

PSYC 325

Cognitive Neuroscience Winter 2023.

Professor Jonathan Smallwood

Winter Semester: Jan 9th 2023 – April 10th 2023.

Number of credits: 3

Course Format: Blended

Location: Tuesdays 1.00-2.30 RM1 Law Building; 1.5 hours of online Material

Instructor Information

Name: Jonathan Smallwood

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Office hours: Monday 10-12

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About me: I am a scientist interested in understanding the organization of human cognition. In my research I use the methods of cognitive neuroscience and psychology to ask questions about how the mind generates different patterns of thought. In my spare time I make and record music which you can listen to on Spotify [here](#). Follow me on **Twitter (@the_mindwanders)** and on **Mastodon (@The_Mind_wanders)** to keep up to date with my research and music.

Teaching Assistant Information

Ruien Wang - Email ruien.wang@queensu.ca

Scott McQuain – Email 18slm10@queensu.ca

1.0 Land Acknowledgment

I will begin this syllabus by acknowledging that Queen's is situated on traditional Anishinaabe and Haudenosaunee territory. We are grateful to be able to live, learn and teach on these lands. By acknowledging this traditional territory, we recognize its history and its significance for the Indigenous Peoples who lived and continue to live, upon it.

2.0 Diversity and Inclusion

In this class, it is my goal to ensure that students from all backgrounds have a great learning experience, and that everyone feels valued, respected, and welcome. The class will represent a diversity of individuals, identities, beliefs, backgrounds and experiences. The diversity of experiences that the students bring to this class will be viewed as a resource, strength and benefit. **With this in mind, students are encouraged to speak up and participate during class**

meetings by sharing their opinions and their questions. In these interactions please show respect for other members of the class.

Welcome

Welcome to Psyc325 –Cognitive Neuroscience. My name is Jonathan Smallwood and I am the professor leading this course. This course uses lectures and video material, that along with the text book, will give you a glimpse into the exciting but complex world of contemporary cognitive neuroscience.

To take full advantage of this class, it is important that you plan your work load. Key dates (first day of class, tuition due date, last day to add/drop courses) are important to this goal as these help you plan your studies properly. Please find them at [Important Dates](#).

Learning Outcomes

Upon completion of this course you will be able to

- Describe the goals and objectives of contemporary cognitive neuroscience and evaluate how effectively different studies address them.
- Describe the different methods available to cognitive neuroscience and evaluate their strengths and weaknesses.
- Articulate contemporary view points on how neural systems contribute to specific features of higher order thoughts (cognitive control, memory and social cognition)
- Critically evaluate the conclusions that can be drawn by cognitive neuroscientists based on the limits of today's methods.

Course description

In this class I hope to help you be able to understand how studying the brain can help understand how our thoughts and feelings work, and how these processes afford flexible and adaptive behaviour. Don't worry if this seems a complex problem – this course is designed so that if you follow the course material you will gain a general understanding of how contemporary researchers think about this important subject of human cognition.

To help achieve this goal the class is divided into three broad sections.

Section 1 Conceptual Questions (Weeks 1-5) will help you think about the conceptual issues posed by researchers who want to understand how the brain supports cognition. It will cover the underlying assumptions that underpin many contemporary approaches used in cognitive neuroscience today and consider the different methods which scientists use to probe the links between brain and cognition.

Section 2 Interacting with the Environment (Weeks 6-8) will help you think about how scientists understand how the brain helps us interact with our immediate environment (e.g. visual processing, motor control and attention).

Section 3 Complex Behaviour (Week 9-12) will cover the brain basis behind more complicated actions, which depend on the organisation of behaviour over longer periods of time. These rely on aspects of cognition including language, executive control and social cognition.

The class is designed to balance different types of teaching. Each week we will have one in-person session where there will be a lecture. Capitalizing on the **blended** nature of this course, each week you will also watch videos online from scientists who work in this area. This online video content is an opportunity for to hear from people who work in the field today in their own words. You will be expected to keep to date with the course by reading the textbook, as well as keeping up to date with the lectures and video materials.

