

BRAIN AND LANGUAGE

LIN 4790-13664

Time: T7th (1:55-2:45 pm); MAT 15

R7+8th (1:55-3:50 pm); LIT219

Academic Term: Fall 2024

Instructor

Dr. Edith Kaan

Kaan@ufl.edu; 352 294 7453 (leave a message)

Office hours

M 1:30-2:30pm; R 12:50-1:40pm and by appointment. In-person in TUR 4127. If you would like to meet me over zoom, please contact me in advance for a zoom number.

Course description

In this course, major issues and terminology in brain and language research will be introduced. Topics addressed include: brain imaging techniques, ERPs, lesion studies, auditory perception, categorization in the brain, localizationist versus generalist approaches, symbolist versus connectionist approaches, modularity, innateness, critical period, lateralization, plasticity, hemispheric differences. Students will be familiarized with important controversies related to these issues, and will learn to evaluate data from brain imaging research. In in-class exercises and other assignments, students will have the opportunity to focus in on a particular topic

Course prerequisites

LIN3010 or SPA4004

Course objectives

- To learn about central issues and terminology in brain and language research (lectures, textbook, in-class exercises)
- To learn to evaluate results and claims from neurolinguistics and brain imaging studies (class room discussions, research project)
- To improve written and oral presentation skills (classroom discussions, written project, oral presentation)

Course website

- On Canvas: <http://elearning.ufl.edu>
- Course materials (lecture notes, syllabus, etc.) and exercises will be made available on the course website. Current **deadlines and grades** will also be posted on the website. You are responsible for checking the site regularly and for letting the instructor know *promptly* if anything is unclear, or if your grade has been entered incorrectly.

Course readings:

- **Required:** Brannon, Jonathan (2022). *Language and the Brain. A slim guide to neurolinguistics*. Oxford University Press. ISBN 978-0-19-881476-4.

- Readings available on-line (through UFLib): **(note: subject to change!)**
 - Campbell, S. (2006). Language in the non-dominant hemisphere. In: K. Brown (Ed.) *The Encyclopedia of Language and Linguistics*. Elsevier. pp. 529-536, <https://doi.org/10.1016/B0-08-044854-2/02395-6>
 - Gabrieli, J.D.E. (2009). Dyslexia: A new synergy between education and cognitive neuroscience. *Science*, 325 17 July 2009 .
 - Giuliano, R., Pfordresher, P., Stanley, E., Narayana, S., & Wicha, N. Y. (2011). Native experience with a tone language enhances pitch discrimination and the timing of neural responses to pitch change. *Frontiers in Psychology*, 2. <https://doi.org/10.3389/fpsyg.2011.00146>
 - Kaan, E. (2007). Event-Related Potentials and language processing: A brief overview. *Language and Linguistics Compass*, 1(6), 571-591.
 - Patterson, K., Nestor, P.J. & Rogers, T.T. (2007). Where do you know what you know? The representation of semantic knowledge in the human brain. *Nature Reviews Neuroscience*, 8, 976-987.
 - Pinker, S., & Ullman, M. T. (2002). The past and future of the past tense. *Trends in Cognitive Sciences*, 6(11), 456-463.
 - McClelland, J. L., & Patterson, K. (2002). Rules or connections in past-tense inflections: what does the evidence rule out? *Trends in Cognitive Sciences*, 6(11), 465-472.

Assessments

Assignment	Percentage of Final Grade
Homework assignments	35%
Short Quizzes (about 5)	20%
Research project + presentation	40%
Class participation/In class assignments	5%
Extra credit (research participation)	2%

Details of assessments

- **Homework Assignments:** Homework assignments will be made available on the course website about a week before they are due; answers need to be turned in **on the website before 1:55pm** on the day they are due, unless indicated otherwise.
- **Short Quizzes:** Every 2-3 weeks, there will be a short quiz at the beginning of class to test your knowledge of terminology and main concepts discussed in the 2-3 weeks before the quiz. These will be closed-book tests mainly consisting of multiple choice questions. **For exact dates, see the course website.** The dates in the schedule below are subject to change!

- **In-class Activities:** Some in-class activities will require written responses. In some cases, students will be asked to submit a copy of their responses. Activity participation will typically be scored as 100%, but will be graded as 75% when a student is lacking in some effort, or 0% if the assignment has not been handed in.

Research Project Assignment: Over the course of the semester you will work on a project. The topic of this project and the readings pertaining to the project will be assigned to you by the instructor. At various points throughout the semester assignments related to this paper need to be submitted. For detailed instructions and formatting, see the course website.

Part 1: Thinking about experimental techniques: you will be asked to evaluate the use of certain experimental methods to answer particular research questions, based on an original research article assigned to you.

Part 2: Summary: you will be asked to summarize an original research article assigned to you.

Part 3: Group analysis: You will be asked to read 2-3 other research papers on the same research topic that were summarized by your group members, plus one additional paper that your group finds on their own. As a group, you will be asked to identify the differences and similarities among the research findings. This will result in a written group report.

Part 4: Project presentation: The findings in part 3 will be presented to the class as a poster or power point presentation (TBA). This presentation should clearly summarize the main points and arguments of the papers you have read and should conclude with your group's opinion, and suggestions for further experimentation.

