

# PSYC422 Syllabus

## General Course Information

**Course:** PSYC422  
**Course title:** Advanced Topics in Attention  
**Pre-requisites:** PSYC221  
**Semester and Year:** Winter 2026  
**Number of credits:** 3.0  
**Learning hours:** 120 hours total  
**Modality:** On campus  
**Classroom accessibility:** accessible

## Contact Information

**Instructor:** Daryl Wilson  
**Office:** Humphrey Hall 347  
**Email:** daryl.wilson@queensu.ca  
**Contact:** by email or appointment

## Course Description

Addresses topics in attentional control including limits in attentional control, cortical mechanisms of attention, spatial and temporal attention, interaction of attention and memory, and influence of videogame playing on attentional control.

## Course Learning Outcomes

On successful completion of this course, students will be able to:

1. Develop an understanding of classic and current issues within the field of attention.
2. Effectively evaluate and communicate research concepts within the field of attention.
3. 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.
- Tuesday is Day 1 and Friday is Day 2 for each week.
  - Day 1: Students will take turns presenting the core articles provided by the instructor. Each student will do one of these presentations over the term. All other students are expected to read the core articles provided that week.
  - Day 2: Students will take turns presenting articles related to that week's topic. Each student will do one of these presentations over the term.
- The last three weeks will consist of poster-style presentations of research proposals.

<b>Date</b>	<b>Topic</b>
Week 1: Day 1	Organizational Meeting
Week 1: Day 2	History of Attention Research
Week 2: Day 1	Attentional Capacity – Core Paper Presentations
Week 2: Day 2	Attentional Capacity – Related Paper Presentations
Week 3: Day 1	Attention in Time – Core Paper Presentations
Week 3: Day 2	Attention in Time – Related Paper Presentations
Week 4: Day 1	Change/Inattentional Blindness – Core Paper Presentations
Week 4: Day 2	Change/Inattentional Blindness – Related Paper Presentations
Week 5: Day 1	Object-Based Attention – Core Paper Presentations
Week 5: Day 2	Object-Based Attention – Related Paper Presentations
Week 6: Day 1	Attention and Eye Movements – Core Paper Presentations
Week 6: Day 2	Attention and Eye Movements – Related Paper Presentations
Week 7: Day 1	Multifocal Attention – Core Paper Presentations
Week 7: Day 2	Multifocal Attention – Related Paper Presentations
Week 8: Day 1	Training of Attention – Core Paper Presentations
Week 8: Day 2	Training of Attention – Related Paper Presentations
Week 9: Day 1	Attention and Memory – Core Paper Presentations
Week 9: Day 2	Attention and Memory – Related Paper Presentations
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

## Description of Learning Activities and Assessments

### Participation

Your presence and participation in class contributes to the knowledge and skills that you will develop throughout this course. You should complete the required readings, attend class regularly, and participate in class discussions.

### Day 1 Core Paper Presentation

You will be assigned one week in which you are to read one of the provided core articles and provide a 10 minute presentation during the Day 1 class of that week. Your presentation will summarize the key points of the article. All other students are expected to read each of the core articles.

### Day 2 Related Paper Presentation

You will be assigned one week in which you are to identify an article related to that week's 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.

### Research Proposal Report

Due 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.

### 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 make a virtual poster and provide a 8 minute poster presentation describing their research proposal (followed by a 5 minute question period).
- The content and execution of your presentation will be evaluated by the instructor and by your peers. Both the instructor's and peer evaluations will be counted toward your presentation grade.

## Evaluation

Assessment	Alignment with CLOs	Weighting
Class Participation	1 and 2	15%
Core Paper Presentation	1 and 2	20%
Related Paper Presentation	1 and 2	20%
Research Proposal Report	1, 2, and 3	30%
Research Proposal Poster Presentation	1, 2, and 3	15%

## Course Materials

There is no textbook and there are no material costs. Readings will consist of scientific 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

## **Assignment Submission Policy**

10% will be deducted from an assignment for each day it is late including weekends.

## **Generative Artificial Intelligence Tools**

Using generative AI writing tools such as ChatGPT in your submitted work is not permitted in this class. This type of use constitutes a departure from academic integrity. Original work, completed wholly by you, is expected to be submitted in this course.

## **Turnitin Statement**

This course makes use of Turnitin, a third-party application that helps maintain standards of excellence in academic integrity. Normally, students will be required to submit their course assignments through onQ to Turnitin. In doing so, students' work will be included as source documents in the Turnitin reference database, where they will be used solely for the purpose of detecting plagiarized text in this course. Data from submissions is also collected and analyzed by Turnitin for detecting Artificial Intelligence (AI)-generated text. These results are not reported to your instructor at this time but could be in the future.

