PSYC58: Cognitive Psychology Laboratory

Instructor: George Cree, Associate Professor, Psychology
Office: S-559
Email: george.cree@utoronto.ca
Phone: (416) 287-7439 (email is preferred)
Office hours: 1 hour after each class, or by appointment

TA: Ben Amsel, Graduate Student
Office: S-561
*Email:*ben.amsel@utoronto.ca
Office hours: by appointment

Class Times and Locations:

Tuesday:	12-2	B469
Thursday:	12-1	B469

Prerequisites: PSYB01H & [PSYB07H or SOCB06H or STAB22H] & [PSYB51H or PSYB57H]

Course Website: Blackboard (note that course evaluations will be conducted on the intranet)

Required Materials:

St. James, J. D., Schneider, W., & Eschman, A. (2005). *PsychMate: Experiments for Teaching Psychology. Student Guide. Version 2.0.* Pittsburgh, PA: Psychology Software Tools Inc.

Required readings will also be posted on Blackboard in PDF format.

E-Prime, PsychMate, and PDP++ software is available in the B-wing computer labs. We have a site license for E-Prime, so if you would like to install it on your laptop, let me know. PDP++ is freely available from: http://psych.colorado.edu/~oreilly/PDP++/PDP++.html. PsychMate can be installed on your personal windows based computer from your PsychMate student manual CD's.

Course Objectives:

1. To develop a deep understanding of modern methodological techniques used by cognitive psychologists to study the mind.
2. To familiarize students with the computer software required for designing reaction time based cognitive psychology experiments, and running computer simulations of mental phenomena.
3. To provide students with hands on experience collecting, manipulating, and analyzing data, and reporting methods and results in APA format, with the ultimate goal of preparing students to conduct their own professional, research-grade experiments.

Course Overview -- 12 Weeks:

1. E-Prime: Introduction to E-Studio and the Stroop Paradigm
2. E-Prime: Introduction to E-Merge, E-DataAid, and Data Analysis
3. Working Memory: History, Paradigms, & Current Views
4. Working Memory: E-Prime -- Building a Working Memory Experiment

****** **APA Report 1 Due End of Week 4 (Friday at 11: 59 pm)**

5. Working Memory: PDP++ -- Computational Models of Working Memory
6. Working Memory: BrainExaminer -- Neuroimaging and the Interpretation of fMRI Data
7. PsychMate: Perception
   - 1.1 The Filling-in of Blind Spots: Induced Scotomas
   - 1.2 Signal Detection
   - 1.3 Rotation of Mental Images
   - 1.4 Perceptual Matching
8. PsychMate: Perception
   - 1.5 Attentional Interference and the Stroop Effect
   - 1.6 Selective Attention and Response Competition
   - 1.7 Iconic Memory
   - 1.8 Change Blindness

****** **APA Report 2 Due End of Week 8 (Friday at 11:59 pm)**

9. PsychMate: Cognition
   - 2.1 Lexical Decisions
   - 2.2 Scanning Short-Term Memory
   - 2.3 Typicality in Categorization
   - 2.4 Sentence-Picture Comparison
10. PsychMate: Cognition
   - 2.5 Executive Control, Planning, and the Tower of London
   - 2.6 Organization in Memory as an Aid to Recall
   - 2.7 Recall, Recognition, and Encoding Specificity
   - 2.8 Automatic versus Controlled Processing
11. PsychMate: Cognition
   - 2.9 Mental Comparisons
   - 2.10 Additive Factors Methodology
   - 2.11 The Generation Effect
   - 4.1 Human Factors in Telephone Systems
12. PsychMate: Social Cognition
   - 3.1 The Prisoner's Dilemma
   - 3.2 Measures of Personality Traits
   - 3.3 Impression Formation
   - 3.4 Levels of Processing and the Self-Reference Effect
   - 3.5 Automaticity and Stereotyping
   - 3.6 Survey Research

****** **Final Exam During December Exam Period**

Course Evaluation
There are 3 evaluative mechanisms in this course:

1. **APA Report 1: Stroop (20%).** Students will implement their own Stroop experiment in E-Prime and write a short report, in APA format, outlining the motivation for the experiment, the hypotheses, methods, results, and implications of the findings.
2. **APA Report 2: Working Memory (40%).** Students will implement their own original working memory experiment in E-Prime (or simulation in PDP++, or analysis of neuroimaging data in BrainExaminer) and write a report, in APA format, outlining the motivation for the experiment/simulation, the hypotheses, methods, results, and implications of the findings. Students will also complete an ethics protocol for their experiment to familiarize themselves with the Ethics Approval System at U of T.
3. **Final Exam. (40%).** The final exam will take place during the December exam period. The exam will test your knowledge of theoretical and practical issues related to experiment design, E-Prime, Brain Imaging, and computational modeling. It will be a mix of formats (e.g., multiple choice, short answer, true/false, essay, etc.).

Short Lab Assignments will be distributed throughout the term. These will not be graded, but will serve as excellent practice for the final exam. It is highly recommended that you attempt the questions *before* the class in which the answers will be discussed.

Policies on Late Assignments:
A penalty of 5% will be deducted for each calendar day that an assignment is late. I do not have jurisdiction to extend deadlines for assignments beyond the last day of classes, so be sure to submit all materials by that time. If necessary, students may petition the Registrar's office for permission to submit assignments after the last day of classes. Such petitions are not automatically granted, and indeed, will likely be denied without a valid reason. Such petitions must be submitted by the last day of the final examination period of the term.
Policies on Missed Exams:
If you miss the final exam I cannot provide a make-up exam. Instead you will have to petition to be allowed to write a deferred final exam during the next exam period (up to four months away).
Policies on academic integrity
Please review the Code of Student Conduct, a copy of which can be found on pages 378-397 of the official print version of the UTSC Course Calendar.

Access*Ability*
Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the Access*Ability* Services Office as soon as possible. The UTSC Access*Ability* Services staff (located in S302) are available by appointment to assess specific needs, provide referrals, and arrange appropriate accommodations: (416) 287-7560 or ability@utsc.utoronto.ca. The sooner you let us know your needs the quicker we can assist you in achieving your learning goals in this course.

The above schedule, policies, procedures, and assignments in this course are subject to change in the event of extenuating circumstances.