

**LING 441/541**  
**Language Processing and Development 1**

Instructor: Naja Ferjan Ramírez

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Class Website: <https://canvas.uw.edu/courses/1373302>

Class Time: T, Th: 1:30-3:20, on Zoom

Office Hours: W: 3:00-3:50 pm, on Zoom

Final exam date & time: 6/12 2:30-4:20 pm

Course description:

This course explores current research and theory on language processing and development in children and adults, with a focus on sound- and word-level representations. We will take an interdisciplinary approach, and will study language from a variety of perspectives relating linguistics to cognitive science, psychology, neuroscience, and information science.

The big picture questions that we will study are: What is language, and where does it come from? How do we understand and produce sounds and words in real time? How do we develop word knowledge? Specific topics include origins of human language, the brain processing of sounds and words in adults and children (monolingual and bilingual), speech perception, word recognition and processing, acquisition of phonology and word meanings, the neurobiology of reading as well as a variety of methodologies that are used to study these processes. Knowledge of introductory-level linguistics is assumed.

Ling 441 is the undergraduate section of the course, and Ling 541 is the graduate section. The differences between the two sections are noted throughout this syllabus.

Learning Objectives:

- Understand and assess current and past theories and research on language processing and development, through an interdisciplinary lens.
- Understand, evaluate, and describe the methodologies commonly used in research on language processing and development.
- Critically evaluate original research papers, review papers, and theoretical papers in language processing and development.
- Participate in and lead academic presentations and discussions.

Course Web Page and Class Meetings:

We will use Canvas as the course webpage. On the homepage, you will find a module for each week of class. In each module, you will find a mini syllabus for that week, describing the topics for each class, the learning objectives, assignments, due dates, readings, and lab assignments. These mini syllabi will provide the most up to date information about the course content. The course will be conducted fully online, through a combination of synchronous and asynchronous activities. All activities denoted as “synchronous” will be conducted on Zoom, at 1:30 pm on Tuesdays or Thursdays, as specified in the class schedule (see page 7 of this document and the mini syllabi for each week), and all Zoom sessions will be recorded. Please download Zoom, and read how to use it here:

<https://itconnect.uw.edu/connect/phones/conferencing/zoom-video-conferencing/zoom-software/>).

The activities denoted as “asynchronous” will vary, but may include lecture recordings, online modules, or other activities that can be carried out on your own time schedule. We recommend that you complete all asynchronous activities before completing the homework, as materials from these sessions will be tested on these assignments in addition to the two exams over the quarter.

Please note that this class has a *lab component*. There are a total of 7 lab assignments, which are to be completed in small groups. The lab groups will meet on their own schedule, approximately once a week. See “Labs” under “Assessment” for details. Please note that the content of the lab assignments **will** be included on the exams.

#### Accessing live lectures, office hours, and recorded lectures:

To access the synchronous classes (T/Th 1:30-3:20), and office hours (W 3:00-3:50 pm), please click on the “Zoom” button within the Canvas site. Find the correct meeting day and time, and join. **All synchronous lectures will be recorded.** You may watch the recordings after, in the same locations (click on “Zoom” within Canvas, navigate to “Cloud Recordings”, find the correct date and time, and watch). The asynchronous (prerecorded) lectures will be posted in the same location. Office hours will NOT be recorded.

#### Readings:

Textbook: Sedivy, J. (2018). *Language in Mind: An Introduction to Psycholinguistics*. Second Edition. (Please note that you should not use the first edition of the book). I refer to this text as “LM.”

Journal articles (original research papers, review papers, or theoretical papers) will also be covered every week. For details, see the weekly schedule and the list of all research papers at the end of this document. I will post the PDFs on Canvas in each week’s module. Author names and years of publication are listed at the end of this document.

#### Student Responsibilities and Expectations:

You are responsible to complete all assigned readings **before class**. Doing so will help you to better understand and follow the discussion, participate, ask more relevant, in-depth questions and complete the assignments more successfully.

