

2020-2021

COGNITIVE SCIENCE RESOURCE GUIDE

STUDENT ASSOCIATION OF COGNITIVE SCIENCE

a compilation of course reviews and advice

 cogsci_mcgill  SACSMcGill  McGill_SACS

 <http://cogsci-mcgill.com/>

TABLE OF CONTENTS

Land Acknowledgment	1
Introduction	2
Disclaimer	2
Acknowledgments & Authors	2
Annotated Checklist	3
Course Reviews	5
Required Courses	6
Core Complementary Courses	9
Logic	10
Computer Science	13
Statistics	16
Linguistics	19
Philosophy	22
Neuroscience	25
Psychology	27
Complementary Courses	29
Computer Science	30
Linguistics	33
Philosophy	37
Psychology	38
Neuroscience	45
Psychology / Neuroscience	48
McGill Survival Tips	54

LAND ACKNOWLEDGMENT

SACS acknowledges that McGill University is on the traditional territory of the Indigenous People, Kanien'keha:ka (Ga-niyen-ge-haa-ga). The Kanien'keha:ka are the keepers of the Eastern Door of the Haudenosaunee Confederacy. This island known as Montreal is known as Tio'tia:ke (Gio-Jaw-Gé) in the language of the Kanien'kehá:ka, and has historically served as a meeting place for other Indigenous nations.

It is not enough to just acknowledge the keepers of this land and McGill's status as a settler-colonial institution. Silence and inaction will only contribute to erasing the history, the culture, and the realities of Indigenous people. As such, it is important that individuals educate themselves on Indigenous matters and that they apply that knowledge to support Indigenous communities. SACS should actively resist (neo)-colonialism in the many forms it takes, and in the diversity of forms that resistance can take.

Considering that our readers may be scattered across the globe, we encourage you to find out whose land you are occupying at <https://native-land.ca/>.

INTRODUCTION

Welcome to the Cognitive Science Resource Guide! While Cognitive Science is one of the most diverse degrees, it can also be difficult to navigate. For this reason, SACS has created this compilation of resources: an annotated course requirements checklist, course reviews, and general McGill life hacks.

Enjoy!

DISCLAIMER

This guide was written by Cognitive Science students at McGill during Winter 2021. While the writers and contributors attempted to provide accurate information, we do not guarantee the guide's accuracy. Additionally, these reviews are inherently subjective. Therefore, the information in this guide should be assessed at your own risk and SACS will not hold any responsibility for missing or wrong information.

Moreover, this guide should not replace appointments with your advisor. You can find information about advising here:

<https://www.mcgill.ca/science/undergraduate/advice/sousa>

ACKNOWLEDGMENTS

We would like to thank past SACS members, as this guide was based on the Cognitive Science Reviews 2018-2019. We would also like to thank present SACS members for their contributions, as well as Melissa Li. Lastly, we would like to thank Ryan Bouma, the Cognitive Science program advisor, for his Cognitive Science Checklist that has been annotated.

AUTHORS

Lucy Core
Daria Lisus
Emma Nephtali
Akhila Rao

LAYOUT

Emma Nephtali

ANNOTATED CHECKLIST

Ryan Bouma's Cognitive Science Checklist is a very helpful tool for planning your degree. However, it can get a bit confusing. We have annotated the checklist to explain how it works and hopefully clear up any questions.

CORE COMPLEMENTARY CLASSES

Required Course (3 credits)

NSCI 201 Introduction to Neuroscience 2

Logic Course (3 credits)

COMP 230 Logic and Computability

MATH 318 Mathematical Logic

PHIL 210 Introduction to Deductive Logic 1

Computer Science Course (3 credits)

COMP 202 Foundations of Programming

COMP 204 Computer Programming for Life Sciences

COMP 250 Introduction to Computer Science

Statistics Course (3 credits)

PSYC 204 Intro to Psychological Statistics

MATH 203 Principles of Statistics 1

MATH 323 Probability

Linguistics Course (3 credits)

LING 201 Introduction to Linguistics

LING 210 Introduction to Speech Science

LING 260 Meaning in Language

Philosophy Course (3 credits)

PHIL 200 Introduction to Philosophy 1

PHIL 201 Introduction to Philosophy 2

PHIL 221 Intro to the History and Philosophy of Science 2

Neuroscience Course (3 credits)

NSCI 200 Introduction to Neuroscience 1

PSYC 211 Introductory Behavioural Neuroscience

Psychology Course (3 credits)

PSYC 212 Perception

PSYC 213 Cognition

- Pick one class from each section

COMPLEMENTARY CLASSES

Complementary Courses (30 credits, of which 15 credits must be 400+ level)

18 credits in one area: _____

12 credits from any area: _____

- 18 credits (6 classes from one stream*); this is your **major concentration**
- 12 credits (4 classes from any stream**)
- 15 credits (5 classes of the above 10 classes must be at the 400 or 500 level)

*a stream is one of the 5 areas of Cognitive Science: computer science, linguistics, philosophy, psychology, and neuroscience

**this can be from any combination of streams, including your major concentration

ANNOTATED CHECKLIST

Ryan Bouma's Cognitive Science Checklist is a very helpful tool for planning your degree. However, it can get a bit confusing. We have annotated the checklist to explain how it works and hopefully clear up any questions.

MINOR REQUIREMENTS

Minor (18 credits)

- 18 credits (6 classes) in an approved B.A. & Sc. minor*
- Students with an Arts major concentration often choose a Science minor, and vice versa

*see the approved list on the McGill Bachelor of Arts and Science website >> Overview of Programs Offered >> Minors or Minor Concentrations

DEGREE REQUIREMENTS

<input type="checkbox"/> BASC201	B.A. & Sc. Degree Requirements	
	<input type="checkbox"/> 21 credits in Arts	<input type="checkbox"/> 21 credits in Science
Freshman Requirements		
<input type="checkbox"/> 3 Freshman Science courses:	<input type="checkbox"/> 2 Freshman Math courses:	<input type="checkbox"/> 3 Freshman Arts courses (in 2 categories)
_____	_____	H / SS / L _____
_____	_____	H / SS / L _____
_____		H / SS / L _____

- It is required to take BASC 201 and complete 21 credits in Arts and 21 credits in Science.*
- If you are in U0, you must complete the freshman requirements.

*classes taken in the Cognitive Science program DO count towards these requirements

COURSE REVIEWS

REQUIRED COURSES

BASC 201

Arts & Science Integrative Topics

B.A.&Sc. Degree Requirement

COURSE OVERVIEW

This is a lecture-based course that uses the angle of controversy to examine the social and political organization, limits, and impacts of science and technology. It introduces various academic and critical approaches to the social scientific and humanistic study of science and technology. Topics include ignorance, uncertainty, the spread of misinformation, truth and lies, objectivity, paradigms, blind spots and illusions, the HIV/AIDS epidemic, diversifying science, disability, eugenics, bias in the health sciences, intellectual property, surveillance, technology and labor, racism and bias in technology, whistleblowing, and hacking.

THOUGHTS FROM COG SCI STUDENTS

- This course is not directly related to cognitive science but is required for all students in the Faculty of Arts and Science.
- Half of the course challenges you to think critically about how science is conducted (e.g. objectivity, the spread of misinformation, diversifying science), and the other half of the course can be summed up as “things in the world that you should care about” (e.g. HIV/AIDS epidemic, disability and eugenics, racism and bias in science and technology)
- This course has a lot of readings, videos, and podcasts. The readings can be long but are often written for a more general audience so they are much easier to digest than a scientific journal article, for example.
- There are also many small assignments in this course so it is a lot of work. However, because there are so many assignments, it means that if you don't do well on one it isn't going to tank your entire course grade.
- The professor also provides opportunities to receive extra credit.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

COMS 230 – Communication and Democracy

COMS 362 – Communication and the Environment

COMS 320 – Media and Empire
(note that these are not part of the program)

NSCI 201

Introduction to Neuroscience 2

Cognitive Science Program Requirement

COURSE OVERVIEW

An introduction to how the nervous system acquires and integrates information and uses it to produce behaviour.

