

# Cognitive Neuroscience

## PSYC 244 - Spring 2024

Instructor: Darcy Burgund ([dburgund@macalester.edu](mailto:dburgund@macalester.edu))

Class meetings: MWF 9:40 - 10:40 am, R 9:40 - 11:10 am, THEATR 203

### Introduction

Welcome to Cognitive Neuroscience! The field of cognitive neuroscience combines cognitive science and cognitive psychology with biology and neuroscience to investigate how the brain enables the mind. During this course, we will explore basic and contemporary concepts in cognitive neuroscience through lectures, activities, readings, and a research project. Students will learn to read and interpret primary source material, design and implement cognitive neuroscience studies, and present research in verbal and written forms. Through this, students will gain an appreciation for the amazing intricacy of the brain-mind relationship, as well as a sense of how this relationship may be understood using cognitive neuroscience techniques.

### Instructor

That's me!—Darcy Burgund. Please call me “Darcy”. If you prefer to be more formal, you may also call me “Dr. Burgund” or “Professor Burgund”. My preferred pronouns are she, her, hers.

### Email

I love receiving and responding to email messages ([dburgund@macalester.edu](mailto:dburgund@macalester.edu)). This is the best way to contact me at any time for any reason. Please do! I will also send email messages to you, and you should check your email at least once per weekday to make sure that you receive any communications from me in a timely manner.

### Appointments

I also love appointments and I would love to have one with you at any time for any reason. Please [sign-up for an appointment here](#), or, if none of the available times work for you, email me (!! ) to let me know days/times that would be better. Unless we decide something else, appointments will be in my office, OLRI 330.

### Class Meetings and Attendance

Class will meet in THEATR 203 on Mondays, Wednesdays, and Fridays from 9:40 - 10:40 am, and on Thursdays from 9:40 - 11:10 am (unless otherwise noted). I hope you will do your best to attend all/almost all of our classes. You will be responsible for knowing the material discussed, and class attendance is a component of the bigger assignments that

you will complete. Of course, there may be days that you are unable to come. Indeed, if you are feeling sick, I encourage you to stay home and heal. Flexibility tokens (see below) may be used to accommodate these occasions if they affect scored components. In addition, materials from each class meeting (e.g., lecture slides, audio-recording of meeting) will be posted on Moodle for students to access at their convenience. Critically however, the availability of these materials should not be interpreted as an invitation to treat the class as though it is asynchronous and online. Your physical presence in class contributes to our classroom community and is highly valued. As such, students who attend less than 75% of our classes will not be able to receive a final grade higher than A-, even if they obtain the points needed for this grade (see below). All of this is to say... I hope you will make it your general practice to come to class!

### **Recording Notification**

As noted above, I plan to audio-record our class sessions and post the recordings on Moodle. In accordance with [Macalester's classroom recording policy](#), I will not make these recordings available to anyone outside of our class. Similarly, you may not share, replicate, or publish any class recording, in whole or in part, or use any of the recordings for any purpose besides knowing what happened during the class period.

### **Scored Components**

Grades in the course will be derived from scores on 4 components: (1) smaller assignments, (2) bigger assignments, (3) tests, and (4) a presentation. I will track your scores on a Google Sheet that I will share with you individually and you may check any time. Brief descriptions of the components are provided below. Details about them will be provided during class and on Moodle.

#### *Smaller Assignments (12%)*

Students will complete 6 smaller assignments distributed across the semester (see schedule below). Except when noted on Moodle, smaller assignments are due by email to me before 9:40 am on the day they are scheduled. Smaller assignments are worth 2% each and will be scored using a three-level scale: student completes assignment with obvious effort = 2%; assignment completed but without obvious effort = 1%; assignment not completed = 0%.

#### *Bigger Assignments (30%)*

Students will complete 6 bigger assignments distributed across the semester (see schedule below). As with smaller assignments, bigger assignments are due by email to me before 9:40 am on the day they are scheduled (except when noted on Moodle). In contrast to smaller assignments, bigger assignments are worth 5% each and include class attendance. Bigger assignments will be scored using a five-level scale: student attends class and assignment is excellent = 5%; student attends class and assignment is very good = 4%; assignment is satisfactory = 3%; assignment is incomplete = 1%; assignment is not completed = 0%.

### *Tests (45%)*

Three tests will be given in class on the days indicated in the schedule. Tests will be cumulative, addressing all the material covered in class until that point, and emphasizing the material covered since the previous test. Accordingly, tests will be differentially weighted with Test 1 = 10%, Test 2 = 15%, and Test 3 = 20%. Tests will consist of multiple choice, short answer, and longer answer questions. Students who have a known conflict with the scheduled test day should contact me at least 1 week prior to the test to make alternative arrangements. Tests must be taken within 1 week of their scheduled date. Once scored tests have been returned, students will have 1 week to submit corrections for any test questions they got wrong in order to receive half of the points that were taken off added back to their score. For example, a student who submits a correction for a question they lost 2 points on will receive 1 point added back to their score.

### *Presentation (13%)*

Students will work in groups of 3 or 4 to design and implement an experiment using a divided visual-field (DVF) paradigm, and then create a slideshow presentation describing their work that they present to the rest of the class on 4/11/24 or 4/12/24. The presentation score will include an assessment of each student's contribution to the group project as well as an evaluation of the project and presentation itself.