#### Assessment for LING441:

1. Homeworks (20%)
2. Discussion Guides (20%) (10% + 10%)
3. Midterm Exam (20%)
4. Final Exam (25%)
5. Lab Reports (15%)

#### Assessment for LING541:

1. Homeworks (15%)
2. Discussion Guides (20%) (10% + 10%)
3. Midterm Exam (15%)
4. Final Exam (20%)
5. Lab Reports (15%)
6. Zoom Presentations (15%)

Homeworks: Throughout the quarter, you will complete a series of untimed homework assignments and submit them on Canvas (due dates in schedule on p. 7 and within the mini syllabi). The homework assignments will test your knowledge of the readings and lecture material, and the format will be

multiple choice and short-answer questions. There will be **no** opportunity to retake any of the homeworks, extend the homework period, or make up missed homeworks.

Discussion Guides (10% +10%): For each assigned research paper, students will prepare and submit a Discussion Guide (henceforth, DG). A DG template can be found on Canvas, under the Syllabus and Templates module. *Please look at the structure of the template to see exactly what I am looking for, and use the template for all your DG submissions.* There are a total of 19 assigned research papers, and a DG should be submitted for each of these. You will receive one point for submitting each DG regardless of whether your answers are correct, as long as you follow the guidelines on the template and fill in all the content (i.e. address the question that is asked and write down the correct number of sentences for each question), and one extra point for turning in at least 18 (541 students) or 13 DGs (441 students), bringing the total to 20 points, constituting 10% of the final grade. Please note that there are *two* templates: one for original research papers (most of the assigned readings), and one for the theoretical / review papers (such as, but not limited to DG3 and DG4). It is your responsibility to figure out which DG template to use for each paper. If you choose the incorrect one (i.e. the review template for an original research paper or vice versa), you will receive a 0.

For the remaining 10% of the DG grade, *two* of your DGs will be *graded for content*. These two DGs will be randomly drawn from all the DGs that you will submit. One will be drawn in Week 5, for submissions between Weeks 1 and 5, and one will be drawn in Week 10, for submissions between Weeks 6 and 10. These two DGs will be graded on a 10 point scale (see DG template for details). Each of the two graded DGs will be worth 5% of your grade, for a total of 10%. **\*\*You must have at least 4 DGs by Thursday of Week 4 to participate in the first draw, and at least 14 DGs total (541 students) or 10 DGs total (441 students) by Thursday of Week 10 to participate in second draw. If you have fewer, you will receive a 0 for this portion of your grade\*\*.**

All DGs must be submitted on Canvas, by 1:30 pm on the assigned day (see course schedule for details). Please make sure you keep a copy of each DG for yourself too – you will want to use the DGs as you prepare for the exams. Late DGs will receive a 0 credit and will not be counted towards your final number of submitted DGs.

Midterm Exam and Final Exam: There will be two exams. The first is a midterm exam and will cover the topics of the first half of the class. The second and final exam is cumulative, but with a focus on the material covered since the midterm. The exams will cover information from the lectures, research paper presentations, and the readings (textbook and research papers). The focus of the exams will be on understanding the content of the readings and lectures, research methods, experimental procedures, and data interpretation.

Lab Reports: This class has a lab component. All lab assignments are outlined in the mini syllabi. Some of these assignments can be done individually, and some should be done in small groups (on Zoom). As such, student groups have been created on Canvas. *Each group should meet on Zoom once per week, or use an alternative method of group communication, to work on the lab assignments together* (for lab assignments that require group work), *or to discuss the lab assignments that each group member had completed individually.* Each group has been assigned a graduate student (541 Student) “Leader”. As part of the 541 requirement, the graduate student group leader will contact the other (undergraduate) group members sometime in Week 1, to figure out the best way for the group to work together throughout the quarter.

For each Lab, each student must submit a Lab Report (template under Syllabus and Templates module). The Lab Reports are due on Monday at 11:59 pm for the labs that were held in the previous week (i.e. Lab Report 1 is due on Monday of Week 3, Lab Report 2 is due on Monday of Week 4 etc. – see mini syllabi for details). The maximum number of points you can get for each lab report is 5. *If you are unable to participate in your lab group meeting, you must submit an alternative assignment: a 3 page paper (double spaced, 1 inch margins; 12 pt Times New Roman font; template under Syllabus and Templates module), answering the questions that go along with each activity, and describing your observations on each of the listed activities, to earn the same number of points.*

There will be **no** opportunity to retake any of the labs, extend the lab period, or make up missed lab assignments. Because of this strict policy you will be allowed to drop your lowest lab grade. Please note that the material covered in the Labs **will** be included on exams.

