

# Brain and Language: The State-of-the-art LING497, Winter 2021

Jonathan R. Brennan

---

This course is **fully online**. Every week this term, you will:

- Read *book chapters* and *original research articles*
  - Attend *class discussions*
    - Tues and Thurs, 10 - 11:30 AM
    - Connect by clicking on this zoom link.
  - Submit occasional assignments via Canvas
  - Office hours
    - Thurs 9-10 am
    - Click here to make an by appointment
    - (feel free to email me if these slots doesn't work for you)
    - Click for zoom link
  - (Optionally) stop by the weekly coffee hour
    - Tues 9-10 am
    - Click for zoom link
- 

## Course Description

Language is a biological system unique to humans. What can we learn about this system by studying the brain, and how can we better understand the brain through the lens of language? To answer this question successfully linguists must engage with neuroscience, psychology, neurology, clinical practice, and more. Here, we take on this challenge. After learning foundational methods in brain imaging, we will engage with state-of-the-art research with topics chosen by you (some examples: The neural bases of sign language; neural plasticity and multilingualism; developmental language disorders and the brain, social neuroscience meets linguistics, etc.) In this class you will learn to read neuroscience papers with a focus on their impact for your own interests in linguistic theory and practice.

## Course Goals

To introduce the basic principles of the cognitive neuroscience of language, and to develop skills to address questions about the cognitive faculty of language using neuroscientific data.

## Expectations

To do well in this course you need to *participate thoughtfully* in class discussions and *apply the knowledge* that we develop through the course.

Knowledge is applied through quizzes and a multi-stage group project that you develop over the course of the term. Participation comes in the form of synchronous discussions each week and group-work. Students are expected to come to class having done the readings and other work so they can be active participants.

## Course Readings

While I have identified some readings that will get us started, an important part of the course is that the specific topics we focus on come from you. We will work together to find readings (original research and review articles) that we will read and discuss together. This part of the syllabus will be updated regularly.

*All readings can be downloaded from Canvas*

Please keep in mind that the readings, class lectures, and discussion points from from the instructor and your fellow students all reflect **particular points of view**. These perspectives do not have to be yours! I encourage you to think critically about the ideas in the readings and lectures as well as the perspectives of your colleagues in the course. Please express yourself!! A significant part of a college education is learning about the complexity of various issues. Therefore, it is important that we listen and respect one another, but we do not (and probably should not) always have to agree. A richer discussion will occur when a variety of perspectives are presented in class.

## Assignments & Grading

Before reading about coursework, remember: **unexpected things may come up**. We will try to be as flexible as possible as we balance the needs of everyone in the class. **Please communicate with me if you require special accommodations**

*All assignments are posted and submitted via Canvas*

### (50%) Research Project

You will do original research in this class and share it with your fellow students and the broader Linguistics community at U-M. While it's hard to get into a

lab and collect new data (especially during a pandemic!) there is original work to be done with existing published data. Together, we will conduct a set of **meta-analyses** of existing published research.

A meta-analysis brings together a set of published research findings that all address a common question and applies quantitative tools to assess the reliable and generalizable results that are shared across studies. This is one of the primary scientific tools for determining scientific consensus, and *you will have all the skills you need to perform one of these yourself in this class.*

Your project will be a combination of group work with students working on similar themes and independent work to write up and present your findings. The work is distributed throughout the term as we incrementally build up and practice the skills we need. A few key dates are indicated in the schedule below.

As is common in Capstone courses, everyone in the class will present their findings at meeting open to the entire Linguistics Department at the end of the semester.

### **(25%) Readings & Discussion**

There will be a range of different types of readings assigned over the course of the semester, including short textbook chapters, review articles, and original research studies. Some readings are chosen to prompt general discussion, while others are going to form the primary sources for your original research projects. In all cases, be sure to write down your questions and points of confusion as you read! These will be great jumping off points for further discussion.

Each week, please post *at least substantive one* question or comments on the **Canvas Discussion Board**. Our real-time meetings are short! I'm really looking forward to having a robust discussion forum for digging deep into the material this semester.

