# PSYC422: Advanced Topics in Attention
# Winter session, 2019
# Syllabus

Instructor: Daryl Wilson
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Office Hours: by appointment
Class Time: Monday 1:00-2:30pm and Wednesday 11:30-1:00pm
Class Location: Biosciences 2111

## What is Attention?

ñEveryone knows what attention is. It is the taking possession by the mind, in clear and vivid form, of one out of what seem several simultaneously possible objects or trains of thought. Focalization, concentration, of consciousness are of its essence. It implies withdrawal from some things in order to deal effectively with othersò (James, 1890)

## Why Study Attention?

Our perceptual systems can process an incredible amount of information. But do we actually want to experience all of the information arriving at our perceptual receptors? Attention functions to select the information that we want to perceive. In fact, many researchers suggest that without attention, we cannot perceive. Attention then, may be the process that underlies our conscious awareness of the world.

## Learning Outcomes

To develop an understanding of the classic and current issues within the field of attention.
To effectively evaluate and communicate research concepts within the field of attention.
To research in depth a question regarding one of the issues regarding attentional control.

## Course Format

The first week will provide an introduction to the history of attention research.
The next eight weeks will focus on a particular attentional topic.
Monday is Day 1 and Wednesday is Day 2 for each week.
Readings and weekly reflection papers must be done 24 hours prior to the Day 1 class.
The reflection papers will be used to spur discussion during the Day 1 class.
Presentations of articles related to each weekôs topic will be done during the Day 2 class.

## Workload

### Participation

Participation will be evaluated at the end of the term by both your peers and the professor.

### Weekly Reflection Papers

For each of eight weeks, you will be required to submit a reflection paper. You have a great deal of flexibility as to what you write about. The goal is to provide evidence that, one you did the readings, and two that you thought about the readings. Do not simply provide a summary of the readings. Rather any ideas, questions, or criticisms you had with the readings would be useful. The maximum length is 1 page double-spaced. These reflection papers will be discussed during the Day 1 class. They are due 24 hours prior to the Day 1 class. That is, they are due the day before at 1pm. Late reflection papers will not be accepted.

### Topic Presentation

You will be assigned one week in which you are to identify an article related to that weekôs topic and provide a 10 minute presentation during the Day 2 class of that week. Your presentation will summarize the rationale for the study, the method, and the key findings. You will also provide a one-page handout that again summarizes the rationale for the study, the method, and the key findings (include any relevant figures). It is due the day of your presentation. The one-page handout should be printed and distributed to each member of the class on the day of your presentation. . Late submissions will be penalized 10% per day.

### Research Proposal Report

On the last day of class, you will submit a research paper on a topic of current interest within the field of attention. This paper will include a review of past research relevant to your topic, and a proposal for future research. Late papers will be penalized 10% per day.

### Research Proposal Poster Presentation

The last three weeks will be used to present your research proposals (see Research Proposal Report) in a poster-style environment.

Each student will provide a 5 minute poster presentation describing their research proposal (followed by a 5 minute question period), and a one-page poster handout. Both the students and the instructor will evaluate your poster presentation.

## Evaluation

| | |
|---|---|
| Class Participation | 15% |
| Reflection Papers | 25% (8 papers) |
| Topic Presentation | 15% |
| Research Proposal Report | 30% |
| Research Proposal Poster Presentation | 15% |

## Readings

There is no textbook. Readings will consist of articles ð 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 Queenôs Official Grade Conversion Scale:

| Grade | Numerical Course Average (Range) |
|---|---|
| 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 six core fundamental values of honesty, trust, fairness, respect, responsibility and courage (see www.academicintegrity.org). These values are central to the building, nurturing and sustaining of an academic community in which all