Turnitin is a suite of tools that provide instructors with information about the authenticity of submitted work and facilitates the process of grading. The similarity report generated after an assignment file is submitted produces a similarity score for each assignment. A similarity score is the percentage of writing that is similar to content found on the internet or the Turnitin extensive database of content. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to determine the authenticity of work as a part of a larger process.

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## **Queen's Policy Statement on Academic Integrity**

Queen's University is dedicated to creating a scholarly community free to explore a range of ideas, to build and advance knowledge and to share the ideas and knowledge that emerge from a range of intellectual pursuits. Each core value of academic integrity, as defined in the [Senate Academic Integrity Policy](#), gives rise to and supports the next.

Honesty appears in presenting one's own academic work, whether in the context of an examination, written assignment, laboratory or seminar presentation. It is in researching one's own work for course assignments, acknowledging dependence on the ideas or words of another and in distinguishing one's own ideas and thoughts from other sources. It is also present in faithfully reporting laboratory results even when they do not conform to an original hypothesis. Further, honesty is present in truthfully communicating in written and/or oral exchanges with instructors, peers and other individuals (e.g. teaching assistants, proctors, university staff and/or university administrators).

Trust exists in an environment in which one's own ideas can be expressed without fear of ridicule or fear that someone else will take credit for them.

Fairness appears in the proper and full acknowledgement of the contributions of collaborators in group projects and in the full participation of partners in collaborative projects.

Respect, in a general sense, is part of an intellectual community that recognizes the participatory nature of the learning process and honours and respects a wide range of opinions and ideas. However, “respect” appears in a very particular sense when students attend class, pay attention, contribute to discussion and submit papers on time; instructors “show respect by taking students’ ideas seriously, by recognizing them as individuals, helping them develop their ideas, providing full and honest feedback on their work, and valuing their perspectives and their goals” (“[The Fundamental Values of Academic Integrity](#)”, 3rd Edition, p. 8).

Ultimately, responsibility is both personal and collective and engages students, administrators, faculty and staff in creating and maintaining a learning environment supported by and supporting academic integrity.

Courage differs from the preceding values by being more a quality or capacity of character – “the capacity to act in accordance with one’s values despite fear” (“The Fundamental Values of Academic Integrity”, 3rd edition, p. 10). Courage is displayed by students who make choices and integrous decisions that are followed by action, even in the face of peer pressure to cheat, copy another’s material, provide their own work to others to facilitate cheating, or otherwise represent themselves dishonestly. Students also display courage by acknowledging prior wrongdoing and taking proactive measures to rectify any associated negative impact.

All of these values are not merely abstract but are expressed in and reinforced by the University’s policies and practices.

## **Accommodations for Disabilities**

For all requests for academic accommodations, contact Tara Karasewich (Accommodations and Learning Management Systems Assistant) at [psyaccom@queensu.ca](mailto:psyaccom@queensu.ca).

Queen's University is committed to working with students with disabilities to remove barriers to their academic goals. Queen's Student Accessibility Services (QSAS), students with disabilities, instructors, and faculty staff work together to provide and implement academic accommodations designed to allow students with disabilities equitable access to all course material (including in-class as well as exams). If you are a student currently experiencing barriers to your academics due to disability related reasons, and you would like to understand whether academic accommodations could support the removal of those barriers, please visit the [QSAS website](#) to learn more about academic accommodations or start the registration process with QSAS by clicking *Access Ventus* button at [Ventus | Accessibility Services | Queen's \(queensu.ca\)](#)

VENTUS is an online portal that connects students, instructors, Queen's Student Accessibility Services, the Exam’s Office and other support services in the process to request, assess, and implement academic accommodations.

To learn more go to: <https://www.queensu.ca/ventus-support/students/visual-guide-ventus-students>

## **Academic Considerations for Students in Extenuating Circumstances**

If you require an extension for extenuating circumstances, you will need to submit a request for academic consideration to the Faculty of Arts and Science. Requests may be submitted using the following link: <https://www.queensu.ca/artsci/undergrad-students/academic-consideration-for-students>. Once your request is approved, then forward your approved request to Tara Karasewich (Accommodations and Learning Management Systems Assistant) at [psyaccom@queensu.ca](mailto:psyaccom@queensu.ca).

