LIN 655 Computational Seminar
Logical Structures in Phonology
Fall 2024 Syllabus

When, where and who

This class is held TTh 09:30-10:50 in the compling lab in the SBS building. Jeffrey Heinz (he/him) is the instructor and his email is jeffrey.heinz@stonybrook.edu.

The course website is https://jeffreyheinz.net/classes/24F/655/

What is this course?

This seminar provides a comprehensive overview of important developments in computational phonology over the past twenty years from my perspective. It is in two parts. The first part covers how logic and model theory can be used to describe and analyze phonology (and its interfaces with morphology and phonetics). The second part will look at learning phonological generalizations and will cover different methods of grammatical inference for learning constraints and transformations. Open questions will be identified and active research discussed.

Course outcomes

Students will learn how

- to express phonological constraints and transformations with logic and model theory;
- to conduct an analysis of a morpho-phonological paradigms using logic and model theory;
- to compare phonological representations using logic and model theory;
- to learn phonological constraints and transformationsfrom examples;
- to identify and understand the limitations of current methods;
- to read, question, present and discuss, research articles on topics related to the seminar;
- to identify important new research questions;
- to exercise their problem-solving and research abilities; and
- to write high quality research papers on topics related to the seminar.

Course materials

There is no required textbook. However, there is a draft of a book tentatively titled "Doing Compuational Phonology" that will serve as a primary text for the class, which will be made available to you.

Assignments

Apart from attending and participating in class and doing all the readings, there are three assignments which will be graded: a short paper, a presentation of a chapter or a research article which includes leading class discussion, and a final paper/project.

If you present more than once, only your highest grade will count.

Students enrolled in 3 credits are obligated to do all 3. Students enrolled in 2 are only obligated for the short paper and presentation. Students enrolled for 1 are only obligated for the short paper.

Grading

I will grade the assignments out of 10 and provide written feedback on each assigment. For students enrolled in 3 credits, the short paper constitutes 30%, the presentation 20%, and the final project 50%, of the total grade. For students taken fewer credits the ratios of the relevant grades will be the same when calculating your total grade.

Doing coursework

It is permitted to talk with your peers about your work, but each assignment must be written up independently. *Copying or collusion on assignments and copying of other people's work in a paper constitute an academic offense.* Any cases of copying or collusion in homeworks or quizzes will be reported to the Academic Judiciary Committee.

Short Paper assigment

For this assignment, you choose a morpho-phonological dataset and provide a written analysis of it using logic and model theory. The chapters in Part 2 of the book provide examples of the kind of work that is expected. It is due on October 11 by 5pm.

Presentation

For this assignment, you choose a chapter from the book or a research article and present it to the class. You prepare and share a handout or slideshow to help guide the presentation. You both raise and answer questions about the reading and lead the class in discussing the work.

Feel free to be creative with your presentation. Be a fierce critic. Ask tough questions. Demand a lot from your audience.

Project Assignment

Using logic and model theory, or what you have learned about learning constraints and transformations, conduct a research project on some aspect of phonology or its interfaces. Turn in a paper describing the research you conducted. Explain what you accomplished, why it was important, what problem it solves or begins to address. The chapters in Part 3 of the book provide examples of the kind of work that is expected, as well as published articles in this area.

Meet with me before November 1 to discuss ideas for your project.

Office Hours

The instructor's office hours will be held Monday from 2-5pm in SBS N237 and by appointment.

Topics Covered and Anticipated Schedule

This schedule may change.

Week	Dates	Topics
01	08/27~29	Intro + Chapter 1
02	09/03~05	Constraints: Chapter 2
03	09/10~12	Transformations:- Chapter 3
04	09/17~19	Examples: Chapters 7,11
05	09/24~26	Presentations: some chapters 8-13
06	10/01~03	Simpler Constraints - Chapter 4
07	10/08~10	Presentations: some chapters 15-18 (constraints)
08	10/17	Presentations: some chapters 15-18 (constraints)
09	10/22~24	Presentations: some chapters 19-22 (transformations)
10	10/29~31	Presentations: some chapters 19-22 (transformations)
11	11/05~07	Presentations: Learning Constraints
12	11/12~14	Presentations: Learning Transformations
13	11/19~21	Presentations: Learning lexicons + phonological grammars
14	11/26	Presentations: some research articles
15	12/03~05	Presentations: some research articles

- Week 11 readings: Chandlee et al. 2019, Payne 2024, Li 2024, Swanson et al. 2024
- Week 12 readings: Chandlee et al. 2014, Jardine et al. 2014, Markowska and Heinz 2023, 2024
- Week 13 readings: Chandlee and Jardine (submitted), Barke et al. 2019, Ellis et al. 2022
- Week 14 readings: TBD
- Week 15 readings: TBD

University Policies and Services

Student Accessibility Support Center Statement

If you have a physical, psychological, medical, or learning disability that may impact your course work, please contact the Student Accessibility Support Center, Stony Brook Union Suite 107, (631) 632-6748, or at sasc@stonybrook.edu. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential.

Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and the Student Accessibility Support Center. For procedures and information go to the following website: https://ehs.stonybrook.edu/programs/fire-safety/emergency-evacuation/evacuation-guide-disabilities and search Fire Safety and Evacuation and Disabilities.

Academic Integrity Statement

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at http://www.stonybrook.edu/commcms/academic_integrity/index.html

Critical Incident Management

Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Student Conduct and Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.