I will also hold office hours on Mondays between 10 and 12 each week for one-to-one meetings with students. **If you would like a meeting with me please to try email me at least three or four days before the date when you would like to meet.**

The lectures are designed to accompany the textbook and will contextualise the information in contemporary questions facing cognitive neuroscientists. **This means that the lectures will not cover all of the material in the text book.** This feature of the course is designed to allow the lectures to help you (i) see the links between different aspects of the field and (ii) to understand the broad questions that researchers grapple with when trying to understand the brain basis of cognition. To facilitate this goal, most lectures will be accompanied by one or two short talks by experts in different areas. These talks will provide perspectives on cutting edge cognitive neuroscience findings by researcher's in their own words and as part of your ongoing course work you will be asked to provide short answers on the issues raised by these talks (see below).

The class will use an online discussion board where you can share any questions about the course that you may have. Before posting a question, please check this out to see if any similar issues have been raised by other students.

Evaluation

This course contains a variety of assessments, described in more detail below:

Low-stakes Reflection Posts	10%
Video Reaction Papers (4)	30%
In Class Exams (3)	60%

Assessment of learning outcomes

The date of each piece of course work is due will be indicated on the schedule found in onQ. Exams will consist of multiple choice questions.

Low Stakes Reflection Posts

Each week you will be given the chance to make a **reflection post** – a short comment on something that you found interesting in that week’s class. These should be a minimum of three sentences and should focus on one study, theory or idea that you found interesting or that made you think differently about cognition or the brain. These should relate to information covered in class, in the videos or textbook. These will not be graded and you will receive points for each appropriate post that you make (up to a maximum of 1 point per week, and 10 points for the course as a whole).

Reflection Posts are due at 5pm on Friday of each week (starting on Week 1) and are to be submitted via OnQ. **As for all aspects of course work, there will be an automatic 3-day grace period on these submissions (see below).**

Video Reaction Papers

Throughout the semester, there will also be 4 Video Reaction Papers, and these will contribute to your final mark (30 points in total). You will be required to submit (via onQ) a Video Reaction Paper concerned with the expert talks covered in class. Typically, these will be 500 words double spaced. Details on these submissions can be found below.

Students must submit 3 Video Reaction Papers to meet this requirement, allowing students to miss one submission without penalty. One paper grade will be dropped at the end of the semester.

This an essential requirement and we will work with students with disabilities to support them in fulfilling it **There will be no make-up Video Reaction Papers so if you anticipating missing more than 1 submission for the Video Reaction Papers, please contact the Teaching Team as soon as possible.**

The expert talks you will watch online all cover contemporary questions that are connected to one of the topics covered by the lectures in class. **You can choose any of the topics covered by videos for your Video Reaction Papers, but each weeks’ talks can only figure in one of your submissions (that is, you cannot use the same content in multiple Video Reaction Papers).** The reaction papers are meant to show me that you have understood the talks and that you have thought about them. I am interested in your ideas. **A summary or description of the talks is not enough.** You are encouraged to write about an issue that you thought of while watching several of the talks:

- a critique of coverage – what things fit with our reading of the concepts, what concepts were too simple
- consideration of how the main concept being discussed in class relates to real-life
- talk about the implications of something discussed in the video for another scientific source
- suggest a new experiment to explore a specific question raised in the video

Video Reaction Papers are due at 5pm on Friday of the assigned week and are to be submitted via onQ. There will be an automatic three-day extension for these pieces of work (see below).

In Class Exams

There will be three in class exams for this course, each worth 20% of the course mark that will occur in class. These will take the form of multiple choice questions and short answers. Each exam will cover the information covered in one of the three sections of the class (see above). This an essential requirement and we will work with students with disabilities to support them in fulfilling it. Please be sure to connect with QSAS so that you are able to have accommodations applied to your exam sessions via Ventus.

