**META-COGNITION, MOTIVATION, & AFFECT, 2011 SPRING**

**INSTRUCTOR: RYAN S.J.d. BAKER**

**COURSE PROJECT**

**COURSE PROJECT PROPOSAL PRESENTATION:**  Monday, January 31

**COURSE PROJECT METHODS PAPER:** Monday, February 21

(before the beginning of class, by email)

**COURSE PROJECT PRESENTATIONS:** Monday, April 25 or Wednesday, April 27

**COURSE PROJECT RESULTS PAPER:** Monday, May 2

(before the beginning of class, by email)

In this assignment, you will use valid research methods to study a research question in the domain of meta-cognition, motivation, and affect. The goal of this project is to conduct research of publishable quality on a question of genuine scientific importance, such that if this project was conducted at sufficient scale, the result would be a paper publishable to a respected conference or journal. Note, however, that it is not required to conduct this project at this scale – for example, if 120 students would be required to conduct this project at publishable scale, you are not required to produce a sample of this magnitude. You should use a scale large enough to provide suggestive evidence if not conclusive evidence, though (e.g. a sample of 3 instead of a sample of 120 is unacceptable, but a sample of 20 would be acceptable).

This assignment can be carried out individually, or by a group of any size. You can partner with people who aren’t even in the class, if you want to. It’s cool with me. They don’t get course credit, though.

**Research Question:** Your first step will be to select a research question of scientific importance, in the domain of meta-cognition, motivation, or affect. Ideally, you will be able to find a way to link your project with the data or goals of your thesis research. You should of course consult with your graduate advisor regarding any use of their data in this course project. If it is not feasible to link this project with your thesis research, three other options are 1) to conduct a project using data that I have already collected, 2) collect new data, 3) use other available data, such as data in the Pittsburgh Science of Learning Center DataShop. You will present your research question in your course project proposal presentation, and will receive feedback from Professor Baker and the rest of the class.

**Methods:** Any scientific method considered publishable in respected and relevant scientific venues, to study meta-cognition, motivation, and affect, will be considered acceptable for this assignment. For instance, any method currently considered publishable in the Journal of Educational Psychology, or the International Journal of Artificial Intelligence and Education, would be considered acceptable. To give some examples of methods, it will be considered valid to use surveys, think-aloud protocols, rational analysis of log files, text replay coding, quantitative field observations, ethnography, or educational data mining. However, the chosen method must be executed in a valid and publishable fashion. For instance, using a well-known motivational survey such as PALS is acceptable; making up your own survey without validation is not acceptable. To give another example, using knowledge engineering and thorough study of the field to create a rational model of help avoidance is acceptable; quickly making up a new definition that conflates this construct with other known constructs is not acceptable. You will present your methods in your course project proposal presentation, and your course project methods paper, and receive feedback.

**Results:** You must present your results, using analyses which are valid for the paradigm which your methods come from. For instance, survey research typically requires statistical tests. You must discuss the implications of your results as to your original research question. You will present your results and interpretations in your course project presentation and your course project final paper.

**COURSE PROJECT PROPOSAL PRESENTATION:**  You will present your research question and methods briefly to the class. Your presentation should take 5 minutes. You will be graded on the scientific interestingness of your question, the scientific articulation of your question, the feasibility of your question, the appropriateness of your methods to address your question, the validity of your methods, and communication. You will be graded by Professor Baker but will receive feedback from the entire class.

**COURSE PROJECT METHODS PAPER:** You will write up your research questions and methods/research plans. You should include sufficient detail on relevant prior research to enable me to assess your project’s scientific contribution, explain the potential results of your study and their implications, discuss your study context (e.g. population and learning software or setting), present your methods with sufficient detail to evaluate them in detail, and present your plans for analysis. There are no guidelines on length or formatting. You will be graded on the same factors as the course project proposal presentation, and also on each of the factors listed here for this paper.

**COURSE PROJECT PRESENTATION:** You will present your methods, results, analysis, and interpretation to the class. Your presentation should take 25 minutes. You will be graded on all of the same factors as the previous steps of the project, as well as the quality of the implementation of your methods and analyses, and the quality of your interpretation. You will be graded by Professor Baker but will receive feedback from the entire class.

**COURSE PROJECT FINAL PAPER:** This represents a complete report of all of your work and findings on this project. Excluding any appendices (which can include instruments or full details on results), this paper should be formatted as if it were being submitted as a full paper to a respected conference or journal, and should be of appropriate length for submission. Please indicate which conference or journal’s format you are complying with. Your paper will be graded as if it were an actual submission to the conference or journal you chose, with the exception of study scale. Papers that are “accepted” or “accepted with minor revisions” get an A, papers that are “accepted with major revisions” get a B, papers that are “revise and resubmit” get a C, and papers that are “reject” get an F.