THOUGHTS FROM COG SCI STUDENTS

- This is a very content-heavy course, so make sure you stay up to date with the material and understand the concepts presented in class.
- Draw diagrams of the pathways so you can visually see where information is integrated/segregated.
- Think about how the different aspects of the sensory systems are analogous to one another:
 - Ex 1: receptive fields in the somatosensory system vs. the auditory system vs. the visual system.
 - Ex 2: retinotopic organization in the visual system vs. tonotopic organization in the auditory system.
- Other study tips:
 - Ask yourself what would happen to the flow of information processing if a certain part of the pathway was no longer functioning.
 - Talk through the material out loud and pretend you're teaching it to someone else.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

NSCI 200 or **PSYC 211**

WHAT TO TAKE NEXT

Almost any class in the neuroscience stream of cognitive science! This class lays the foundation for virtually every upper-level neuroscience class.

CORE COMPLEMENTARY COURSES

COMP 230

Logic and Computability

core complementary course: logic

COURSE OVERVIEW

Propositional Logic, predicate calculus, proof systems, computability Turing machines, Church-Turing thesis, unsolvable problems, completeness, incompleteness, Tarski semantics, uses and misuses of Gödel's theorem.

THOUGHTS FROM COG SCI STUDENTS

- The course is very fast-paced and the content is challenging.
- There is a lot of vocabulary.
 - ***TIP*** Make flashcards and frequently quiz yourself!
- Dr. Schlimm is generally a well-liked professor. He is engaging and encourages participation.
- The quizzes are well-structured and the grading is lenient.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

CEGEP/High school level
Math

WHAT TO TAKE NEXT

PHIL 310 – Intermediate Logic
COMP 330 – Theory of
Computation

MATH 318

Mathematical Logic

core complementary course: logic

COURSE OVERVIEW

Propositional logic: truth-tables, formal proof systems, completeness and compactness theorems, Boolean algebras; first-order logic: formal proofs, Gödel's completeness theorem; axiomatic theories; set theory; Cantor's theorem, axiom of choice and Zorn's lemma, Peano arithmetic; Gödel's incompleteness theorem.

THOUGHTS FROM COG SCI STUDENTS

- This is not a very popular course that cognitive science students take, and is more geared towards people interested in the computer science stream.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

MATH 235 or **MATH 240** or
MATH 242

WHAT TO TAKE NEXT

N/A

PHIL 210

Introduction to Deductive Logic

core complementary course: logic

COURSE OVERVIEW

An introduction to propositional and predicate logic; formalization of arguments, truth tables, systems of deduction, elementary metaresults, and related topics.

THOUGHTS FROM COG SCI STUDENTS

- The large majority of the class is about solving formal proofs using symbols and rules. It's hard to wrap your head around the material at first because everything is quite abstract.
- The material builds on itself so make sure you stay up to date with the course and reach out to the TAs or the professor for help if needed.
- Go to the TA sessions! The TAs will often review practice problems that are similar to the ones seen on the assignments.
- This is kind of like a math course where you need to do practice problems to succeed. You can't succeed by just passively reading your lecture notes.
- Use the textbook! Do extra practice problems from the book.
- Online vs in-person
 - The online version of the course appears to be harder than the in-person version. The online version contains weekly assignments and timed quizzes.
 - In comparison, the in-person version includes 2 assignments, a take-home midterm, and a closed-book final. You have several weeks to work on the 2 assignments and the take-home midterm, and there are quite a few extra credit opportunities.

COURSE STYLE

Lectures + Conference

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

PHIL 310 – Intermediate Logic

COMP 202

Foundations of Programming

core complementary course: computer science

COURSE OVERVIEW

Introduction to computer programming in a high level language (python). You will learn how to use variables, expressions, primitive types, methods, conditionals, loops. Introduction to algorithms, data structures (arrays, strings), modular software design, libraries, file input/output, debugging, exception handling.

THOUGHTS FROM COG SCI STUDENTS

- Start your assignments early! If you don't understand a concept, get help ASAP, as the content builds on itself rapidly.
 - You can get help by going to office hours with your Professors or TAs, going to tutorials, or by visiting the CSUS Helpdesk.
- Practice, practice, practice!
 - When studying, keep track of the variables at each line so that you know what is happening during each part of the line of code. This is especially important for answering short answer questions.
- The in-person version of the course contained assignments, the midterm, and a final exam. The exams were a combination of multiple choice, short answer and long answer.
 - ***TIPS for Long Answers***
 - All long answers were written by hand. Practice writing your code out!
 - Try your best to use appropriate syntax. However, graders are more lenient so don't fret if you forget a semicolon!
 - You can also write "skeletons" of your code in "regular English" - you can get partial credit for this as it shows the graders that you understand the logic behind the solution.
- The online version of the course contains presentations, assignments, and quizzes.

COURSE STYLE

In-Person: Lectures + Tutorial (optional)

Online: Lectures + Presentations

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

CEGEP/High school level math course; cannot be taken after COMP 250

WHAT TO TAKE NEXT

COMP 206 – Introduction to Software Science

COMP 250 – Introduction to Computer Science

COMP 204

Computer Programming for Life Sciences

core complementary course: computer science

COURSE OVERVIEW

Computer programming in a high level language (python): variables, expressions, types, functions, conditionals, loops, objects and classes. Introduction to algorithms, modular software design, libraries, file input/output, debugging. Emphasis on applications in the life sciences.

THOUGHTS FROM COG SCI STUDENTS

- This course emphasizes real-world applications of programming in health care settings.
- The course moves very quickly, so it is important that you learn the basics well in order to have a solid foundation.
- While the class is in an online format, grading structure includes assignments, quizzes, a midterm and final.
- ***TIP*** Some students found that taking this class over the summer is beneficial as it gives them a chance to digest and apply the information!

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

BIOL 112 and a CEGEP level mathematics course.

(Cannot be taken for credit with or after COMP 250, COMP 206, COMP 208, or COMP 364)

WHAT TO TAKE NEXT

COMP 206 – Introduction to Software Science

COMP 250 – Introduction to Computer Science

COMP 250

Introduction to Computer Science

core complementary course: computer science

COURSE OVERVIEW

Mathematical tools (binary numbers, induction, recurrence relations, asymptotic complexity, establishing correctness of programs), Data structures (arrays, stacks, queues, linked lists, trees, binary trees, binary search trees, heaps, hash tables), Recursive and non-recursive algorithms (searching and sorting, tree and graph traversal). Abstract data types, inheritance, selected topics.

THOUGHTS FROM COG SCI STUDENTS

- This course uses Java, is content-heavy and covers a broad range of topics.
- Be sure to start assignments early as they can be very laborious and time-intensive.
- Try to do the practice questions for each course module as exam study prep.
- Grading structure: assignments, (optional) quizzes and a final exam (if you do not take the quizzes, your final will be worth more).
- Students with limited programming experience should take COMP 202 or equivalent before this class. Familiarity with a high level programming language is required.