*Please try to make your contributions before the end of the day on Wednesday, so that they can inform our class discussion that week.*

### **(25%) Participation**

Participation is a big part of this class. In addition to the discussion posts, we meet for a real-time discussion on Tuesdays and Thursdays via zoom. Showing up means a lot to me, as does hearing your contributions via voice or chat.

I know technical glitches can get in the way of a fluent conversation when we are online, so I'll work hard to make sure that credit for participation is fair. You can miss at least two class meetings, no questions asked. If you think you may miss more than that, please communicate with me!

Absences due to representing the university in an official capacity, or due to conflicts with religious holidays, are accommodated without penalty so long

as appropriate documentation is provided. More details are available by the Newnan Academic Advising Center.

### Grading Scale

---

	A	B	C	NRC	NRC
+	97-99	87-89	77-79	67-69	
	93-96	83-86	73-76	63-67	<60
-	90-92	80-82	70-72	60-62	

---

### Course Schedule

This course is organized week-by-week. Each week follows roughly the same pattern:

- Readings are posted by the *previous Friday*
- We meet synchronously on *Tuesdays* and *Thursdays* from 10 - 11:30 AM
- Post on the discussion board by *Wednesday* end-of-day
- Assignments are due by *Friday at 5pm* on the week they are assigned.

#### Week 1: Jan 19, Jan 21

- **Topics** Intro, History, Anatomy & Imaging
- **Readings** Marr 1982 Intro & Ch. 1, SGN Ch. 1 pp. 7–14
- **Due**

#### Week 2: Jan 26, Jan 28

- **Topics** Deficits/Lesions, fMRI, Electrophysiology
- **Readings** SGN pp. 14–25
- **Due**

#### Week 3, Feb 02, Feb 04

- **Topics** Sentence processing overview and meta-analysis
- **Readings** SGN pp. 85–87, 103–107, Zicarella et al. 2017
- **Due** Methods Quiz

#### Week 4, Feb 09, Feb 11

- **Topics** We replicate Z et al.'s meta-analysis
- **Readings** Turkeltaub et al. 2002
- **Due**

**Week 5, Feb 16, Feb 18**

- **Topics** Wrap-up replication, discuss topics
- **Readings** TBD
- **Due** Replication report

**Week 6, Feb 23, 25**

- **Topics** Work together to identify research questions
- **Readings** TBD
- **Due** Research question with draft bibliography

**Week 7, Mar 02, Mar 04**

- **Topics** Search terms and finding target articles; Minilecture TBD
- **Readings** TBD
- **Due**

**Week 8, Mar 09, Mar 11**

- **Topics** Skimming and filtering target articles; Minilecture TBD
- **Readings** TBD
- **Due** Interim report 1 (on search terms and results)

**Week 9, Mar 16, Mar 18**

- **Topics** Reading articles and extracting values; Minilecture TBD
- **Readings** TBD
- **Due**

**Week 10, Mar 25 (NO CLASS Mar 23)**

- **Topics** Vetting results; Minilectures TBD
- **Readings** TBD
- **Due** Interim report 2 (on successes/failures so far)

**Week 11, Mar 30, Apr 1**

- **Topics** Conducting the analysis; Minilecture TBD
- **Readings** TBD
- **Due**

**Week 12, Apr 6, Apr 8**

- **Topics** Interpreting the results
- **Readings** TBD
- **Due** Interim report 3 (on what you found)

**Week 13, Apr 13, Apr 15:**

- **Topics** Feedback, debug, refine your work
- **Readings** TBD
- **Due**

**Week 14, Apr 20**

- **Topics** Wrap-up
- **Readings** none
- **Due** Write-up due on Friday April 30th
- **Due** Poster presentation on date TBD

**Frequently Asked Questions****What's the e-mail policy?**

E-mail should only be used for personal concerns that cannot be addressed via the discussion board, in class meetings, or in office hours.

The best place to ask questions is via the **Discussion Forum** where the instructor and fellow students may all engage with the question. Posting your questions on the forum allows for easy follow-up discussion and makes your contribution available to other students who may have similar questions. The instructors will monitor the forum to ensure answers are clear and accurate.

