

PSYC323: Visual Cognition Lab

Fall session, 2013

Syllabus

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Office Hours: Wednesday 12:00-1:30pm

Class Time: Tuesday 1:00-2:30pm and Thursday 11:30-1:00pm
Class Location: Humphrey Hall 219

Course Objectives

- Learn principles of experimental methods in human visual cognition, including experimental design, programming (Matlab), and statistical analysis.
- This course combines lectures, discussions, and hands-on experimental exercises.
- There will be three research units with each requiring submission of a lab report. These units will give you an opportunity to conduct visual cognition experiments, and to improve your scientific writing.

Course Format

Research Units:

- There will be three research units, each focusing on a particular topic in visual cognition.
- The topic will be introduced by the professor on the first day of the unit.
- For each unit, readings and thought papers must be done prior to the discussion class.
- Students will be expected to be prepared to provide their thoughts and reactions to the readings during the discussion class.
- Each unit will have a lab report which will be due at the end of that unit.

Tutorials:

- There will be four tutorials, each focusing on a particular research tool used in visual cognition.

Research Proposal Poster:

- The last four classes will be used to present your research proposals.
- Each student will provide a poster and prepare a 5 minute presentation describing their research proposal.
- Students and instructors will observe and evaluate your poster presentation and ask questions.

Workload

Thought Papers

- Thought papers are designed to assess your understanding and critical thinking with respect to the material presented in each research topic's lecture and readings. At the end of each lecture, one or two discussion questions will be presented that center around core theories, methodologies, or results.
- In a short paper, discuss each of these questions, critically evaluating the perspectives that can be taken on the issues. The papers will be marked with an overall mark (out of 5). Typical responses should be about one page long. Please do not use more than 500 words.
- Thought papers are due prior to the discussion class of each research unit.
 - Thought paper #1: **due Thursday, September 19**
 - Thought paper #2: **due Thursday, October 10**
 - Thought paper #3: **due Thursday, October 31**

Lab Reports

- For each unit, we will conduct an experiment.
- All data files will be collected, and you will analyze the data.
- For each research unit, you will complete and submit a research report (method, results, and discussion).
 - Lab report #1: **due Friday, Oct. 4**
 - Lab report #2: **due Friday, Oct. 25**
 - Lab report #3: **due Friday, Nov. 21**

Tutorial Assignments

- After each tutorial, a short assignment will be provided that tests your understanding of the research tool presented during that tutorial. These will be due at the end of that tutorial class.

Research Proposal Poster

- Each student will submit a research proposal poster.
- The research proposal posters will be presented to the class in a poster session.
- The content and execution of your presentation will be evaluated by the instructors and by your peers. Both the instructors' and the peer evaluations will be counted toward your presentation grade.

Evaluation

| | |
|--------------------------|---------------|
| Thought Papers | 10% |
| Lab Report 1 | 18% |
| Lab Report 2 | 18% |
| Lab Report 3 | 18% |
| Tutorial Assignments | 16% (4% each) |
| Research Proposal Poster | 20% |

Students with Disabilities

- Queen's University is committed to achieving full accessibility for persons with disabilities. Part of this commitment includes arranging academic accommodations for students with disabilities to ensure they have an equitable opportunity to participate in all of their academic activities. If you are a student with a disability and think you may need accommodations, you are strongly encouraged to contact the Disability Services Office (DSO) and register as early as possible. For more information, including important deadlines, please visit the DSO website at: <http://www.queensu.ca/hclds/ds/> ”

| Date | Topic |
|-----------------|-------------------------------------|
| Tues. Sept. 10 | Introduction to Visual Cognition |
| Thurs. Sept. 12 | Matlab Tutorial |
| Tues. Sept. 17 | Object-Based Attention |
| Thurs. Sept. 19 | Discussion |
| Tues. Sept. 24 | Lab Day: Data Collection |
| Thurs. Sept. 26 | Lab Day: Data Analysis |
| Tues. Oct. 01 | Lab Day: Report Writing |
| Thurs. Oct. 03 | Signal Detection Tutorial |
| Tues. Oct. 08 | Working Memory and Attention |
| Thurs. Oct. 10 | Discussion |
| Tues. Oct. 15 | Lab Day: Data Collection |
| Thurs. Oct. 17 | Lab Day: Data Analysis |
| Tues. Oct. 21 | Lab Day: Report Writing |
| Thurs. Oct. 24 | <tutorial to be announced> |
| Tues. Oct. 28 | Object-Substitution Masking |
| Thurs. Oct. 31 | Discussion |
| Tues. Nov. 05 | Lab Day: Data Collection |
| Thurs. Nov. 07 | Lab Day: Data Analysis |
| Tues. Nov. 12 | Lab Day: Report Writing |
| Thurs. Nov. 14 | Eye-Tracking Tutorial |
| Tues. Nov. 19 | Presentations (Group 1) |
| Thurs. Nov. 21 | Presentations (Group 2) |
| Tues. Nov. 26 | Presentations (Group 3) |
| Thurs. Nov. 28 | Presentations (Group 4) |

Readings

Object-Based Attention:

Moore, C.M., Yantis, S. & Vaughan, B. (1998). Object-based visual selection: Evidence from perceptual completion. *Psychological Science*, 9, 104-110.

Alvarez, G. A., & Scholl, B. J. (2005). How does attention select and track spatially extended objects? New effects of attentional concentration and amplification. *Journal of Experimental Psychology*, 134, 461-476.

Working Memory and Attention:

Downing, P.E. (2000). Interactions between visual working memory and selective attention. *Psychological Science*, 11, 467-473.

Woodman, G.F., & Luck, S.J. (2007). Do the contents of working memory automatically influence attentional selection during visual search? *Journal of Experimental Psychology: Human Perception and Performance*, 33(3), 363-377.

Object-Substitution Masking:

Enns, J. T. (2004). Object substitution and its relation to other forms of visual masking. *Vision Research*, 44, 1321-1331.

<2nd article to be added later>