COURSE STYLE

Online: Pre-recorded Lectures + Conference

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

CEGEP level Math

WHAT TO TAKE NEXT

COMP 251 – Algorithms & Data Structures

COMP 206 – Introduction to Software Science

COMP 350 – Numerical Computing

PSYC 204

Introduction to Psychological Statistics

core complementary course: statistics

COURSE OVERVIEW

The statistical analysis of research data; frequency distributions; graphic representation; measures of central tendency and variability; elementary sampling theory and tests of significance.

THOUGHTS FROM COG SCI STUDENTS

- This course is relatively easy as long as you pay attention, watch the lectures, and review the slides.
- It provides an introduction to basic statistical concepts including measures of central tendency, correlation, and hypothesis testing.
- On assignments, you will be asked to do the calculations by hand. This can be very tedious, so it is important to go slowly and check your work for simple mistakes. The assignments are the most challenging part of this class, but they are very manageable if you spend some time on them.
- The textbook is not mandatory, since a lot of the information and concepts being taught are pretty straightforward and widely accessible to learn about online.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

PSYC 305 – Statistics for Experimental Design

MATH 203

Principles of Statistics 1

core complementary course: statistics

COURSE OVERVIEW

Examples of statistical data and the use of graphical means to summarize the data. Basic distributions arising in the natural and behavioural sciences. The logical meaning of a test of significance and a confidence interval. Tests of significance and confidence intervals in the one and two sample setting (means, variances and proportions).

THOUGHTS FROM COG SCI STUDENTS

- This class covers more abstract concepts than PSYC 204, and the math required is more advanced.
- If possible, take the class with Dr. David Wolfson – he is an excellent professor with very straightforward assignments and exams that have similar questions to those shown in class.
- The best way to study for the final exam is to do as many practice problems as you can and to study the reasoning behind the formulas.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

MATH 323 – Probability
PSYC 305 – Statistics for Experimental Design

MATH 323

Probability

core complementary course: statistics

COURSE OVERVIEW

Sample space, events, conditional probability, independence of events, Bayes' Theorem. Basic combinatorial probability, random variables, discrete and continuous univariate and multivariate distributions. Independence of random variables. Inequalities, weak law of large numbers, central limit theorem.

THOUGHTS FROM COG SCI STUDENTS

- This class has more advanced math than PSYC 204 or MATH 203, since it involves knowledge of calculus.
- The material can be overwhelming, so make sure to stay up to date with the content.
- Understanding the proofs is very important. Don't be afraid to get help if you need it.
- If possible, take this class with Dr. David Wolfson – he is an excellent professor with very straightforward assignments and exams that are similar to the problems shown in class.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

MATH 141

WHAT TO TAKE NEXT

MATH 324 – Statistics

LING 201

Introduction to Linguistics

core complementary course: linguistics

COURSE OVERVIEW

General introduction to linguistics, the scientific study of human language. Covers the core theoretical subfields of linguistics: phonetics, phonology, morphology, syntax, and semantics. Also provides background on other subfields including sociolinguistics, pragmatics, historical linguistics, linguistic variation, and language acquisition.

THOUGHTS FROM COG SCI STUDENTS

- This course allows you to explore different fields of study within linguistics, which can help you determine which areas you might want to focus on. The knowledge from this class is also helpful in other, upper-year non-linguistics courses.
- The course content focuses on English, but also brings in examples from other languages.
- You can do assignments in small groups (just make sure you're in the same conference as the people you want to work with).
- Trees are fun! (When you get the hang of them)

COURSE STYLE

Lectures + Conference

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

LING 371 – Syntax

LING 330 – Phonetics

LING 210

Introduction to Speech Science

core complementary course: linguistics

COURSE OVERVIEW

The course covers key concepts of speech science, including phonetics (acoustics, speech perception and production), fundamentals in the study of speech processing, speech development, and speech disorders, and introduces some basic methodologies of the field.

THOUGHTS FROM COG SCI STUDENTS

- This course is interesting and explores how we produce sounds.
- This is a good survey course for someone without a background in linguistics.
- The professor is super nice and engaging!

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

LING 330 – Phonetics

LING 260

Meaning in Language

core complementary course: linguistics

COURSE OVERVIEW

A hands-on introduction to the strategies that natural languages use to convey meaning. Requiring no previous background in linguistics, the course surveys fundamental properties of word and sentence meaning and their interdependence with context. It provides an overview of the grammatical mechanisms that languages employ to construct the literal meanings of sentences from word meanings, explores how meanings are anchored to real life situations, and analyzes how meanings are routinely enriched in context by language users to convey more than what is literally expressed.

THOUGHTS FROM COG SCI STUDENTS

- This is an interesting course that goes very in depth into specific topics in linguistics.
- It is a pretty straightforward linguistics course that focuses on the meaning of language and how it changes depending on the context it is used in.
- It uses many visual representations — Venn diagrams and tables — to show the semantic meaning of sentences and phrase.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

LING 360 — Introduction to Semantics

PHIL 200

Introduction to Philosophy 1

core complementary course: philosophy

COURSE OVERVIEW

A course treating some of the central problems of philosophy: the mind-body problem, freedom, skepticism and certainty, fate, time, and the existence of God.

THOUGHTS FROM COG SCI STUDENTS

- Professor Emily Carson is really great – with her, you learn the fundamentals of philosophy, as well as how to structure a philosophical argument.
- This class provides the foundation for any upper-year philosophy class.
- The grading scheme in previous years has included small graded weekly conference assignments, 2 larger writing assignments (including a 1000 word paper), and a final exam.

COURSE STYLE

Online: Recorded Lectures + Conference

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

Almost any philosophy class!

For example:

PHIL 242 – Introduction to Feminist Theory

PHIL 306 – Philosophy of Mind

PHIL 201

Introduction to Philosophy 2

core complementary course: philosophy

COURSE OVERVIEW

An introduction to some of the major problems of philosophy. This course does not duplicate PHIL 200.

THOUGHTS FROM COG SCI STUDENTS

- This is a very interesting and thought-provoking class.
- You learn about a wide variety of topics from different philosophical eras.
- Overall, it is not too challenging if you are willing to put in the work.
- Though the readings are not required, they are very helpful during conferences.
- Lecture material is usually not tested and only presented to help deepen your understanding of the material.

COURSE STYLE

Lectures + Conference

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

Any higher level philosophy class!

PHIL 221

Introduction to History and Philosophy of Science core complementary course: philosophy

COURSE OVERVIEW

A survey of the development of modern science since the Eighteenth Century.

THOUGHTS FROM COG SCI STUDENTS

- If possible, take this class with Dr. Ian Gold. His version of the course focuses specifically on cognitive science. It is essentially an “introduction to cog sci” course. Dr. Gold is a very clear and engaging professor.
- Dr. Eran Tal is also an excellent professor for this course, though he teaches with less of a focus on cognitive science. The pace of his lectures is very reasonable and he encourages class participation, despite the class being lecture-format. In his version of the course, there are 3 papers that require you to think critically about philosophers’ arguments. For these papers, you are required to come up with an objection to the philosophers’ argument and consider how they would reply to your objection.
 - ***TIP*** Seek guidance and feedback from the TAs while you are working on the papers.
- Assignments will vary depending on which professor is teaching the class, but this is generally a favourite among cognitive science students.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

PHIL 341 – Philosophy of Science

PSYC 433 – Cognitive Science

NSCI 200

Introduction to Neuroscience

core complementary course: neuroscience

COURSE OVERVIEW

An introduction to how nerve cells generate action potentials, communicate with one another at synapses, develop synaptic connections, early brain development, and the construction of specific neural circuits.