develop

| Date | Topic | Readings |
|---|---|---|
| Week 1: Day 1 | Organizational Meeting | None |
| Week 1: Day 2 | History of Attention Research | Pashler (1988)<br>Tsotos et al. (2005) |
| Week 2: Day 1 | Attentional Capacity -- Discussion | Franconeri et al. (2013)<br>Lavie (2005) |
| Week 2: Day 2 | Attentional Capacity -- Presentations | |
| Week 3: Day 1 | Attention in Time ï Discussion | Klein (2000)<br>Klein & MacInnes (1999)<br>Shapiro et al. (1997) |
| Week 3: Day 2 | Attention in Time -- Presentations | |
| Week 4: Day 1 | Change/Inattentional Blindness -- Discussion | Simons & Levin (1997)<br>Chun & Marois (2002)<br>Simons (2000) |
| Week 4: Day 2 | Change/Inattentional Blindness -- Presentations | |
| Week 5: Day 1 | Object-Based Attention -- Discussion | Scholl (2001)<br>Moore et al. (1998)<br>Pratt & Sekuler (2001) |
| Week 5: Day 2 | Object-Based Attention -- Presentations | |
| Week 6: Day 1 | Attention and Eye Movements -- Discussion | Awh et al. (2006)<br>Theeuwes et al. (1998)<br>Hooge et al. (2005) |
| Week 6: Day 2 | Attention and Eye Movements -- Presentations | |
| Week 7: Day 1 | Multifocal Attention -- Discussions | Cavanagh & Alvarez (2005)<br>Fehd & Seiffert (2008) |
| Week 7: Day 2 | Multifocal Attention -- Presentations | |
| Week 8: Day 1 | Training of Attention -- Discussions | Green & Bavelier (2003)<br>Green & Bavelier (2006) |
| Week 8: Day 2 | Training of Attention -- Presentations | |
| Week 9: Day 1 | Attention and Memory -- Discussions | Kiyonaga & Egner (2014)<br>Awh & Jonides (2001)<br>Downing (2000) |
| Week 9: Day 2 | Attention and Memory -- Presentations | |

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|---|---|---|
| Week 10: Day 1 | Research Proposal Presentations | |
| Week 10: Day 2 | Research Proposal Presentations | |
| Week 11: Day 1 | Research Proposal Presentations | |
| Week 11: Day 2 | Research Proposal Presentations | |
| Week 12: Day 1 | Research Proposal Presentations | |
| Week 12: Day 2 | Research Proposal Presentations | |

## Readings

**Week 1: History of attention research**

Pashler, H. E. (1998). The psychology of attention. Cambridge, MA: The MIT Press. (just the introduction ï pp. 1-32)

Tsotsos, J. K., Itti, L., & Rees, G. (2005). A brief and selective history of attention. In L. Itti, G. Rees, and J. K. Tsotsos (Eds.). *Neurobiology of attention* (pp. xxiii-xxxii). San Diego, CA: Elsevier Academic Press.

**Week 2: Attentional capacity**

Franconeri, S. L., Alvarez, G. A., & Cavanagh, P. (2013). Flexible cognitive resources: competitive content maps for attention and memory. *Trends in Cognitive Sciences, 17(3),* 134-141.

Lavie, N. (2005). Distracted and confused?: Selective attention under load. *Trends in Cognitive Sciences, 9,* 75-82.

**Week 3: Attention in Time**

Klein, R. M. (2000). Inhibition of return. *Trends in Cognitive Sciences, 4,* 138-147.

Klein, R.M. & MacInnes, W.J. (1999). Inhibition of return is a foraging facilitator in visual search. *Psychological Science, 10,* 346-352.

Shapiro, K. L., Arnell, K. M., & Raymond, J. E. (1997). The attentional blink. *Trends in Cognitive Sciences, 1,* 291-296.

**Week 4: Change / Inattentional Blindness**

Simons, D. J., & Levin, D. T. (1997). Change blindness. *Trends in Cognitive Sciences, 1,* 261-267.

Chun, M. M., & Marois, R. (2002). The dark side of visual attention. *Current Opinion in Neurobiology, 12,* 184-189.

Simons, D. J. (2000). Attentional capture and inattentional blindness. *Trends in Cognitive Sciences, 4,* 147-155.

**Week 5: Object-Based Attention**

Scholl, B.J. (2001). Objects and attention: the state of the art. *Cognition, 80,* 1-46.