opportunities to conduct cycles of integrative design research to investigate teaching/learning or training interventions through the design, development and implementation of an identified educational intervention. Interventions may consist of a technology-based product/system, curriculum/training intervention, informal or formal teaching-learning strategy or materials or projects approved by the instructor. The research internship will consist of multiple cycles of design research investigation and may incorporate multiple research methods including both applied and empirical methodologies. Students will work one-on-one with the instructor of record or in small groups to intensively study their research interest. Each cycle of design research will culminate in documentation of a research cycle and a scholarly product (e.g. publishable paper, conference presentation, draft grant proposal or design product report). The intent of the successive cycles is to promote progressively deeper investigation and understanding of the educational intervention and the impact of the intervention on the participants.

This course will be conducted as an experiential research learning experience that promotes a planned, systematic and iterative approach in conducting design research. The format of the course may include face-to-face and online one-on-one meetings between the student and instructor and/or small group meetings as well as discussions, reporting and presenting research

findings. The course will incorporate an online course environment to allow students to reflect, generate and post scholarly products related to each design cycle. Each accepted scholarly will complete a repetitive designated number of credits (either 3 or 6) as determined by the instructor across multiple cycles of design research culminating eventually in 9 credits.

LEARNER OUTCOMES:

This course is designed to enable students to:
- Apply several design research cycles to an identified research problem
- Design and develop (or improve) a learning/training intervention
- Draft or document a scholarly product (described above) that evidences a cycle of design research
- Deeply and iteratively investigate an identified learning/training phenomenon over several cycles of design and research

PROFESSIONAL STANDARDS:

This course adheres to the following Instructional Technology Program Goals and Standards for Programs in Educational Communications and Instructional Technologies established by the Association of Educational Communication and Technologies (AECT) under the National Council for the Accreditation of Teacher Education (NCATE).

Standard 1 – Design

a. Demonstrate in-depth synthesis and evaluation of the theoretical constructs and research methodologies related to instructional design as applied in multiple contexts.
b. Utilize the research, theoretical, and practitioner foundations of the field in the development of instructional materials.
c. Articulate the relationship within the discipline among theory, research, and practice as well as the interrelationships among people, processes, and devices.

Standard 2 – Apply current research and theory to the practice of instructional design

a. Promote, apply and disseminate the results of instructional design theory and research.
b. Read instructional design research, theory and practice literature.
c. Apply concepts, techniques and theory of other disciplines to problems of learning instruction and instructional design.

REQUIRED TEXTS:

Kelly, A.E., Lesh, R.A. and Baek, J.Y. (2008). Handbook of Design Research Methods in Education: Innovations in Science, Technology, Engineering and Mathematics Learning and Teaching, New York: Routledge.

REQUIRED READINGS:

A list of related readings on design research will be disseminated during the first week of the course as well as student-identified relevant research articles to inform planned design research cycles.

COURSE REQUIREMENTS, PERFORMANCE-BASED ASSESSMENT, AND EVALUATION CRITERIA:

A. Requirements: There are four main requirements in this course: (1) research internship project proposal (10% of grade); (2) application of applied/empirical research method in the context of design (40% of grade); (3) documentation of design research cycle scholarly product (40% of grade) and (4) participation/discussion. These requirements are examples of performance-based assessments (PBA) and are described in detail below.

(1) Research internship project proposal (10%): The design research internship project proposal describes a single phase or an identified iterative cycle(s) within a progressive design research project. Specifically the 3-4 page research internship proposal (see attached form) will include :

o   Design Research Cycle Proposal: Students will write a 3-4 page research cycle project proposal that describes a statement of the research problem, brief description of related literature, theoretical conjectures and related research questions, phase of design research (whether initial or follow-up iterative cycle), research methods (may include multiple methods) and associated process of design/implementation/evaluation/revision as well as identified scholarly product (see no. 3 below).
o   Approval by Instructor: Students are expected to obtain instructor approval of research cycle prior to conducting this research.
o   Human Subjects Review Board approval: Upon approval by the instructor of the research cycle plan, students are responsible to submit and obtain HSRB approval at George Mason University according to prescribed procedures and regulations.

(2) Application of applied/empirical research method(s) in the context of design: (40%):

o   Cycle of Design Research Upon approval of the design research cycle plan, students will conduct a cycle of research incorporating applied or empirical research methods in the context of iterative design and development. This may involve one or more methods of applied design, usability testing, ethnographic, qualitative or quantitative data collection to inform teaching, learning or training as well as iterative design cycles in the identified context. The application of multiple or mixed methods design will be highly recommended and results should contribute to the revision of the design as well as generate new knowledge about the learning or training audience and/or context. Students will be expected to independently collect and analyze data with oversight by the instructor and synthesize findings into a scholarly product described below documenting/reporting their design research process.

(3) Documentation of Design Research Scholarly Product (40%):

o <u>Design Research Report</u>: Each student will document or report their design research cycle findings in a scholarly product. These scholarly products may include one or more of the following: a) publishable paper draft, conference presentation, grant proposal draft, design product formative evaluation report or an alternative product agreed upon with the instructor.

(4) Participation in Scholarly Discussions (10%):

o <u>Participation</u>: Each student will be expected to fully participate in scheduled face-to-face and online discussions/communications regarding the progression of their design research cycles as outlined by the instructor.