THOUGHTS FROM COG SCI STUDENTS

- This course is dense and content-heavy, but very interesting, as it covers the biological and physiological basis of neuroscience.
- The assessments require large amounts of memorization and application. Start studying the content early!
 - ***TIP*** In order to draw connections between course content and aid with memorization, form a small study group and talk through the content.
 - You can find people to study with by posting to the myCourses Discussion board for the class or by reaching out to people in Facebook groups!
- The textbook readings are not emphasized on assessments, but they are testable.
 - ***TIP*** Split up the readings amongst members of a study group and share your summary notes!
- In previous years, the grading structure included 2 midterms and a final exam that consisted of multiple choice and short answer questions.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1

PREREQUISITES

BIOL 112, CHEM 110, CHEM 120, PHYS 101 or PHYS 131, and PHYS 102 or PHYS 142. Pre-/Co-requisite **BIOL 200, CHEM 212** or permission of instructor; cannot be taken after PHGY 209

WHAT TO TAKE NEXT

NSCI 201 – Introduction to Neuroscience 2

PSYC 311 – Human Cognition and the Brain

NEUR 310 – Cellular Neurobiology

PSYC 211

Introductory Behavioural Neuroscience

core complementary course: neuroscience

COURSE OVERVIEW

An introduction to contemporary research on the relationship between brain and behaviour. Topics include learning, memory and cognition, brain damage and neuroplasticity, emotion and motivation, and drug addiction and brain reward circuits. Much of the evidence will be drawn from the experimental literature on research with animals.

THOUGHTS FROM COG SCI STUDENTS

- This course is very content heavy.
 - ***TIP*** Make flashcards and review the material frequently.
- Dr. Britt is a straightforward and clear lecturer.
- The class provides a solid foundational background in the main areas of neuroscientific research. Many upper-level courses build on the concepts covered in this class.
- Having a strong background in basic biological concepts will be very helpful.
- In order to do well in this course, you must be willing to dedicate lots of time to it. There is so much to learn!
- The exams are multiple-choice and very fair.
- The online version of the course includes pre-recorded lectures that range from 1-1.5 hours. It usually takes twice as long to watch the lectures because you have to pause every few minutes to take good notes.
- The textbook presents information in a new way and can help you make connections between topics. It's not necessary to read, but a great resource.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

BIOL 111, BIOL 112, or BIOL 115 and **PSYC 100** or equivalent

WHAT TO TAKE NEXT

PSYC 318 —Behavioural Neuroscience 2

PSYC 302 — Psychology of Pain

PSYC 342 — Hormones and Behavior

PSYC 514 — Neurobiology of Memory

PSYC 212

Perception

core complementary course: psychology

COURSE OVERVIEW

Perception is the organization of sensory input into a representation of the environment. Topics include: survey of sensory coding mechanisms (visual, auditory, tactile, olfactory, gustatory), object recognition, spatial localization, perceptual constancies and higher level influences.

THOUGHTS FROM COG SCI STUDENTS

- The material sometimes seems challenging at first and takes a while to wrap your head around.
- Exams are multiple-choice and the questions are very straightforward.
- The readings are very helpful and do a good job clarifying the topics explained in lecture.
- The course content overlaps with quite a few other introductory psychology/neuroscience courses.
- It is a great introductory course that briefly covers many aspects of psychology and neuroscience that will be learned in more depth in future courses.
- Opportunities for extra credit are available.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

PSYC 213 – Cognition

PSYC 352 – Cognitive Psychology Lab

PSYC 526 – Advances in Visual Perception

PSYC 213

Cognition

core complementary course: psychology

COURSE OVERVIEW

Where do thoughts come from? What is the nature of thought, and how does it arise in the mind and the brain? Cognition is the study of human information processing, and we will explore topics such as memory, attention, categorization, decision making, intelligence, philosophy of mind, and the mind-as-computer metaphor.

THOUGHTS FROM COG SCI STUDENTS

- Dr. Signy Sheldon is an excellent professor. She goes at a good pace and is very clear and organized.
- This course teaches you the basic concepts of cognition and is a great foundation for upper-year psychology and neuroscience courses.
- The exams are multiple-choice and require a deeper level of understanding compared to exams in PSYC 211 and PSYC 212.
- To do well in the course, it is recommended to do the textbook readings.
 - Be sure to focus on the studies not mentioned in class and the vocabulary words at the end of each chapter!

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

One previous course in Psychology

WHAT TO TAKE NEXT

PSYC 352 – Cognitive Psychology Lab

PSYC 310 – Intelligence

PSYC 433 – Cognitive Science

PSYC 470 – Memory and the Brain

COMPLEMENTARY COURSES

COMP 206

Introduction to Software Systems

COURSE OVERVIEW

Comprehensive overview of programming in C, use of system calls and libraries, debugging and testing of code; use of developmental tools like make, version control systems.

THOUGHTS FROM COG SCI STUDENTS

- This course is a survey of several different softwares and languages. You learn how to program in Bash and C, work in the UNIX environment, and debug and test code during software development. You may also learn the basics of Git and GitHub.
- In-person classes had a grading structure of seven assignments, two tests, and a final exam. You can replace your test grades with your final exam grades.
- ***TIP*** Apply the concepts taught in class when working on the assignments, and attend office hours if you have questions.
- Take advantage of the mini labs.
- A lot of the concepts from this class are really useful for future work as a software engineer or in future classes, so this is a really great course to take if you're interested in exploring software development later on!

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1

PREREQUISITES

COMP 202 or **COMP 250**

WHAT TO TAKE NEXT

COMP 251 – Algorithms & Data Structures

COMP 302 – Programming Languages & Paradigms

MATH 240 – Discrete Structures

COMP 251

Algorithms & Data Structures

COURSE OVERVIEW

Introduction to algorithm design and analysis. Graph algorithms, greedy algorithms, data structures, dynamic programming, maximum flows.

THOUGHTS FROM COG SCI STUDENTS

- This course is challenging but also very interesting.
- The material is taught in a way where you are finding the optimal way to solve riddles.
 - ***TIP*** It is fun and beneficial to try and solve the tedious and optimized problems before being given the solutions
- Sometimes it is difficult to see how the course content can be applied to solving the tests.
- In the past, this course only had 2 midterms and a final; the exams were difficult, but the professor curved everyone's grades.
- To put oneself in a position to succeed in this course, it is recommended to take COMP 250 and MATH 240 in the fall semester, and then to take COMP 251 in the Winter semester (many concepts from COMP 250 are applied in COMP 251).

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

COMP 250

MATH 235 or **MATH 240** (as a co-requisite)

WHAT TO TAKE NEXT

COMP 303 – Software Design

COMP 302

Programming Languages and Paradigms

COURSE OVERVIEW

Programming language design issues and programming paradigms. Binding and scoping, parameter passing, lambda abstraction, data abstraction, type checking. Functional and logic programming.

THOUGHTS FROM COG SCI STUDENTS

- This class teaches you how compilers work and how new programming languages are built using OCaml (a language with a few built-in tools).
- It is very insightful; you learn about methods (i.e., filter and map) which are used across programming languages.
- This class had around 10 assignments (all short OCaml exercises), a few quizzes, a midterm and a final.
 - The evaluation scheme was nice because no one grade was weighted too heavily.
 - The assignments were automatically graded which was nice because students could know whether their solution was correct/complete and therefore choose how much more effort they wanted to put into the assignment before the deadline.
- The material can be challenging and requires practice and dedication but it is also interesting.
- While not mandatory, it is recommended to take COMP 206 before this class.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

COMP 250 and **MATH 240**
or **MATH 235** or **MATH 318** or
COMP 230 or **PHIL 210**

WHAT TO TAKE NEXT

Any upper-level computer science course! Material from this course will help with almost all of them.