Zoom Presentations of Research Papers: Each of the 541 students has been assigned one research paper to present on Zoom. Ling 441 students will not be making Zoom presentations, but they should attend all presentations and submit a DG for each, as the content of all Zoom presentations will be covered on the exams. The selected papers are representative publications on the topics covered in class. Students will be assessed based on the quality of their presentation (grading rubric below). Each presentation will be 25 minutes long (+ 10 mins for questions / discussion – see below), and should cover all sections of the paper (introduction, methods, results, discussion and anything else that is included). For review papers, the presentation should cover all sections of the paper as well.

Please remember that one of the objectives of this course is to understand the **methods** used to study language processing and development, as well as to interpret scientific results (tables, graphs); presentations should be structured accordingly. Remember to explain how the authors derived the results, what they measured, and what evidence they provide in support of their conclusions. I encourage students to present the main points, but also to guide discussion and encourage participation. Just like lectures, recordings of Zoom presentations will be posted to the course website, as soon as they become available. *If slides or any other materials are used (such as handouts), you must email them to Naja by 8:00 AM on the day after the presentation, and they will also be posted on the Canvas site, within the weekly modules.*

To see what I am looking for in your presentation, please consider the grading rubric below. Notice the last item in the table: your self-evaluation. Each student should submit a self-evaluation after their completed presentation, by 8 am on the day after the presentation. A self-evaluation template can be found on Canvas, under the “Syllabus and Templates” module.

If you have questions about the content of your presentation, or if there are things that you do not understand about the content that you are scheduled to present, you are welcome to connect with me to resolve these, but you should do so well in advance of your scheduled presentation (i.e. at least 4 business days before you are scheduled to present)

Criteria	Ratings			PTS
	Yes!	More than half of the material is well presented and understood by presenter in depth.	Less than half of the material is well presented and understood by presenter in depth.	
Is the presenter well prepared and shows in-depth understanding of material?	Yes! 3 points	More than half of the material is well presented and understood by presenter in depth. 1-2 points	Less than half of the material is well presented and understood by presenter in depth. 0 points	3
The presentation is well organized, easy to follow.	Yes! 3 points	Presentation somewhat well organized, relatively easy to follow, with some difficult spots. 1-2 points	Major issues with presentation organization. 0 points	3
All important parts of paper covered	Yes! 2 points	Most parts of paper covered 1 point	Major parts of paper not covered 0 points	2
Methodologies and results or findings covered in depth	Yes! 2 points	Most parts of methods, results or findings covered in depth. 1 point	Major parts of methods, results or findings missing. 0 points	2
Presenter shows enthusiasm and excitement for the topic presented.	Yes! 1 point	Presenter somewhat enthusiastic and excited about topic. 0.5 points	Lack of enthusiasm and excitement for topic. 0 points	1
Time management: all content covered in 25 mins	Yes! 2 points	Most content covered in 25 mins 1 point	Major content points not covered in 25 mins 0 points	2
Question period: Presenter able to answer questions in a satisfying way	Yes! 2 points	Most questions answered well. 1 point	Most questions not answered well. 0 points	2
Is the discussion engaging? Does the presenter invite others to participate?	Yes! 2 points	Discussion somewhat engaging; some attempts to encourage participation. 1 point	Most of discussion not engaging. 0 points	2
Presenter relates subject matter to content from previous weeks, other related topics, and/or real life issues	Yes! 1 point	Some connections made with content from previous weeks, other related topics, real life issues 0.5 points	No connections made with content from previous weeks, other related topics, real life issues 1 point	1
Presenter sends slides and any other materials to Naja by 8 am the day after the presentation.	Yes! 1 point	Slides and other materials sent up to 24 hrs late. 0.5 points	Slides and other materials sent more than 24 hrs late or not at all. 0 points	1
Presenter fills out their own grading rubric and submits it on Canvas by 8 am the day after the presentation.	Yes! 1 point	Grading rubric filled out in full, but submitted up to 24 hrs late. 0.5 points	Grading rubric not filled out or submitted more than 24 hrs late. 0 points	1
<b>20 points</b>				

### Guest Lectures:

Four guest lectures are scheduled throughout the quarter. The readings have been selected (or will be shortly) by each of the guest lecturers, and you should read these and submit a DG before the scheduled guest lecture, in the usual way.