Academic Consideration is a process for the University community to provide a compassionate response to assist students experiencing unforeseen, short-term extenuating circumstances that may impact or impede a student's ability to complete their academics. This may include but is not limited to any extenuating circumstance (illness, bereavement, traumatic event, injury, family emergency, etc.) which is short-lived, begins within the term, and will not last longer than 12 weeks - see [Academic Consideration](https://www.queensu.ca/artsci/undergraduate/student-services/academic-consideration) webpage for details (<https://www.queensu.ca/artsci/undergraduate/student-services/academic-consideration>)

Each Faculty has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances. For more information, undergraduate students in the Faculty of Arts and Sciences should consult the Faculty's webpage on [Academic Consideration in Extenuating Circumstances](#) and submit a request via the [Academic Consideration Request Portal](#). Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

Students are encouraged to submit requests as soon as the need becomes apparent and to contact their instructor and/or course coordinator as soon as possible once academic consideration has been granted. Any delay in contact may limit the options available for academic consideration. While we encourage instructors to accommodate, each instructor has discretion in deciding whether or how to apply the Academic Consideration. For more information on the Academic Consideration process, what is and is not an extenuating circumstance, and to submit an Academic Consideration request, please see the Faculty of Arts and Science's [Academic Consideration website](#).

For more information, please see the [Senate Policy on Academic Consideration for Students in Extenuating Circumstances](#).

## Readings

### Week 1: History of attention research

Pashler, H. E. (1998). The psychology of attention. Cambridge, MA: The MIT Press. (just the introduction – 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.

Murphy, G., Groeger, J.A. & Greene, C.M. (2016). Twenty years of load theory—Where are we now, and where should we go next?. *Psychon Bull Rev* 23, 1316–1340.

### 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.

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

Pratt, J., & Sekuler, A.B. (2001). The effects of occlusion and past experience on the allocation of object-based attention. *Psychonomic Bulletin & Review*, 8, 721-727.

### Week 6: Attention and Eye Movements

Awh, E., Armstrong, K. M., & Moore, T. (2006). Visual and oculomotor selection: links, causes, and implications for spatial attention. *Trends in Cognitive Sciences*, 10, 124-130.

Theeuwes, J., Kramer, A.F., Hahn, S., & Irwin, D.E. (1998). Our eyes do not always go where we want them to go: Capture of the eyes by new objects. *Psychological Science*, 9, 379-385.

Hooge, I.T.C., Over, E.A.B., van Wezel, R.J.A., & Frens, M.A. (2005). Inhibition of return is not a foraging facilitator in saccadic search and free viewing, *Vision Research*, 45, 1901-1908.

Liversedge, S. P., & Findlay, J. M. (2000). Saccadic eye movements and cognition. *Trends in Cognitive Sciences*, 4(1), 6-14. [https://doi.org/10.1016/S1364-6613\(99\)01418-7](https://doi.org/10.1016/S1364-6613(99)01418-7)

### **Week 7: Multifocal Attention**

Cavanagh, P., & Alvarez, G. A. (2005). Tracking multiple targets with multifocal attention. *Trends in Cognitive Sciences*, 9, 349-354.

Fehd, H. M., & Seiffert, A. E. (2008). Eye movements during multiple object tracking: Where do participants look? *Cognition*, 108, 201-209.

Meyerhoff, H. S., Papenmeier, F., & Huff, M. (2017). Studying visual attention using the multiple object tracking paradigm: A tutorial review. *Attention, Perception, & Psychophysics*, 79(5), 1255-1274.

### **Week 8: Training of Attention**

Green, C. S., & Bavelier, D. (2003). Action video game modifies visual attention. *Nature*, 423, 534-537.

Green, C.S., & Bavelier, D. (2006). Effect of action video games on the spatial distribution of visuospatial attention. *Journal of Experimental Psychology: Human Perception and Performance*, 23, 1465-1478.

Tang, Y.-Y., Tang, R., Posner, M. I., & Gross, J. J. (2022). Effortless training of attention and self-control: Mechanisms and applications. *Trends in Cognitive Sciences*, 26, 567-577.

### **Week 9: Attention and Memory**

Kiyonaga, A., & Egner, T. (2014). The Working Memory Stroop Effect When Internal Representations Clash With External Stimuli. *Psychological Science*, 25(8), 1619-1629.

Awh, E., & Jonides, J. (2001). Overlapping mechanisms of attention and spatial working memory. *Trends in Cognitive Sciences*, 5, 119-126.

Fu, Y., Guan, C., Tam, J., O'Donnell, R. E., Shen, M., Wyble, B., & Chen, H. (2023). Attention with or without working memory: mnemonic reselection of attended information. *Trends in Cognitive Sciences*, 27(12), 1111-1122.

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

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