LING 330

Phonetics

COURSE OVERVIEW

Transcription, identification, and production of speech sounds. Introduction to the acoustic properties of speech sounds, acoustic analysis of speech, and auditory phonetics.

THOUGHTS FROM COG SCI STUDENTS

- This class is an absolute must for anyone thinking of going into linguistics. It might not be the most interesting subject to everyone, but it provides a very thorough explanation of the acoustic properties of speech and teaches you how to use Praat, an important software used in linguistics research.
- If you do the textbook readings, the quizzes will be manageable.
- The homework assignments are also very reasonable.
- The labs are time-consuming; start them as early as possible and get help during the conferences.

COURSE STYLE

Lectures + Conference

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

LING 201

WHAT TO TAKE NEXT

LING 210 – Introduction to Speech Science

LING 450 – Laboratory Linguistics),

LING 530 – Acoustic Phonetics

LING 331

Phonology 1

COURSE OVERVIEW

Introduction to phonological theory and analysis.

THOUGHTS FROM COG SCI STUDENTS

- This class covers a wide variety of theories in the field of phonology
- The class focuses on the systems of sounds within and between languages.
- The assignments are difficult. Start them as early as possible, do them in groups, and go to office hours. Professor Goad genuinely wants her students to do well in her class, and she will help you if you explain what difficulties you are having.
- As the semester progresses, the material builds up, so try not to fall behind, otherwise it will be very hard to catch up again. If you find yourself misunderstanding a concept, get help from the professor or a TA as soon as you can.

COURSE STYLE

Lectures + Conference

RECOMMENDED YEAR

U2

PREREQUISITES

LING 330

WHAT TO TAKE NEXT

LING 440 – Morphology

LING 451 – Acquisition of Phonology

LING 531 – Phonology 2

LING 360

Introduction to Semantics

COURSE OVERVIEW

Introduction to the rudiments of semantics, focusing on those aspects of meaning that are invariant across contexts and the ways in which the meaning of a complex expression is determined by the meanings of its constituents.

THOUGHTS FROM COG SCI STUDENTS

- If you enjoyed PHIL 210, this class is for you! If you had difficulties with PHIL 210, it is not recommended that you take this class.
- This class is notoriously one of the most difficult in the linguistics department, but it is extremely rewarding once you understand it.
- Take the time to really understand the concepts mentioned in class, and make sure you can extrapolate those conclusions to other kinds of problems that were not explicitly solved in class. Be ready to work hard.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U2

PREREQUISITES

LING 201 and PHIL 210

WHAT TO TAKE NEXT

LING 460 – Semantics 2

LING 565 – Pragmatics

LING 371

Syntax 1

COURSE OVERVIEW

Introduction to the study of generative syntax of natural languages, emphasizing basic concepts and formalism: phrase structure rules, transformations, and conditions on rules.

THOUGHTS FROM COG SCI STUDENTS

- If you think of syntactic trees as puzzles and you enjoy solving puzzles, this class is for you!
- A lot of the material accumulates over the semester, so try not to fall behind. Take advantage of conferences to ask as many questions as you can, and go to office hours when you find yourself starting to get lost.
- The midterm and final are very similar to the assignments, so the best way to study for the exams is to redo the assignments. If you understand how to do them, you are in good shape.
- ***TIP*** do your assignments with a friend! It always helps to talk out the problems conceptually before you start drawing trees or writing answers.

COURSE STYLE

Lectures + Conference

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

LING 201

WHAT TO TAKE NEXT

LING 410 — Structure of a Specific Language 1

LING 571 — Syntax 2

PHIL 306

Philosophy of Mind

COURSE OVERVIEW

A survey of major positions of the mind-body problem, focusing on such questions as: Do we have minds and bodies? Can minds affect bodies? Is mind identical to body? If so, in what sense "identical"? Can physical bodies be conscious?

THOUGHTS FROM COG SCI STUDENTS

- Note that the following comments are from students who took this class with Dr. Gold.
- This course covers different philosophical schools of thought pertaining to cognitive science and is very discussion-based. It will try and answer questions such as "Is the brain separate from the mind?", "What is the mind?" and "What is thinking?" You will also learn about concepts including physicalism and epiphenomenalism.
- ***TIP*** The Nagel readings are important!
- The grading scheme for this course includes journal entries, an essay and a final exam.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

N/A

There are no official prerequisites for this course, but it may be helpful to have taken an introductory philosophy course.

WHAT TO TAKE NEXT

PSYC 538 – Categorization, Consciousness & Communication

PSYC 433 – Cognitive Science

PSYC 100

Introduction to Psychology

COURSE OVERVIEW

Introduction to the scientific study of mind and behavior, including basic concepts and methods in psychology while also highlighting the relevance of psychology to everyday life; attachment, aggression, depression, parenting and personality change.

THOUGHTS FROM COG SCI STUDENTS

- This course is relatively easy overall.
- It is not the most interesting, but gives a lot of background knowledge on basic psychology concepts which will be brought up in later classes.
- Midterms and exams are all multiple choice, but can be content-heavy.
- There is an option to get extra credit from completing textbook modules and readings (although not necessary).
- Many Cognitive Science students opt to skip over this class.
- Note: credits earned for this class do not contribute to the 30 credits required in complementary classes.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U0 or **U1**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

Any PSYC course, since PSYC 100 builds the basis for most PSYC courses at McGill.

PSYC 304

Child Development

COURSE OVERVIEW

Psychology of children, covering critical issues, theories, biological underpinnings, experimental methods, and findings in perceptual, cognitive, language, emotional, and social development.

THOUGHTS FROM COG SCI STUDENTS

- This course teaches you all about perceptual, motor and cognitive development, and you will learn a broad overview of experimental paradigms used in child psychology.
- Dr. Dirks is a very enthusiastic lecturer, and explains the concepts thoroughly.
- When taught in-person, the assessments included 2 midterms, 1 writing assignment and a final exam.
 - The exams are all multiple choice, and content from readings are tested.
 - ***TIP*** Make a study group to split up the readings! This is very helpful as you quickly read through reading summaries and reference them as you study.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

Two of **PSYC 211**, **PSYC 212**, **PSYC 213** and **PSYC 215**, or permission from instructor
(Many students take this course without taking PSYC 215)

WHAT TO TAKE NEXT

PSYC 412 – Developmental Psychopathology

PSYC 413 – Cognitive Development

PSYC 414 – Social Development

PSYC 305

Statistics for Experimental Design

COURSE OVERVIEW

An introduction to the design and analysis of experiments, including analysis of variance, planned and post hoc tests and a comparison of anova to correlational analysis.

THOUGHTS FROM COG SCI STUDENTS

- This course provides an overview of the major statistical tests used in scientific research.
- This course is crucial to have under your belt if you want to do research.
- Even if research is not your cup of tea, however, this class is super helpful in general because it teaches you about statistical analyses, which are a major component of every primary research article there is. Having a statistics background will allow you to gain a deeper understanding of the results of any scientific journal article you read.
- The class itself is not too bad. The content presented in lectures can feel very abstract and it takes time to wrap your head around.
- The TAs host labs where they walk you through how to conduct each statistical analysis using software. Pay close attention to the content presented, as understanding it is necessary for doing the assignments.
- Make connections between the material presented in lecture and in the lab.

COURSE STYLE

Lectures + Optional Lab

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

PSYC 204 or equivalent

WHAT TO TAKE NEXT

PSYC 531 – Structural Equation Models

PSYC 536 – Correlational Techniques

PSYC 310

Intelligence

COURSE OVERVIEW

Introduction to the evolution and assessment of intelligence. Emphasizes measurement and correlates of the human intellect and the role of environment and heredity in social and race differences in intellectual and adaptive functioning. Evolution of intelligence in vertebrates and other intelligences including practical and emotional intelligence will be covered.

