Visual Cognition in the Real World
PSYC423 - Fall 2023
Syllabus

General Course Information
PSYC 423 – Visual Cognition in the Real World
Winter 2023 (January 9, 2021 – April 6, 2021)
3 credits
Pre-requisites: PSYC 221/3.0 or PSYC 220/6.0 or COGS 200/6.0

Course Description
Visual cognition has been studied extensively in the lab, but it's not always clear how theoretical questions apply to the real world. In this course, we will examine both theoretical questions on perception, attention and memory as well as see how these apply to real world situations - examining x-rays, distracted driving and gaming.

Instructor Information
See onQ for drop-in hours

Important University Dates
Key dates (first day of class, tuition due date, last day to add/drop courses) are important to your academic success. Please find them at [Important Dates](#).

Equity, Diversity and Inclusivity Statement
Queen's is committed to counteracting discrimination in this institution and developing a climate of educational equity that recognizes and respects the equal dignity and worth of all who seek to participate in the life, work and mission of the University. Such a climate is created and maintained by developing a university-wide commitment to and understanding of educational equity, supported by policies, programs, curricula, practices and traditions that facilitate individuals - and equity-seeking groups- free, safe, and full participation. See [Queen's Educational Equity Policy](#) for further information.

Course Learning Objectives
By the end of this course students will be able to:
- Summarize current theories visual cognition with a special emphasis on scene processing, object recognition, visual attention, eye movements, visual memory and related applied fields
- Critically evaluate current, experimental literature in the field of visual cognition
- Develop writings skills
- Summarize and communicate research findings in one area of visual cognition
- Generate new research question in the field of visual cognition

Each week will focus on a particular topic. This class has a hybrid format. Think of it as having two meetings per week, one is in-person and the other takes place over two days and participation is asynchronous and online.

Here is the structure for each week:
- **Every week** you will have two readings focused on the topic for that week.
- Every **Monday** by 7pm, a reaction paper is due (see below for a description).
- Every **Tuesday** we will have an in-person class discussion, in which we discuss the readings and the topic for that week (see below on how these will proceed).
- Every **Thursday** by 5pm, one person from each group will be assigned as the presenter and will post a video of describing a new study on the topic for that week.
- Every **Friday** by 5pm, other members of a group will post a reaction video answering a question posed by the presenter.

Generally, you will be introduced to a new topic through the weekly readings and a Reaction paper. You will have the opportunity to share thoughts of your reaction paper during the class discussion. Then, each week you will participate as *either* as the presenter for your group or as a viewer for the presenter. As the presenter, you will lead discussion on an article of your choosing related to that week's topic through the Flipgrid Assignment.

Course Materials

There is no textbook. Articles will be assigned to be read for each class. You will be able to download the articles from the web/library – use your research skills! Any articles not available through the school library system or available on-line (through Google Scholar, the author's own website or other repositories such as Research Gate, bioRxiv or PsyArXiv). *Please email me if you are having trouble finding a specific article.*

Workload

Participation

Participation is always good in a seminar class! You will be graded for your participation in the course, both for the in-person discussions and for the online video assignments. All criticisms, comments, and questions about the readings and topics are encouraged. In addition, the reaction paper (described next) is designed to give you something to say and so everyone is going to have an opportunity to add to the discussion.

Reaction Paper

Each week you will be required to submit (via *onQ*) a Reaction Paper. It is not to be **no more than 1 page long** (more than that and you should edit). The reaction paper is meant to show that you have done the readings and that you have **thought about them**. I am interested in *your* ideas – not the authors'. A summary of the experiment is insufficient. Demonstrate your ability to synthesize information, critically examine or come up with your own ideas for

experiments (i.e., show creativity). I suggest that you begin by coming up with something you thought of while reading, a critique of the experiment, theoretical question about the experiment, or a possible next step for a future study. By the end of the semester, you will be able to demonstrate that you can go beyond the material as presented.

Reaction papers are submitted via onQ Assignment Folder – under each week's banner. Reaction papers are **due by 7pm each Monday** prior to Tuesday class discussion.

NB: *No Exceptions* will be made for late reaction papers. Your best 9 grades count from a possible 10, so the bottom grade is dropped. You can skip a week or submit all 10 to get your highest grades.