I will aim to respond to emails within 24 hours on weekdays. I am generally not available on e-mail after business hours or on weekends.

**I did the assignment, but it didn't get submitted on Canvas. Can you fix it?**

Please make sure to double-check that your assignments are submitted prior to the deadline indicated on the syllabus. Students are responsible for ensuring that their assignments are properly submitted.

**Can I record class and/or post class notes or recordings online?**

Students are prohibited from recording/distributing any class activity without written permission from the instructor, except as necessary as part of approved accommodations for students with disabilities. Any approved recordings may only be used for the student's own private use.

**Accessibility and Accommodations**

It is my job to ensure that all class-members can participate fully in all aspects of this class. Requests for accommodations by persons with disabilities may be made by contacting the Services for Students with Disabilities (SSD) Office located at G664 Haven Hall. The SSD phone number is 734-763-3000. Once

your eligibility for an accommodation has been determined you will be issued a verified individual services accommodation (VISA) form. Please present this form to me at the beginning of the term, or at least two weeks prior to the need for the accommodation (test, project, etc.).

## **Mental Health and Wellbeing**

If you or someone you know is feeling overwhelmed, depressed, and/or in need of support, services are available. For help, contact Counseling and Psychological Services (CAPS) at 734.764.8312 and <https://caps.umich.edu> during and after hours, on weekends and holidays, or through its counselors physically located in schools on both North and Central Campus. You may also consult University Health Service (UHS) at 734.764.8320 and <https://www.uhs.umich.edu/mentalhealthsvcs>, or for alcohol or drug concerns, see <https://www.uhs.umich.edu/aoresources>.

For a listing of other mental health resources available on and off campus, visit <http://umich.edu/~mhealth/>.

## **Sexual Misconduct Policy**

Title IX prohibits discrimination on the basis of sex, which includes sexual misconduct — including harassment, domestic and dating violence, sexual assault, and stalking. We understand that sexual violence can undermine students' academic success and we encourage anyone dealing with sexual misconduct to talk to someone about their experience, so they can get the support they need. Confidential support and academic advocacy can be found with the Sexual Assault Prevention and Awareness Center (SAPAC) on their 24-hour crisis line, 734.936.3333 and at <[sapac.umich.edu](mailto:sapac.umich.edu)>.

Alleged violations can be non-confidentially reported to the Office for Institutional Equity (OIE) at [institutional.equity@umich.edu](mailto:institutional.equity@umich.edu)

## **Academic Misconduct**

The University of Michigan community functions best when its members treat one another with honesty, fairness, respect, and trust. The college promotes the assumption of personal responsibility and integrity, and prohibits all forms of academic dishonesty and misconduct. All cases of academic misconduct will be referred to the LSA Office of the Assistant Dean for Undergraduate Education. Being found responsible for academic misconduct will usually result in a grade sanction, in addition to any sanction from the college. For more information, including examples of behaviors that are considered academic misconduct and potential sanctions, please see <[lsa.umich.edu/lsa/academics/academic-integrity.html](http://lsa.umich.edu/lsa/academics/academic-integrity.html)>

The LSA Office of Academic Affairs defines plagiarism as “representing someone else’s ideas, words, statements or other work as one’s own without proper

acknowledgment or citation” (see <https://lsa.umich.edu/lsa/academics/academic-integrity/academic-misconduct.html>). New writing challenges can tax your writing fluency, and entering new academic discourses can test your abilities to synthesize and take ownership over source texts and concepts. My job as instructor in this course is to help you through these obstacles so that you can find your footing as a writer in new domains. Your job as a student is to keep the faith, so to speak, and work through these new domains until you regain confidence. This work requires patience, planning, and focus.

Much plagiarism occurs as a result of a lack of care in regard to reading, note taking, and citation practices, or from procrastination, and/or panic. Care, timeliness, and communication will eliminate most of the risk. If you have questions about whether or not you should give credit to a source in your work, you may clarify it with me. In general, though, I recommend always the citing sources you have consulted as well as those you borrow from directly. If you are having difficulty with an essay, please contact me right away! That’s what my email address and office hours are for.