THOUGHTS FROM COG SCI STUDENTS

- Most students find the first half of this course very dry. The topics covered include the history of IQ, IQ testing, and theories of intelligence.
- The second half of the course is usually found to be more interesting, as the role of the environment, biological factors, and social factors are considered in relation to IQ.
- Professor Gagnon is an average lecturer
- This course is fairly easy to do well in if you do the readings, as they make up a fair amount of the material tested on the exams.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

PSYC 204 or equivalent, **one of PSYC 211, PSYC 212, PSYC 213, PSYC 215, or one of BIOL 111, BIOL 112, BIOL 115**; or permission of instructor

WHAT TO TAKE NEXT

PSYC 433 – Cognitive Science

PSYC 513

Human Decision-Making

COURSE OVERVIEW

Interdisciplinary study of decision-making, covering contemporary approaches to understanding how humans compute values and make choices.

Measurement of and techniques for assessing variables such as risk and uncertainty, utilities and preferences, reinforcement learning, heuristics and biases, and self-control. Emphasis on quantitative models of decision-making.

THOUGHTS FROM COG SCI STUDENTS

- The focus of the course is to promote critical thinking skills, rather than memorizing content. There are no exams in this course.
- The class is very reading-heavy. Start the readings early and be prepared to talk about them!
- There are group presentations, where students present 2-3 papers related to the week's topic and lead a class discussion.
- The first half of the course can be a bit dry, as many theoretical frameworks are discussed.
- Many students enjoy the second half of the course more, as it focuses on decision-making in relation to other fields.
 - Topics include emotions and choice, racial biases in decision-making, consumer decision-making, fairness and the law, and decision-making in psychiatric disorders.
- There is a final paper where you design an empirical set-up and write the theoretical results for a topic of your choice.
 - If you are having difficulty coming up with a topic it is helpful to look at the "Future Directions" sections of other decision-making papers.

COURSE STYLE

Seminar

RECOMMENDED YEAR

U3

PREREQUISITES

PSYC 212 or PSYC 213 and U3 standing; or permission of the instructor

WHAT TO TAKE NEXT

N/A

PSYC 529

Music Cognition

COURSE OVERVIEW

Interdisciplinary study of music cognition, with an emphasis on psychological, computational, and neuroscientific approaches. Focuses on listeners' response to sound, including perception, attention, memory, motor control, skilled performance, and emotional response.

THOUGHTS FROM COG SCI STUDENTS

- This course covers how music is perceived, processed and interpreted. It also goes over different empirical paradigms used to understand various music-related phenomena.
- This course contains a mixture of lectures and debates.
- Dr. Palmer's lectures are very clear and well-organized. She stops periodically and takes questions.
- The grading scheme for this course includes 2 midterms, a debate group project, homework questions (related to the debates), and participation during other class members' debates.
 - The debates in this course are designed to encourage class participation and delve into the scientific controversies still unsolved within the field .
- This course is reading heavy, and debates come in quick succession! To do well in this course, it is recommended to read the debate readings in advance in order to prepare appropriate debate homework questions on-time.
- ***TIP*** A basic background in music theory or performance will make this class much easier to follow.

COURSE STYLE

Seminar

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

PSYC 212, PSYC 213 and PSYC 204

WHAT TO TAKE NEXT

N/A

PSYC 538

Categorization, Communication and Consciousness

COURSE OVERVIEW

The main challenges that cognitive science faces today, focusing on the capacity to learn sensorimotor categories, to name and describe them verbally, and to transmit them to others, concluding with cognition distributed on the Web.

THOUGHTS FROM COG SCI STUDENTS

- This course explores all aspects of cognitive science -- it is a great class to take if you want to explore how all the streams of cognitive science fit together!
- The grading scheme for this course includes participation during lectures, skywritings (short blog/discussion posts), a midterm exam and a final exam.
 - The midterm and the final exam are long-answer/essay style.
 - Because the concepts in this course are quite abstract, it can be helpful to talk through the material/exam prompts with a friend.
 - Participation in class is recommended for those that feel comfortable doing so. If not, you can compensate by writing additional skywritings.
- Don't stress too much about making each skywriting perfect -- there are so many of them and they are designed to get you thinking critically about the material.
- Professor Harnad likes to spark discussion and ensure that you understand the content -- he has no problem re-explaining concepts until you thoroughly understand them, so feel free to ask him clarifying questions throughout the lectures.

COURSE STYLE

Seminar

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

A **300-level** course in PSYC or NEURO or PHIL or LING or COMP

WHAT TO TAKE NEXT

PSYC 433 – Cognitive Science

NSCI 300

Neuroethics

COURSE OVERVIEW

An introduction to ethical issues arising from basic and clinical neuroscience. Overview of therapeutic, diagnostic, and research interventions in mental and neurological disorders, and their implications on society.

THOUGHTS FROM COG SCI STUDENTS

- This is a very interesting class, especially if you are interested in bioethics and law. It covers the ethical implications of different aspects of neuroscience and offers you a deep understanding of how to apply ethical frameworks and principles to neuroscientific and psychological situations.
- The class is composed of only guest lectures: therefore, you get a lot of variety in topics from experts in their respective fields, but there is often some overlap between lectures.
- Attendance at most lectures is not mandatory.
- The course is very simple but writing-heavy: your grade is based on 5 short lecture commentaries, a midterm paper, and a final paper (with an abstract).
 - ***TIP*** two of your commentaries have to be written before the midterm, but try and write three! That way, you'll have less work in the second half of the course and more time to focus on your final paper.
- Note: this course can also count towards Complementary Philosophy credits instead of Neuroscience.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U2

PREREQUISITES

NSCI 200 and NSCI 201 or permission of instructor

WHAT TO TAKE NEXT

N/A

BIOL 320

Evolution of Brain and Behaviour

COURSE OVERVIEW

Functional and comparative approach to neuroanatomy, examining how species changes in brain organization contribute to evolutionary changes in behaviour.

THOUGHTS FROM COG SCI STUDENTS

- This course covers very interesting content that focuses primarily on nonhuman animals and how their behaviour is connected to their brain systems.
- The lectures are very engaging and provide a lot of fascinating examples. You have to attend them in order to do well.
- Reading is required for conferences, but the readings are often related to class activities and engaging.
- Exams have a lot of application rather than just memorization questions on them, but they are not too difficult if you go to all of the classes and study the conference papers.
- This course is a hidden gem at McGill that allows you to connect what you have learned about human brain circuitry to other animal species.

COURSE STYLE

Lectures and Conference

RECOMMENDED YEAR

U1 or **U2**

PREREQUISITES

NSCI 201 or **BIOL 306**

WHAT TO TAKE NEXT

N/A

BIOL 507

Animal Communication

COURSE OVERVIEW

Introduction to communication between animals, including humans. Physical and phylogenetic constraints on the evolution of communication systems will be discussed. The approach to communication will draw from behavioural ecology, psychology, physiology and physics.

THOUGHTS FROM COG SCI STUDENTS

- This is a seminar with no more 20 people in it, allowing for in-depth discussions and an opportunity to connect with both of the professors who teach the course.
- This class is reading-heavy and requires you to come prepared to discuss the articles.
- Assignments can be time consuming, but your effort will be rewarded.
- The final project is a research paper which can be difficult, but you are given the entire semester to prepare and you have opportunities to sit down and discuss your ideas one-on-one with the professors several times (these are well-spaced and planned out so that you are almost done by the time finals come!)
- This course provides a lot of insight into the connections between animal and human communication, in addition to formal research and research writing/presenting skills.