ChatGPT: Although Chatbot does an ok job of summarizing things, it is not so great at generating new ideas. If you just copy and paste what it spits out, you'll likely not do well. It basically sounds like a repetitive highschooler. However, you can use it to get things started (so you're not staring at a blank page). Also, be aware that this thing makes stuff up – do not trust any citations it spits out. Double check it all!
TLDR: Use ChaptGPT as a starting point, but be sure to go beyond the basic output it provides.

Academic Integrity: If you use it, please indicate at the bottom of the reaction paper that you have done so with the statement "ChatGPT 3.5 (or whichever model or version you used) was used in the creation of this assignment response."

> *Grading of Participation and Reaction Papers* is based on Young's I-C-E (Ideas, Concepts, and Extensions):
> - **3/3** Comments and responses reveal a capacity to analyze, synthesize, and evaluate material and give evidence of original thinking and an extensive knowledge base. They demonstrate a careful, concise, critical analysis with a clear and well-argued hypothesis based on the material. They exhibit evidence of learning that is willing to explore beyond the initial learning situation.
> - **2/3** Comments and responses reveal a good analysis and some critical reasoning. They demonstrate a reasonable understanding of relevant issues and familiarity with the material. They demonstrate a solid understanding of the relationship or connections among the basic concepts. They show a need to be more concise or precise in details and more careful in articulating arguments.
> - **1/3** Comments and responses show an acceptable treatment of the subject matter. They demonstrate an understanding of the basic facts, vocabulary, details, and elemental concepts and show an ability to deal with simple issues arising out of the material. The student needs to engage the subject matter more fully and formulate ideas more clearly.

Paper Presentation/Discussion
As a presenter, you will lead the discussion for your group. These will be conducted online via Flipgrid. For each presentation, you will choose a new article related to that week's topic and provide a ~**5 minute summary presentation via Flipgrid**. Flipgrid offers a platform to present a

topic video and then response videos. The class will be divided into groups, and you will comment on each other's presentations. To help with the summary, each presenter is to provide a **one-page handout** with key figures and list 2-3 questions that your group members can think about and include in their response. These handouts and a copy of your chosen article are to be uploaded on onQ (under Assignments for the Presentation number). They are due at the same time as the video is due. The uploads and the presenter's video must be posted by **Thursday at 5pm** and each group members' response must be posted by **Friday at 5pm**.

How it will work: Each week I will send an invitation link to all presenting members of each group. At 5pm on Thursday, the link will be posted to the class. These videos will be a max 5 min long.

- **Presentation Videos:** For presenters, summarize the main question, experiment task and the main pattern of results. Then present 2-3 questions for your fellow group members to respond to and comment on. This is a demonstration of your oral skills in summarizing the information with little visual demonstrations – like an elevator pitch. So, use the handout to have some visuals, but the presentation should be you talking (no power point or demo on a white board, etc.). **Label your video with your name and Group Letter (A-C).**

- **Response Videos:** If you are not presenting in a given week, you are expected to post a response video. You are assigned to respond to the presentation of your group member, but are also free to comment on others. For groups who have fewer group members and no presenter on a given week, you may choose one of the other group presenters to respond to for that week. Response videos must be at least 30 sec long and a max of 5 min long.

Class Discussion Guidelines
University is a place to share, question and challenge ideas. I want you to keep in mind that each person brings a different lived experience from which to draw upon. To help one another learn the most we can from this experience please consider the following guidelines.

1. Make a personal commitment to learn about, understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on the lives of other people and make sure your writing is respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers say before you respond. Think through and review your responses before you post or send them to others.
6. It's ok to disagree with ideas, but do not make personal attacks.
7. Be open to being challenged or confronted on your ideas and to challenging others with the intent of facilitating growth. Do not demean or embarrass others.

If You're Sick or Having a Rough Week…
Reaction Paper assignments, participation in class discussions and presentations have been designed with flexibility for academic consideration for all students. This means that "Short term Requests for Academic Consideration" (submitted through the Faculty of Arts and Science portal without documentation) are not needed and long-term requests will be handled on a case-by-case basis if needed. Please send me an email (monica.castelhano@queensu.ca) asap and we will work something out that works for you and your group.

