

# PSYC323: Visual Cognition Lab

## Fall session, 2014

### Syllabus

Instructors: Daryl Wilson  
Office: Hum347  
Email: daryl.wilson@queensu.ca  
Contact: by email or appointment

TA: Geoff Harrison  
Office: Craine 210  
Email: 8gh3@queensu.ca  
Office Hours: Wednesday 10:00-11:30pm

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

### Course Objectives

- Learn principles of experimental methods in human visual cognition, including experimental design, programming (Matlab), data management, 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 allow you 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 three tutorials (2 classes each), each focusing on a particular research tool used in visual cognition.

#### **Research Proposal Poster:**

- Four classes near the end of the term 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 10). 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 Friday, September 19**
  - Thought paper #2: **due Friday, October 10**
  - Thought paper #3: **due Friday, 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. 3**
  - Lab report #2: **due Friday, Oct. 24**
  - Lab report #3: **due Friday, Nov. 14**

## Tutorial Assignments

- After each tutorial section, 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 section.
  - Tutorial #1: **due Tuesday, Sept. 16**
  - Tutorial #2: **due Tuesday, Oct. 07**
  - Tutorial #3: **due Friday, Oct. 28**

## 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	9% (3% each)
Lab Report 1	15%
Lab Report 2	18%
Lab Report 3	20%
Tutorial Assignments	18% (6% each)
Research Proposal Poster	20%

## Readings

There is no textbook. Readings will consist of articles (typically, review articles).

## Grading Scheme

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale:

### *Queen's Official Grade Conversion Scale*

<b>Grade</b>	<b>Numerical Course Average (Range)</b>
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59
D	53-56
D-	50-52
F	49 and below

## Academic Integrity

Academic integrity is constituted by the five core fundamental values of honesty, trust, fairness, respect and responsibility (see [www.academicintegrity.org](http://www.academicintegrity.org)). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. Adherence to the values expressed through academic integrity forms a foundation for the "freedom of inquiry and exchange of ideas" essential to the intellectual life of the University (see the Senate Report on Principles and Priorities

<http://www.queensu.ca/secretariat/policies/senateandtrustees/principlespriorities.html>).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see Academic Regulation 1 <http://www.queensu.ca/artsci/academic-calendars/regulations/academic-regulations/regulation-1>), on the Arts and Science website (see <http://www.queensu.ca/artsci/academics/undergraduate/academic-integrity>), and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery and falsification, and are antithetical to the development of an academic community at Queen's. Given the seriousness of these matters, actions which contravene the regulation on academic integrity carry sanctions that can range from a warning or the loss of grades on an assignment to the

failure of a course to a requirement to withdraw from the university.

## Disability Accommodations

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/hcds/ds/>

## Readings

### **Working Memory and Attention:**

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

Kiyonaga, A., & Egner, T. (2014). The working memory Stroop effect: When internal representations clash with external stimuli. *Psychological Science, 25*(8), 1619-1629.

### **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.

### **Object-Substitution Masking:**

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

<2<sup>nd</sup> article to be added later>

<b>Date</b>	<b>Topic</b>
Tues. Sept. 9	Introduction to Visual Cognition
Fri. Sept. 12	Programing / Data Management Tutorial
Tues. Sept. 16	Programing / Data Management Tutorial
Fri. Sept. 19	Intro to Working Memory and Attention
Tues. Sept. 23	Lab Day: Data Collection
Fri. Sept. 26	Lab Day: Data Analysis
Tues. Sept. 30	Lab Day: Report Writing
Fri. Oct. 03	Signal Detection Tutorial
Tues. Oct. 07	Signal Detection Tutorial
Fri. Oct. 10	Intro to Object-Based Attention
Tues. Oct. 14	Lab Day: Data Collection
Fri. Oct. 17	Lab Day: Data Analysis
Tues. Oct. 21	Lab Day: Report Writing
Fri. Oct. 24	Eye-Tracking Tutorial
Tues. Oct. 28	Eye-Tracking Tutorial
Fri. Oct. 31	Intro to Object-Substitution Masking
Tues. Nov. 04	Lab Day: Data Collection
Fri. Nov. 07	Lab Day: Data Analysis
Tues. Nov. 11	Lab Day: Report Writing
Fri. Nov. 14	Presentations (Group 1)
Tues. Nov. 18	Presentations (Group 2)
Fri. Nov. 21	Presentations (Group 3)
Tues. Nov. 25	Presentations (Group 4)
Fri. Nov. 28	Conclusion to Visual Cognition

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