COURSE STYLE

Seminar

RECOMMENDED YEAR

U3

PREREQUISITES

BIOL 307 or equivalent and one of **BIOL 306** or **NEUR 310** or **NSCI 200** or **NSCI 201** or **PHGY 311**; or permission of instructor.

WHAT TO TAKE NEXT

N/A

PSYC 302

The Psychology of Pain

COURSE OVERVIEW

An introduction to pain research and theory, with emphasis on the interactions of psychological, cultural and physiological factors in pain perception. The role of these factors in clinical pain and its management by pharmacological and non-pharmacological means will be discussed.

THOUGHTS FROM COG SCI STUDENTS

- This course is extremely well taught! Dr. Mogil is a very clear and engaging lecturer.
- The course is content heavy, but the questions on the exams (multiple choice and some fill-in-the blank) are straightforward and fair.
- This course is known among students for being one of the best courses in the psych department, but it is challenging due to how much material there is to learn.
- If you are interested in healthcare or going into medicine, then you should definitely take this class. It touches on many relevant topics such as how clinical trials are conducted and pain management techniques. (Pain is the #1 reason why people seek healthcare!)
- There are very few readings in this course compared to other PSYC classes (only about 12 for the entire of the semester). They only make up a small part of the exam, but are directly related to class material.
- Stay on top of the material by reviewing the content at the end of each week.
- Quiz yourself, make flashcards, create study guides with key concepts.
- There is a research assignment where you have to annotate an article about pain of choice. Don't be afraid to go talk to the TAs if you need guidance!

COURSE STYLE

Lectures

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

NSCI 201 or **PSYC 211** or **PSYC 212** or permission of instructor.

WHAT TO TAKE NEXT

If you enjoyed the neuroscience/molecular basis of this class:

PSYC 318 — Behavioural Neuroscience 2

PSYC 342 — Hormones and Behavior

PSYC 311

Human Cognition and the Brain

COURSE OVERVIEW

The course is an introduction to the field studying how human cognitive processes, such as perception, attention, language, learning and memory, planning and organization, are related to brain processes. The material covered is primarily based on studies of the effects of different brain lesions on cognition and studies of brain activity in relation to cognitive processes with modern functional neuroimaging methods.

THOUGHTS FROM COG SCI STUDENTS

- The class covers a wide range of neuropsychological disorders.
- The content is very interesting and provides a good basis for understanding the brain and brain circuitry. Neuroanatomy is heavily emphasized in the first part of the course.
- The course is fairly content heavy and the readings make up a significant chunk of the material tested on exams.

COURSE STYLE

Lectures + Optional Conference

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

N/A

WHAT TO TAKE NEXT

PSYC 410 – Special Topics in Neuropsychology

PSYC 342

Hormones and Behaviour

COURSE OVERVIEW

The role of hormones in organization of CNS function, as effectors of behaviour, in expression of behaviours and in mental illness.

THOUGHTS FROM COG SCI STUDENTS

- This course focuses on how the endocrine system interacts with the nervous system.
- The class is very biology-based, so a strong background in this area will be very helpful!
- Dr. Almey is an excellent professor. Her lectures are extremely clear and organized.
- The class is very content heavy so it is important to stay on track of the material.
- There is lots of terminology to learn. Make flashcards and quiz yourself frequently!
- The readings are very dense and very long. The readings that cover the studies presented in class are heavily emphasized on the exams, but the other readings are not.
 - Be sure to read the studies discussed in class. These will be tested and you will be expected to write long answers (multiple paragraphs) about them.
 - For the other readings (e.g. review papers, studies not directly mentioned in class), it's okay if you can't make it through every single word. Instead, try to pick out 3-5 main ideas from the article.
- There is a writing assignment in this course. In previous years, the prompt requires you to cover a lot of information in a fairly short amount of space. Planning, outlining, and drafting is critical. Seek guidance from the TAs early in the writing process.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

BIOL 111, BIOL 112, BIOL 115 or equivalent

WHAT TO TAKE NEXT

BIOL 200 – Molecular Biology

PSYC 302 – Psychology of Pain

PSYC 318 – Behavioural Neuroscience 2

PSYC 410

Specific Topics in Neuropsychology

COURSE OVERVIEW

Developments in cognitive neuroscience and cognitive neuropsychiatry via readings from primary sources. Topics include the neural bases of memory, emotion, social cognition and neuropsychiatric diseases. Integrating knowledge from studies in clinical populations and functional neuroimaging studies.

THOUGHTS FROM COG SCI STUDENTS

- This is a very interesting class that takes a deep dive into some of the important concepts covered in earlier psychology classes.
- This class is very reading-heavy, so make sure to stay up to date with the current readings in order to understand what is being discussed in class.
 - ***TIP*** Try to form a reading group with other students so that the amount of reading is not overwhelming!
- This class has a lot more components when taught online compared to in-person. Additionally, the online exams were more difficult than the in-person ones. Make sure to understand your notes thoroughly and be able to apply theoretical concepts to hypothetical scenarios.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

PSYC 308 or **PSYC 311**

WHAT TO TAKE NEXT

PSYC 506 – Cognitive Neuroscience of Attention

PSYC 433

Cognitive Science

COURSE OVERVIEW

The multi-disciplinary study of cognitive science, exploring the computer metaphor of the mind as an information-processing system. Focus on levels of analysis, symbolic modeling, Turing machines, neural networks, as applied to topics such as reasoning, vision, decision-making, and consciousness.

THOUGHTS FROM COG SCI STUDENTS

- This course is generally well-liked among cognitive science students, as it touches on many “hot topics” in the field.
- There is a fair amount of content covered in the course and some of the concepts are very abstract.
- Dr. Otto is a pretty good professor. His lectures include “Think/Pair/Shares” that allow students to engage more deeply with the material.
- There are 2 midterms and a final exam (multiple choice) as well as a writing assignment.
- The prompt of the writing assignment involves the application and synthesis of the material covered in the course. It is not a formal research paper.

COURSE STYLE

Lectures

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

PSYC 212 or **PSYC 213**

WHAT TO TAKE NEXT

PHIL 221 – Introduction to History and Philosophy of Science 2

PHIL 306 – Philosophy of Mind

PSYC 319 – Computational Psychology

PSYC 538 – Categories, Communication and Consciousness

PSYC 506

Cognitive Neuroscience of Attention

COURSE OVERVIEW

An introduction to cognitive properties and neural mechanisms of human attention. The material will include an overview of the history of attention research, contemporary theories of attention, the varieties of attention, behavioral and neuroimaging experimental methods, the nature of attentional dysfunctions, and the links between attention and other cognitive functions including memory and consciousness.

THOUGHTS FROM COG SCI STUDENTS

- This course is a seminar and is thus discussion-based.
- The focus of the course is to promote critical thinking and reasoning skills, rather than memorizing content.
- There are group presentations, where students present 2-3 papers related to the week's topic and lead a class discussion.
- There is also a focus on analyzing and critiquing scientific papers -- there is a critique paper due in the middle of the semester and a take-home final that essentially involves 2 mini critique papers.
- The critique paper requires you to analyze an assigned research article.
 - ***TIP*** Read the article multiple times. An in-depth understanding of it is crucial for writing the paper. Start writing early and take advantage of office hours to receive guidance and feedback.

COURSE STYLE

Seminar

RECOMMENDED YEAR

U2 or **U3**

PREREQUISITES

PSYC 213 and PSYC 311, and one of PSYC 305 or BIOL 373, or permission of instructor.