### Grading:

The following UW grading scale will be used

([www.washington.edu/students/gencat/front/Grading\\_Sys.html](http://www.washington.edu/students/gencat/front/Grading_Sys.html))

#### Percent = Grade

≥ 95% = 4.0	88 = 3.3	81 = 2.6	74 = 1.9	67 = 1.2
94 = 3.9	87 = 3.2	80 = 2.5	73 = 1.8	66 = 1.1
93 = 3.8	86 = 3.1	79 = 2.4	72 = 1.7	65 = 1.0
92 = 3.7	85 = 3.0	78 = 2.3	71 = 1.6	64 = 0.9
91 = 3.6	84 = 2.9	77 = 2.2	70 = 1.5	63 = 0.8
90 = 3.5	83 = 2.8	76 = 2.1	69 = 1.4	60-62 = 0.7
89 = 3.4	82 = 2.7	75 = 2.0	68 = 1.3	< 60 = 0.0

### Policies:

Powerpoint slides & lecture recordings: I will post all Powerpoint slides and all lecture recordings for the lectures that I will hold. The slides will be posted within the weekly modules and the lecture recordings will be posted automatically on Canvas (click the Zoom button), as soon as they become available. The asynchronous sessions and the accompanying slides will be posted by the scheduled lecture time (1:30 pm), within the weekly modules.

Grading challenges, questions, complaints: If you have a question or complaint about a wrong answer on an exam or wish to make a grading challenge or appeal, you must wait 24 hours after receiving the grade and then arrange to talk to me about it during my office hours.

Questions and email etiquette: If you email me, please: 1) use polite language; 2) use a relevant and informative subject line that includes 'LING 441/541'; 3) use your UW email or sign off using your full name so I can identify you; and 4) allow up to 48 hours to receive a response.

#### Classroom behavior/Academic integrity and conduct:

Students are expected to conduct themselves with the highest standards of academic ethics, honesty and integrity. Academic misconduct includes (but is not limited to) plagiarism, harassment, cheating, falsification, or disruptive behavior and will not be tolerated. It is your responsibility to read and understand the University's expectations in this regard (<http://www.washington.edu/cssc/for-students/student-code-of-conduct/>). Any student found to be in violation of proper academic conduct will be reported to the Advisory Committee on Student Conduct for a hearing.

Hand in your own work: I highly encourage you to study and work together with your classmates. It is ok to discuss your homework assignments, labs, discussion guides, and Zoom presentations. However, *you must use your own words in all documents that you submit. Identical submissions will not be graded. If you have worked on an assignment in a pair or in a group, include a note about this in your write up.* (Example: I worked with John Smith and Maria Muñoz on this Discussion Guide. We all read the paper independently, but discussed the method as a group. Each of us completed their own DG.)

Special accommodations: To request academic accommodations due to a disability (e.g., a note taker, extra time on exams etc.), please contact Disabled Resources for Students (DRS), 011 Mary Gates, 543-

8924(V), 543-8925 (TTY), uwdrs@uw.edu. If you have a letter or email from DRS indicating that you have a disability which requires special academic accommodations, please come to see me *at your earliest convenience* so the proper accommodations can be discussed and met.

Religious accommodations: Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Religious Accommodations Policy (<https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/>). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (<https://registrar.washington.edu/students/religious-accommodations-request/>)."

#### Schedule Overview:

**\*\*Note:** It is possible that dates, topics and reading assignments may change in order to accommodate class needs. You will be notified of any changes ahead of time. Always check your email and the Canvas website for any updates\*\*