Academic Consideration for Course Work

There may be a time when you are unable to submit a written assignment for personal reasons. To build in some flexibility for all students, each written assignment will have a 3-day grace period. **That is, your written assignments (Video Reaction Papers and Reflection posts) are due on the due date in OnQ but will be accepted, without penalty, up to 72 hours afterwards.** Assignment dropboxes will close 72 hours after the published deadline and assignments not submitted by that time will receive a '0'. This universal design feature precludes your need to use the Faculty's Request for Academic Consideration without documentation portal. Should you have a documented request for more than 72 hours, please do use the portal (details below).

Course Materials

Text book: Cognitive Neuroscience: The biology of the mind by M.S, Gazzangia, R.B. Ivry and G.R. Mangun, Norton Fifth Edition.

Course Timeline

Below is a provisional schedule for this course. **Please note that this may be subject to change.**

Week	#	Section	In person	Online	Assessments
9 th Jan	1	Conceptual	Lecture 1 (Chapter 1)	Damasio Chalmers Carl Schnoover	
16 th Jan	2	Conceptual	Lecture 2 (Chapter 1 & 2)	Merzenich Insel	

				Jocelyn Bloch	
23rd Jan	3	Conceptual	Lecture 3 (Chapter 2)	Markham Barrett Tan Le	Video Reaction Paper 1
30 st Jan	4	Conceptual	Lecture 4 (Chapter 3)	Allan Jones Kanwisher Boyden	
6 th Feb	5	Conceptual	Lecture 5 (Chapters 4-6)	Bolte Herculano-Houzel Ramachandran	
13 th Feb	6	Interacting with the environment	Class Exam #1.	Graziano Seth Usmani	Video Reaction Paper 2
20 th Feb	Reading Week				
27 th Feb	7	Interacting with the environment	Lecture 6 (Chapters 6-8)	LaChaux Jha Mehdi Ordikhani- Seyedlar	
6 th Mar	8	Interacting with the environment	Lecture 7 (Chapters 6 - 8)	Wolpert Lozano Dagmar Sternad	
13 th Mar	9	Complex behaviour	Class Exam #2	Keane Burgess Lisa Feldman Barret	Video Reaction paper 3
20 st Mar	10	Complex behaviour	Lecture 8 (Chapters 9 -12)	Doebel Bavalier Jessica McCabe	
27 th Mar	11	Complex behaviour	Lecture 9 (Chapters 9 -12)	Saxe Boriditsky Sarah Jayne Blakemore	
3 rd April	12	Complex behaviour	Class Exam #3	Dennet	Video Reaction paper 4

Suggested Time Commitment

In this course, you should expect to invest on average 8 to 10 hours per week. This will include the time you spend in class or online, studying course material, and completing weekly homework or preparing for your larger assignments and exams. You are encouraged to use a term at a glance and a weekly study schedule (visit SASS) that distributes the 8-10 hours per week and avoid 'cramming'. This way you will be more likely to complete the course successfully and remember what you learned longer.

Timing of Final Examinations

The exam dates for each Term are listed on the Faculty of Arts and Science webpage under Important Dates. Student exam schedules for the Fall Term are posted via SOLUS immediately prior to the Thanksgiving holiday; they are posted on the Friday before Reading Week for the Winter Term and for the summer term, they are individually noted on the Arts and Science Online syllabi. **Students should delay finalizing any travel plans until after the examination schedule has been posted. Exams will not be moved or deferred to accommodate employment, travel/holiday plans or flight reservations.**

Grading Scheme and 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

Questions about the Course and Contacting the Teaching Team

Where possible please use the course email to contact the teaching team:
[which email would you like students to use?]

Course Announcements

All course announcements will be made on the on-Q site.