WHAT TO TAKE NEXT

N/A

MCGILL SURVIVAL TIPS

MCGILL SURVIVAL TIPS

Welcome to the Cognitive Science Resource Guide! While Cognitive Science is one of the most diverse degrees, it can also be difficult to navigate. For this reason, SACS has created this compilation of resources: an annotated course requirements checklist, course reviews, and general McGill life hacks.

Enjoy!

HEALTH AND WELLNESS

- **Local Wellness Advisor**
 - These are trained clinicians that can assist you and get you the help you need.
 - <https://www.mcgill.ca/wellness-hub/get-support/local-wellness-advisors>
- **McGill Wellness Hub**
 - The Wellness Hub is where you go for medical-related needs on campus (e.g. doctor's appointments, Local Wellness Advisors, lab tests, etc.).
 - <https://www.mcgill.ca/wellness-hub/>
- **Office for the Students with Disabilities (OSD)**
 - If you have a disability and require academic accommodations (e.g. extended exam durations) you can register with the OSD.
 - <https://www.mcgill.ca/osd/>
- **Keep.meSAFE**
 - Keep.meSAFE is an online mental health resource designed for students and is available in over 60 languages.
 - <https://ssmu.ca/blog/2020/03/mental-health-resource-available-keep-mesafe/>
- **McGill Office of Religious and Spiritual Life (MORSL)**
 - MORSL hosts free workshops, events, meditation spaces and more for all McGill students regardless of their religious denomination, affiliation, or lack thereof.
 - <https://www.mcgill.ca/morsl/>
- **Peer Support Center (PSC)**
 - The PSC is a confidential and non-judgemental place where students can share their experiences with well-trained peer-supporters. Appointments can be booked online.
 - <https://psc.ssmu.ca/>
- **McGill Students Nightline**
 - The McGill Students Nightline is a non-judgemental, confidential and anonymous listening service where you can receive non-professional support from fellow students between the hours of 6pm and 3am.
 - <https://nightline.ssmu.ca/>

MCGILL SURVIVAL TIPS

There are a variety of valuable academic, social and wellness resources available for Cognitive Science students. While it is important to prioritize looking at course reviews and resources, other organizations and databases can also be a great addition to helping you in your academic and personal journeys during your undergrad. This guide includes a selection of different resources that you can use for your future success. If you ever need guidance towards other organizations or resources you can always reach out to SACS and your advisors!

ACADEMIC RESOURCES

• McGill Library Website

- The library website offers a variety of helpful services from databases to citation guides. It is a great place to start your research for any project and to learn more about possible topics of interest.

- <https://www.mcgill.ca/library/>

• McGill Tutorial Service

- If you are looking for a tutor for any of your courses, you can always refer to McGill's Tutoring Centre, which will set you up with a private tutor that fits the class that you are focusing on.

- <https://www.mcgill.ca/tutoring/>

• Other McGill-Affiliated Tutoring Services

- This page contains a list of tutoring services associated with McGill that are not part of the McGill Tutoring Centre.
- <https://www.mcgill.ca/tutoring/tutoring/resources>

• McGill Writing Centre

- If you want to improve your writing skills or learn to write for a specific audience, you can always contact the McGill's Writing Centre. They have drop-in office hours if you want to ask questions about an assignment or paper that you are writing.

- <https://www.mcgill.ca/mwc/>

• Media Streaming Sites

- There are many downloadable and streaming media sites provided by McGill for free. Websites like Kanopy and the MET Opera on Demand are a great place to find media content (TV shows, documentaries, films, music etc.) for both leisure and class assignments.

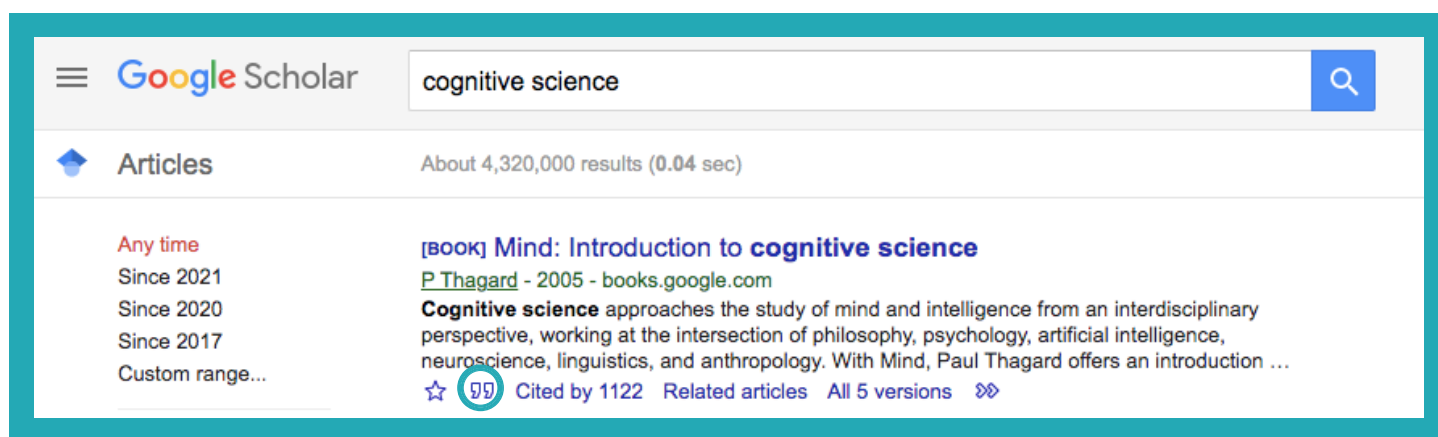
- <https://www.mcgill.ca/library/services/teaching/class-screening/media>

MCGILL SURVIVAL TIPS

ACADEMIC RESOURCES

• Google Scholar

- Google Scholar is an incredible resource for informal research and finding readings online. It can also generate citations automatically! If you search up the paper or document that you need, you can click the citation button (circled in **blue**). This will provide you with access to a pop-up containing the citation for the resource in a variety of different styles.
- <https://scholar.google.com/>



EXAM INFORMATION

- If you are thinking of deferring an exam, check out these resources for more information:
 - *Deferred/Supplemental Exams*: <https://www.mcgill.ca/exams/dates/supdefer>
 - *Knowing your Rights for Deferral*: <https://studentrights.ssmu.ca/final-exams/deferring-exams/>
 - You can also make an appointment with your advisor to discuss your options.
- As a student, you have the right to review and challenge your exam marks as well. You can find more information on this process here: <https://studentrights.ssmu.ca/final-exams/viewing-your-exam-grades/>
- Remember that your mental and physical health are **very** important. Therefore, deferring an exam to keep yourself healthy is an extremely valid reason to do so. Also, it is okay if your exam does not go the way you had expected. This is much more common than you might think and there is no need to panic – your academic performance does not define who you are.

MCGILL SURVIVAL TIPS

MINERVA TIPS

- Minerva will let you register for anything, even if you do not have the prerequisites (as long as the course has space and there are spots available for your year/program). It is recommended to check with your advisor and/or professors beforehand, but if there is a course you really want to take, Minerva will not prevent you from registering. Do so at your own risk – it is always helpful and recommended to take prerequisites before a class.
- Add/Drop Period is your best friend! Use this time to play around with your schedule and see what works and doesn't work.
 - You might have had difficulties with getting into classes during registration, but during Add/Drop, people are adding and dropping classes left and right – don't fret if you don't have the perfect schedule! Frequently check Minerva during Add/Drop and you're likely to find an open spot in the class. If you're still having trouble getting into a class by the end of Add/Drop, contact either Ryan or the professor, and they will give you information on how to proceed.