<b>Week &amp; Topic</b>	<b>Date</b>	<b>Presenter</b>	<b>Assignments***</b>	<b>Readings</b>
1; Introduction	Tu 3/31	Naja	NONE	Syllabus, LM: Ch1
1; Origins of Language	Th 4/2	Naja	NONE	LM: Ch2; 2.1, 2.3, 2.4, 2.5., 2.6
2; Online Presentations	Tu 4/7	Naja; asynchronous	HW1 opens; due 4/14	LM: Ch2; 2.2., I-LABS module 9 + Discussion
2; The Social Underpinnings of Language	Th 4/9	Dr. Rechele Brooks	DG1 and DG2 due Lab 1 due 4/13	Brooks & Meltzoff (2008) Conboy, Brooks, Meltzoff, & Kuhl (2015)
3; Language and the Brain	Tu 4/14	Naja	HW2 opens; due 4/21	LM: Ch3
3; Language and the Brain	Th 4/16	Research presentations	DG3 and DG4 due Lab 2 due 4/20	Kuhl & Rivera-Gaxiola (2008) Hickok & Poeppel (2007)
4; Learning Sound Patterns	Tu 4/21	Naja	HW3 opens; due 4/28	LM: Ch4
4; Learning Sound Patterns	Th 4/23	Research presentations	DG5 and DG6 due Lab 3 due 4/27	Pelucchi, Hay, & Saffran (2009) Kuhl, Tsao, & Liu (2003)
5; Review	Tu 4/28	Naja	NONE	NONE
5; Midterm	Th 4/30	None	Midterm	
6; Learning Words	Tu 5/5	Naja	HW4 opens; due 5/14	LM: Ch5 (skip 5.5) see mini syllabus for details
6; Learning Words	Th 5/7	Research presentations	DG7 and DG8 due Lab 4 due 5/11	Bergelson & Swingley (2012) Gillette et al. (1999)***
7; The Word Gap	Tu 5/12	Naja	DG9 due	LM: Ch5, section 5.5 Golinkoff et al., (2019)
7; Speech, Music, and the Brain	Th 5/14	Dr. Christina Zhao	DG10 and DG11 due Lab 5 due 5/18	LM: Box 7.4 Zhao & Kuhl (2016) Hannon & Trehub (2005)***

8; Speech Perception & Word Learning in Bilinguals	Tu 5/19	Dr. Amy Pace	DG12 and DG13*** due	Two papers; TBA
8; Speech Perception & Word Learning in Bilinguals	Th 5/21	Research presentations	DG14 and DG15 due	Byers-Heinlein et al. (2017) Blumenfeld & Marian (2011)
9; Speech Perception & Word Recognition	Tu 5/26	Naja	HW5 opens; due 6/2	LM: parts of Ch7 and Ch8. See mini syllabus for details
9; Speech Perception & Word Recognition	Th 5/28	Research presentations	DG16 and DG17 due Lab 6 due 6/1	Kraljic & Samuel (2007) Borovsky & Elman (2006)
10; The Neurobiology of Reading	Tu 6/2	Dr. Libby Hubber	DG18 and DG19 due	Dehaene et al (2015) Wandell (2011)***
10; Wrap-up & Review	Th 6/4	Naja	NONE	NONE
11; Final Exam on Canvas	6/12	2:30pm – 4:20pm		

LING 541 Student presentation assignments:

\*\*Please notify me of any scheduling conflicts by Wednesday 4/1 at 11:59 pm. Requests for changes received after this date will not be accommodated\*\*

\*\*\* FOR PAPERS MARKED WITH\*\*\*, ONLY 541 students submit DGs (for 441 students, these DG submissions are optional) \*\*\*

DG1: Dr. Rechele Brooks; Brooks & Meltzoff (2008) – original research

DG2: Dr. Rechele Brooks; Conboy, Brooks, Meltzoff, & Kuhl (2015) – original research

DG3: Kuhl & Rivera-Gaxiola (2008) – summary article - Naja

DG4: Hickok & Poeppel (2007) – summary article - Bryan Thompson

DG5: Pelucchi, Hay, & Saffran (2009) – original research - Vikash Kumar

DG6: Kuhl, Tsao, & Liu (2003) – original research - Naja

DG7: Bergelson & Swingley (2012) – original research - Ella Deaton

DG8: Gillette et al. (1999)\*\*\* – original research - Laura Munger

DG9: Golinkoff et al, 2019 – summary article - Naja

DG10: Dr. Christina Zhao; Zhao & Kuhl (2016) original research

DG11: Dr. Christina Zhao; Hannon & Trehub (2005)\*\*\* original research

DG12: Dr. Amy Pace; TBA

DG13: Dr. Amy Pace; TBA\*\*\*

DG14: Byers-Heinlein et al. (2017) – original research - Daniel Milanovich

DG15: Blumenfeld & Marian (2011) – original research - Saumya Sha

DG16: Kraljic & Samuel (2007)\*\*\* – original research – Naomi Shapiro

DG17: Borovsky & Elman (2006) – original research - Ted Kyoung Kye

DG18: Dr. Libby Huber; Dehaene et al. (2015) - summary article

DG19: Dr. Libby Huber; Wandell. (2011)\*\*\* - summary article