Accommodations for Disabilities

Queen's University is committed to achieving full accessibility for people 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 their academic activities. The Senate Policy for Accommodations for Students with Disabilities was approved at Senate in November 2016. If you are a student with a disability and think you may need academic accommodations, you are strongly encouraged to contact the **Queen's Student Accessibility Services (QSAS)** and register as early as possible. For more information, including important deadlines, please visit the QSAS website.

Academic Consideration for Students in Extenuating Circumstances

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:

- Short-term physical or mental health issues (e.g., stomach flu, pneumonia, COVID diagnosis, vaccination, etc.)
- Responses to traumatic events (e.g., Death of a loved one, divorce, sexual assault, social injustice, etc.)
- Requirements by law or public health authorities (e.g., court date, isolation due to COVID exposure, etc.)

Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances. For more information, please see the Senate Policy on Academic Consideration for Students in Extenuating Circumstances.

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. Arts and Science undergraduate students can find the Faculty of Arts and Science protocol and the portal where a request can be submitted. Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

If you need to request academic consideration for this course, you will be required to provide the name and email address of the instructor/coordinator. Please use the following contact information:

Tara Karasewich – Email: psyc.accom@queensu.ca

Students are encouraged to submit requests as soon as the need becomes apparent and to contact their Professors/Course Coordinators as soon as possible once Consideration has been granted. Any delay in contact may limit the Consideration options available.

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 our website.

Academic Integrity

Copyright of Course Materials

Unless otherwise stated, the material on the course website is copyrighted and is for the sole use of students registered in Psyc325. The material on the website may be downloaded for a registered student's personal use but shall not be distributed or disseminated to anyone other than students registered in this course.

Privacy Statement for Instructors Who Use Third-Party Software in their Course

This course makes use of TED.com for the videos associated with the class. Be aware that by logging into the site, you will be leaving onQ, and accessing Ted.com's website and their online content. Your independent use of that site, *beyond what is required for the course (for example, purchasing the company's products)*, is subject to TED's terms of use and privacy policy.

You are encouraged to review these documents using the link(s) below before using the site.

You are encouraged to review the applicable privacy statements before using the site.

<https://www.ted.com/about/our-organization/our-policies-terms/privacy-policy>

Notice of Recording

Synchronous (live) classes may be delivered in this course through a video conferencing platform supported by the University [MS Teams or Zoom etc]. The University has taken steps to configure these platforms in a secure manner. Classes will be recorded with video and audio (and in some cases transcription) and will be made available to students in the course for the duration of the term. The recordings may capture your name, image or voice through the video and audio recordings. By attending these live classes, you are consenting to the collection of this information for the purposes of administering the class and associated coursework. If you are concerned about the collection of your name and other personal information in the class, please contact the course instructor to identify possible alternatives.

To learn more about how your personal information is collected, used and disclosed by Queen's University, please see the Notice of Collection, Use and Disclosure of Personal Information.

Technology Requirements

Calculator Policy

As noted in Academic Regulation 9.2, "Calculators acceptable for use during quizzes, tests and examinations are intended to support the basic calculating functions required by most Arts and Science courses. For this purpose, the use of the **Casio 991 series calculator** is permitted and is the only approved calculator for Arts and Science students."

Turnitin Statement

This course uses 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 to detect plagiarism.

Turnitin is a suite of tools that provide instructors with information about the authenticity of submitted work and facilitates the process of grading. Turnitin compares submitted files against its extensive database of content, and produces a similarity report and a similarity score for each assignment. A similarity score is the percentage of a document that is similar to content held within the database. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to select the authenticity of work as a part of a larger process.

Please read Turnitin's Privacy Pledge, Privacy Policy, and Terms of Service, which govern users' relationship with Turnitin. Also, please note that Turnitin uses cookies and other tracking technologies; however, in its service contract with Queen's, Turnitin has agreed that neither Turnitin nor its third-party partners will use data collected through cookies or other tracking technologies for marketing or advertising purposes. For further information about how you can exercise control over cookies, see Turnitin's Privacy Policy

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