### **Lateness and Flexibility Tokens**

Completing the above components when they are scheduled is important for keeping up with our material. Late assignments will be accepted for 48 hours following their due date however they will be penalized 25% of their score. After 48 hours, late assignments will no longer be accepted and will be assigned 0%.

Although I sincerely hope that you will be able to complete the course requirements when they are due, I realize that other aspects of your life may sometimes interfere with your ability to do this. To accommodate this reality, I offer 4 flexibility tokens to be used at your discretion in order to balance the demands on your time. Flexibility tokens may be used as follows:

- 48-hour extension on assignment or test corrections = 1 token
- Class attendance excluded from bigger assignment score = 2 tokens
- Late test (up to one week) = 3 tokens

Once your tokens are gone, extensions will only be granted in extreme circumstances (e.g., severe illness/medical emergency).

## Letter Grades

The total number of percentage points from the scored components will be converted into final letter grades as follows:

100 -	93 points = A	92 - 90 points = A-
89 - 87 points = B+	86 - 83 points = B	82 - 80 points = B-
79 - 77 points = C+	76 - 73 points = C	72 - 70 points = C-
69 - 67 points = D+	66 - 63 points = D	62 - 60 points = D-
59 -		0 points = NC

## Accommodations

Reasonable accommodations will be made for students with documented disabilities. If you have a disability that will impact your work in this class, please contact the [Center for Disability Resources](#) to discuss your needs. The office will contact me and we will work together to arrange the appropriate accommodations.

## Health and Well-Being

Maintaining your health and well-being will help you engage in your academic experience as fully as possible. As I noted above, you are encouraged to stay home if you are feeling sick. More generally, I encourage you to make your health and well-being a priority when balancing the many demands that you have on your time. Sleeping, moving your body, and connecting with others are critical for health and well-being and can increase your resilience when facing different stressors in your life. Macalester's [Laurie Hamre Center for Health and Wellness](#) offers many resources designed to improve health and well-being. Please reach out to them if you are having difficulty maintaining this fundamental dimension of your life.

## Academic Integrity

Academic integrity is a serious issue, and Macalester College has established [guidelines for defining and reporting cases of cheating and plagiarism](#). Cases of suspected academic dishonesty will be reported to the Director of Academic Programs immediately.

## Incompletes

Macalester College strongly discourages assignment of incomplete grades and incomplete grades will not be given except under dire circumstances and after consultation with the Dean of Academic Programs.

## Schedule

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
1/15/24	1/16/24	1/17/24	1/18/24 No class	1/19/24 <i>Introduction and History</i>
1/22/24 <i>Neuroanatomy 1</i>	1/23/24	1/24/24 <i>Neuroanatomy 2</i>	1/25/24 <i>Reading JCN Articles</i> • Small assignment	1/26/24 <i>Neuroanatomy 3</i>
1/29/24 <i>Methods 1</i>	1/30/24	1/31/24 <i>Methods 2</i>	2/1/24 <i>JCN Blitz 1</i> • Bigger assignment	2/2/24 <i>Methods 3</i>
2/5/24 <i>Methods 4</i>	2/6/24	2/7/24 <i>Review</i>	2/8/24 No class	2/9/24 <b>Test 1</b>
2/12/24 <i>Hemisphere Asymmetries 1</i>	2/13/24	2/14/24 <i>Hemisphere Asymmetries 2</i>	2/15/24 <i>Implementing DVF Paradigm</i>	2/16/24 <i>Visual Perception 1</i>
2/19/24 <i>Visual Perception 2</i>	2/20/24	2/21/24 <i>Object Recognition 1</i>	2/22/24 <i>Hemisphere Asymmetry Blitz</i> • Bigger assignment	2/23/24 <i>Object Recognition 2</i>
2/26/24 <i>Object Recognition 3</i>	2/27/24	2/28/24 <i>Object Recognition 4</i>	2/29/24 <i>DVF Project Discussion</i> • Bigger assignment	3/1/24 <i>Review</i>
3/4/24 <b>Test 2</b>	3/5/24	3/6/24 <i>DVF Materials Preparation 1 (OLRI 349)</i> • Small assignment	3/7/24 No class	3/8/24 <i>DVF Materials Preparation 2 (OLRI 349)</i> • Small assignment
3/11/24	3/12/24	3/13/24	3/14/24	3/15/24
~ ~ ~ ~ ~ Spring Break ~ ~ ~ ~ ~				

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
3/18/24 DVF Data Collection 1 (OLRI 349)	3/19/24	3/20/24 DVF Data Collection 2 (OLRI 349)	3/21/24 DVF Data Analysis 1	3/22/24 DVF Data Analysis 2  • Small assignment
3/25/24 Memory 1	3/26/24	3/27/24 Memory 2  • Small assignment	3/28/24 DVF Data Discussion  • Bigger assignment	3/29/24 Memory 3
4/1/24 Memory 4	4/2/24	4/3/24 Memory 5	4/4/24 "Memento"	4/5/24 "Memento"
4/8/24 DVF Presentation Peer Review  • Bigger assignment	4/9/24	4/10/24 Memory 6	4/11/24 DVF Presentations	4/12/24 DVF Presentations
4/15/24 Emotion	4/16/24	4/17/24 Language  • Small assignment	4/18/24 JCN Blitz 2  • Bigger assignment	4/19/24 Attention and Consciousness 1
4/22/24 Attention and Consciousness 2	4/23/24	4/24/24 Review	4/25/24 No class	4/26/24 Test 3
4/29/24	4/30/24	5/1/24	5/2/24	5/3/24