B. Performance-based assessments

The course includes 3 performance-based assessments (PBA) as described in the requirements section above. These include: (1) research internship project proposal (10% of grade); (2) application of applied/empirical research method in the context of design (40% of grade); (3) documentation of design research cycle scholarly product (40% of grade) and participation in scholarly discussions about design research (10% of grade). Each PBA will be evaluated through a rubric provided in the next section.

C. Criteria for evaluation

Rubric for face-to-face and online participation/discussion (10%):

o Outstanding contributor: contributions reflect exceptional preparation. Ideas offered are always substantive, providing one or more major insights as well as direction for the research and fellow design researchers. Frequent references are made to the readings, methods, research journal articles and/or to knowledge from other sources, often showing the ability to generalize or extend the material under discussion. If this person were not a member of the class, the quality of discussion would be diminished markedly.

o Good contributor: contributions reflect thorough preparation. Ideas offered are usually substantive, providing good insights and sometimes suggestions for other researchers. Occasional references are made to the readings, research journal articles, other's design research projects and/or to knowledge from other sources, sometimes showing the ability to generalize or extend the material under discussion. If this person were not a member of the class, the quality of discussion would be diminished.

o Adequate contributor: contributions reflect satisfactory preparation. Ideas offered are sometimes substantive, providing some useful insights but seldom offer new direction for the discussion and research. Some references are made to the readings, research journal articles and/or to knowledge from other sources but seldom generalize or extend the

material under discussion. If this person were not a member of the class, the quality of discussion would be diminished somewhat.

o Unsatisfactory contributor: Contributions reflect inadequate preparation and/or there is little contributions face-to-face or online. Ideas offered are seldom substantive, providing few insights and no suggestions or considerations for research. References to readings or research journals are rare or non-existent. If this person were not a member of the class, the quality of discussion and knowledge building would be unchanged.

o <u>Note</u>: Students who do not participate or contribute will receive zero points in the applicable area.

o Table 1 below provides the description of the 4 categories of this rubric.

CRITERIA	Unsatisfactory Contributor	Adequate Contributor	Good Contributor	Outstanding Contributor
Discussion of design research project progression				

Rubric for Research internship project proposal (10%):

Criteria	No Evidence	Beginning (Limited evidence)	Developing (Clear evidence)	Accomplished (Clear, convincing, substantial evidence)
Statement of the research problem				
Brief description of related literature				
Theoretical conjectures and related research questions				
Describe phase of design research (whether initial or follow-up iterative cycle				
Describe research methods (may include multiple methods) and associated process of design/implementation/evaluation/revision				
Clearly identifies targeted scholarly product(s)				

Comments: (additional comments will also be provided by instructor)

Rubric for cycle of design research cycle and documentation (30%):

Criteria	No Evidence	Beginning (Limited evidence)	Developing (Clear evidence)	Accomplished (Clear, convincing, substantial evidence)
Results from applied or empirical research methods in the context of iterative design and development (applied design, usability testing, ethnographic, qualitative or quantitative data collection) analyzed to inform teaching, learning or training as well as iterative design cycles.				
Documentation or report of analysis of design research cycle in a scholarly product. Scholarly products may include one or more of the following: a) publishable paper draft, conference presentation, grant proposal draft, design product formative evaluation report or an alternative product agreed upon with the instructor.				

CLASS SCHEDULE

This research internship experience dates/topics will be individually determined in conjunction with the instructor of record to customize the experience to the individual's research interests. During the first week of the semester, the student is expected to contact the instructor to set up a meeting to determine identified research direction and due dates for the design research project proposal, method of participation/discussion and identified scholarly product.

COLLEGE OF EDUCATION AND HUMAN DEVELOPMENT

Student Expectations

Students must adhere to the guidelines of the George Mason University Honor Code [See http://oai.gmu.edu/honor-code/].

Students with disabilities who seek accommodations in a course must be registered with the George Mason University Office of Disability Services (ODS) and inform their instructor, in writing, at the beginning of the semester [See **http://ods.gmu.edu/**].

Students must follow the university policy for Responsible Use of Computing [See **http://universitypolicy.gmu.edu/1301gen.html**].

Students are responsible for the content of university communications sent to their George Mason University email account and are required to activate their account and check it regularly. All communication from the university, college, school, and program will be sent to students solely through their Mason email account.

Students must follow the university policy stating that all sound emitting devices shall be turned off during class unless otherwise authorized by the instructor.

Students are expected to exhibit professional behaviors and dispositions at all times.

Campus Resources

The George Mason University Counseling and Psychological Services (CAPS) staff consists of professional counseling and clinical psychologists, social workers, and counselors who offer a wide range of services (e.g., individual and group counseling, workshops and outreach programs) to enhance students' personal experience and academic performance [See **http://caps.gmu.edu/**].

The George Mason University Writing Center staff provides a variety of resources and services (e.g., tutoring, workshops, writing guides, handbooks) intended to support students as they work to construct and share knowledge through writing [See **http://writingcenter.gmu.edu/**].

The College of Education & Human Development is committed to the following five values: collaboration, ethical leadership, innovation, research-based practice, and social justice. Students are expected to adhere to these principles. **http://cehd.gmu.edu/values/**

For additional information on the College of Education and Human Development, Graduate School of Education, please visit our website [See **http://gse.gmu.edu/**].