Research Proposal
There is no exam in this course.   Instead, you will be writing a brief research proposal.
On **Wednesday Dec 6th at 11:59pm,** you will be required to submit a research paper (10 pages max) on a topic of current interest within the field of scene perception/scene processing. The final paper will include a review of past research relevant to your topic, and a proposal for future research (i.e., a new experiment). Late papers will be penalized 10% per day and receive a grade of 0 after 5 days. More information will follow (submit under Assignments on onQ).

To help you get a head start on this assignment, you will choose your topic and hand-in a **one paragraph summary** (1/2 page long max) describing your idea for the final paper on **Friday March 16th at 11:59pm.** This half-page summary will be part of your final research proposal grade (5%; submit under Assignments on onQ). Each student will receive feedback.

Universal Accommodations…
Both these assignments (proposal idea and proposal research paper) *will have a three-day grace period. That is, your assignments are due on the due date posted, but will be accepted, without penalty, up to 72 hours afterwards. After the grace period, the late penalties will apply as described above.*

Evaluation

Class Participation	15%
Reaction Papers	15%*
Presentations	25%
Research Proposal	45%

*Best 9 out of 10 reaction papers

Grading Method

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

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

Queen's students, faculty, administrators and staff all have responsibilities for upholding the fundamental values of academic integrity; 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 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/senate/report-principles-and-priorities).

Students are responsible for familiarizing themselves with the regulations concerning academic integrity and for ensuring that their assignments and their behaviour 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 https://www.queensu.ca/artsci/students-at-queens/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.

Course Timeline

The course is roughly designed around the processing timeline, with early processing focused on initial processing leading to highly complex processes. In addition, every other week we delve into an applied area that stems from or is related to the theoretical discussion of the previous week. The whole semester will build on the previous weeks and discussions will definitely loop back to earlier discussions with a new perspective.

Week	Day	Date	Topic	Readings & Assignments
1	Tuesday	05-Sep		**Organizational meeting and Introduction**
	Online	08-Sep		**Introductory Flipgrid Assignment Due Thursday at 5pm**
2	Tuesday	12-Sep	**Initial Perception of Scenes**	Intraub, H. & Richardson, M. (1989). Wide-angle memories of close-up scenes. Journal of Experimental Psychology: Learning, Memory, and Cognition, 15, 179-187. Bainbridge, W. A., & Baker, C. I. (2020). Boundaries extend and contract in scene memory depending on image properties. Current Biology, 30(3), 537-543. **Reaction Paper #1 Due**
	Online	15-Sep	**Flipgrid Assignment (Group Member 1): Presentations due Thursday at 5pm; Responses due Friday at 5pm**	
3	Tuesday	19-Sep	**Memory for Scenes**	Hall EH, Bainbridge WA, Baker CI. Highly similar and competing visual scenes lead to diminished object but not spatial detail in memory drawings. Memory. 2022 Mar;30(3):279-292. Kaunitz, L. N., Rowe, E. G., & Tsuchiya, N. (2016). Large capacity of conscious access for incidental memories in natural scenes. Psychological science, 27(9), 1266-1277. **Reaction Paper #2 Due**

	Online	22-Sep	**Flipgrid Assignment (Group Member 2):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**	
4	Tuesday	26-Sep	**Photos and False Memories**	Miriam S. Johnson, Svein Magnussen, Anders Foyn Asmyhr, Johanna Jensen Helgeland, Marie Pilegaard Jonassen, … & Line Flatebø Widmark (2023) Doctored photographs create false memories of spectacular childhood events. a replication of Wade et al. (2002) with a Scandinavian twist, Memory, 31:7, 1011-1018.

Nash, R. A. (2018). Changing beliefs about past public events with believable and unbelievable doctored photographs. Memory, 26(4), 439-450.

Reaction Paper#3 Due |
| | Online | 29-Sep | **Flipgrid Assignment (Group Member 3):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm** | |
| 5 | Tuesday | 03-Oct | **On-Line Scene Representations** How much do you really see as you look around? | Rensink, R. A., O'Regan, J. K., & Clark, J. J. (1997). To see or not to see: The need for attention to perceive changes in scenes. Psychological science, 8(5), 368-373.

Barzy, M., Morgan, R., Cook, R., & Gray, K. L. (2023). Are social interactions preferentially attended in real-world scenes? Evidence from change blindness. Quarterly Journal of Experimental Psychology, 17470218231161044..