Part 5: Final research project/paper assignment: This paper should be written in your own words and submitted individually. It should include a review of a paper you have not discussed in your group report. The final paper should clearly summarize the main points and arguments (data) in favor of one position or the other, concluding with your own stance, as well as suggestions for further experimentation.

- **Optional extra credit assignment:** Students may increase their total grade points by 2 (out of 100) by participating in 2 hours of participation in psycholinguistic experiments. **Deadline is November 12.** For a list of studies that qualify, see the SONA website <https://ufl-slhs.sona-systems.com/>. For details on how to use SONA, see [this document](#). If you choose not to participate in research or do not qualify for any of the studies, you can receive the same amount of course credit by means of an alternative assignment. This involves writing a synopsis of a short research article, video, or a podcast. Details will be made available on the course website.

Cellphone Policy, Attendance Policy, AI policy, Class Expectations, and Make-Up Policy

- Cell-phone use is not allowed during class unless this is part of the course assignments. If you are using a laptop in class, only use it to take notes and for in-class assignments.
- Students are required to turn in all assignments and tests before the class period they are due. Please contact the instructor in advance if you need to skip a class, or cannot make a deadline.

- Students need to disclose any use of AI in their assignments, and need to indicate their prompts and their critical (content) edits of the AI output. AI output without prompts or critical edits will not be accepted. AI needs to be properly cited (<https://apastyle.apa.org/blog/how-to-cite-chatgpt>).
- Attendance is mandatory. If you are absent, or more than 15 minutes late, for more than two classes, you will get a warning. If absences persist the instructor can prohibit further attendance and assign a failing grade for excessive absences.
- Requirements for class attendance and make-up exams, assignments and other work in this course are consistent with university policies that can be found at: catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/
- Students are encouraged to employ critical thinking and to rely on data and verifiable sources to interrogate all assigned readings and subject matter in this course as a way of determining whether they agree with their classmates and/or their instructor. No lesson is intended to espouse, promote, advance, inculcate, or compel a particular feeling, perception, viewpoint or belief.

Grading

The course grading scale is:

92-100 = A	89-91.9 = A-	86-88.9 = B+	82-85.9 = B
79-81.9 = B-	76-78.9 = C+	72-75.9 = C	69-71.9 = C-
66-68.9 = D+	62-65.9 = D	58-61.9 = D-	Below 58 = E

For UF grading policies for assigning grade points, see:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Students Requiring Accommodation

Students with disabilities requesting accommodations should first register with the Disability Resource Center (<https://disability.ufl.edu/students/get-started/>) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>.

Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

University Honesty Policy

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: “On my honor, I have neither given nor received unauthorized aid in doing this assignment.” The Honor Code (<https://sccr.dso.ufl.edu/process/student-conduct-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: <http://registrar.ufl.edu/catalog0910/policies/regulationferpa.html>

Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium,

to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Campus Resources: see course website

Schedule (subject to change!!!)_

The following schedule is an estimate of the course's progress, with readings for the given week and **approximate** dates of the tests and assignments. The instructor will let you know when the tests and assignment deadlines are exactly as they approach, and will keep you updated if we go off track. *****Please regularly consult the schedule on the course website for updates.*****

SNG= Slim guide to neurolinguistics (Brennan textbook)

Week	Dates	Topic	Readings/Assignment(s)
1	Aug 22	Introduction Brain anatomy	SGN 1:1–17; SGN 2:18–25 “getting to know you”
2	Aug 27 Aug 29	lesions	SGN 2: 25-31 Short Quiz
4	Sept 3 Sept 5	fMRI Fieldtrip to scanner	SGN 2: 31-34
3	Sept 10 Sept 12	ERP Fieldtrip to ERP lab	SGN 2: 34-40 Kaan (2007)
5	Sept 17 Sept 19	Auditory perception how to read papers	SGN 3; SGN 4:62–71 HW 1 Project part 1 (techniques) Giuliano et al. (2011)
6	Sept 24 Sept 26	Speech Production and Perception	SGN 4:71–81 Short Quiz
7	Oct 1 Oct 3	Words in the brain	SGN 5:82–93 Project part 2 (summary) Patterson et al. (2007)
8	Oct 8 Oct 10	Morphology	SGN 5:94–99; Pinker & Ullman (2002); McClelland & Patterson (2002) Short Quiz
9	Oct 15	Dyslexia (Guest lecture by Dr. Centanni)	Gabrieli (2009)

	Oct 17	Embodied cognition	SGN 6
10	Oct 22 Oct 24	The N400 & P600; Prediction	SGN 7 Short Quiz
11	Oct 29 Oct 31	On composition; Naturalistic methods	SGN 8 HW 3 Project part 3 (group report)
12	Nov 5 Nov 7	Dependencies; "Broca's Area"	SGN 9 Extra credit deadline
13	Nov 12 Nov 14	Language acquisition/bilingualism	TBA Short Quiz
14	Nov 19 Nov 21	Right hemisphere	Campbell, S. (2006) HW 4 Project presentations
15	Nov 26 Nov 28	NO CLASS NO CLASS	
16	Dec 3		Project presentations