Reaction Paper #4 Due |
	Online	06-Oct	**Flipgrid Assignment (Group Member 1):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**	
6	Tuesday	10-Oct	*****Fall Break*****	
	Online	13-Oct		

7	Tuesday	17-Oct	**At the Movies:** How well do people remember details at the scene of a movie? Does it impact how the story is interpreted?	Smith T J, Lamont P, Henderson J M. (2013). Change blindness in a dynamic scene due to endogenous override of exogenous attentional cues. Perception 42(8) 884-886. Huff, M., Jacobsen, C., & Papenmeier, F. (2023). Edit blindness is not related to immersion and presence in Hollywood movies. Psychology of Aesthetics, Creativity, and the Arts. **Reaction Paper #5 Due**
	Online	20-Oct	**Flipgrid Assignment (Group Member 2):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**	
8	Tuesday	24-Oct	**Eye Movements in Real-world Scenes** How do we know where to look first?	Henderson, J. M. (2017). Gaze control as prediction. *Trends in Cognitive Sciences, 21*(1), 15-23. Helbing, J., Draschkow, D., & L.-H. Võ, M. (2022). Auxiliary scene-context information provided by anchor objects guides attention and locomotion in natural search behavior. Psychological Science, 33(9), 1463-1476. **Reaction Paper #6 Due**
	Online	27-Oct	**Flipgrid Assignment (Group Member 3):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**	

9	Tuesday	31-Oct	**Marketing and Ads**	Kaspar, K., Weber, S. L., & Wilbers, A. K. (2019). Personally relevant online advertisements: Effects of demographic targeting on visual attention and brand evaluation. PloS one, 14(2), e0212419. Beuckels, E., Hudders, L., Cauberghe, V., Bombeke, K., Durnez, W., & Morton, J. (2021). To fit in or to stand out? An eye-tracking study investigating online banner effectiveness in a media multitasking context. Journal of Advertising, 50(4), 461-478. **Reaction Paper #7 Due**
	Online	02-Nov	**Flipgrid Assignment (Group Member 1):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**		
10	Tuesday	07-Nov	**Searching Through Scenes** How do you quickly and accurately find what you're searching for?	Hayes, T. R., & Henderson, J. M. (2019). Scene semantics involuntarily guide attention during visual search. *Psychonomic bulletin & review, 26*(5), 1683-1689. Võ, M. L. H., Boettcher, S. E., & Draschkow, D. (2019). Reading scenes: How scene grammar guides attention and aids perception in real-world environments. *Current opinion in psychology,* 29, 205-210. **Reaction Paper #8 Due**
	Online	09-Nov	**Flipgrid Assignment (Group Member 2):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**		
11	Tuesday	14-Nov	***No Class***		
	Online	16-Nov	***No Flipgrid Assignment*** **Research Proposal Idea Due** **(Friday Nov 17 at 11:59pm)**		

12	Tuesday	21-Nov	**Navigation and Spatial Perception in Scenes** How does movement around a scene affect how you represent the scene?	Epstein, R. A., Patai, E. Z., Julian, J. B., & Spiers, H. J. (2017). The cognitive map in humans: spatial navigation and beyond. Nature Neuroscience, 20(11), 1504. Hill, P. F., McAvan, A. S., Garren, J. D., Grilli, M. D., Barnes, C. A., & Ekstrom, A. D. (2023). Age differences in spatial memory are mitigated during naturalistic navigation. bioRxiv, 2023-01. **Reaction Paper #9 Due**
	Online	23-Nov	**Flipgrid Assignment (Group Member 3):** **Presentations due Thursday at 5pm; Responses due Friday at 5pm**	
13	Tuesday	28-Nov	**Driving** What do you pay attention to when you drive? What happens in more complex environments? What about distractions?	He, J., Chaparro, A., Nguyen, B., Burge, R. J., Crandall, J., Chaparro, B., ... & Cao, S. (2014). Texting while driving: Is speech-based text entry less risky than handheld text entry?. *Accident Analysis & Prevention, 72*, 287-295. Kaul, R., & Jipp, M. (2023). Influence of cognitive processes on driver decision-making in dilemma zone. Transportation research interdisciplinary perspectives, 19, 100805. **Reaction Paper #10 Due**
	Online	30-Nov	***No Flipgrid Assignment *** Final Paper Due (Wednesday, Dec 6) at 11:59pm	