

CSC 485/2501: Introduction to Computational Linguistics  
Course Information

**Instructor:** Gerald Penn  
CSC485H1F LEC0101 MF 10–11 MP 134  
W 10–11 MP 137  
Lectures: CSC485H1F LEC0201 MWF 12–1 ES B149  
CSC485H1F LEC2001 MF 10–11 MP 134  
W 10–11 MP 137  
CSC2501HF LEC0101 MWF 12–1 ES B149  
(Note: some lecture days will be used for tutorials)  
Office: TBA  
Tel: (416)978-7390  
Office Hours: MW 11–12, or by appointment  
Email: gpenn@teach.cs.utoronto.ca

	Name	Assignment
<b>Teaching Assistants:</b>	Zhewei Sun	1
	Jinman Zhao	2
	TBA	3

**Textbooks:**

- Required Jurafsky, Daniel, and Martin, James H. *Speech and Language Processing, 2nd edition*, Pearson Prentice-Hall, 2009. Available in paper and e-book rental versions (for the latter, go to [VitalSource.com](http://VitalSource.com) and search for *Jurafsky*). We'll also be referring to the draft 3rd edition: <https://web.stanford.edu/~jurafsky/slp3/>. See also the errata list for the 2nd edition on the course webpage.
- Required Bird, Steven; Klein, Ewan; and Loper, Edward. *Natural Language Processing with Python*, O'Reilly, 2009. Free (in HTML) with online extras at [www.nltk.org/book](http://www.nltk.org/book).
- Recommended Mertz, David. *Text Processing in Python*. Addison-Wesley, 2003. Free ASCII version at [Gnosis.cx/TPiP](http://Gnosis.cx/TPiP).
- Optional Allen, James. *Natural Language Understanding*, 2nd edition. Benjamin/Cummings, 1994.
- Recommended Martelli, Ravenscroft and Holden. *Python in a Nutshell*, 4th ed., O'Reilly, 2023.

**Course Web Page:** <http://www.cs.toronto.edu/~gpenn/csc485/>

**Evaluation:** For undergraduates registered in CSC 485, there will be three homework assignments worth 30% of your final mark each. Those registered for CSC 2501 must complete the three homework assignments (25% each), as well as five essays on assigned research papers ( $5 \times 3 = 15\%$ ). Small one-question quizzes (1/3 of a mark each) make up the remaining 10% of your final mark. Class attendance on the same day is required for quiz credit. There is no final examination for either course code.

- *No late homeworks will be accepted, except in case of documented medical or other emergencies.*

**Policy on collaboration:** Collaboration on and discussion of quiz content is encouraged. No collaboration on homeworks or essays is permitted. The work you submit must be your own. No student is permitted to discuss or share homeworks with any other student from either this or previous years unless the instructor or TAs make the solutions publicly available.

Failure to observe this policy is an academic offense, carrying a penalty ranging from a zero on the homework to suspension from the university.

**Course Goals:** This course is an introduction to a statistical and computational characterization of natural language. You will also have the chance to practice programming in Python.

**Prerequisites:** For undergraduates, STA247H1/STA255H1/STA257H1 and CSC209H1, but CSC324H1/CSC330H1/CSC384H1 is strongly recommended. Engineering students may substitute APS105H1/ APS106H1/ ESC180H1/ CSC180H1 for the CSC 209 requirement, although experience with the Unix operating system is strongly recommended, and/or ECE302H1/ STA286H1/ CHE223H1/ CME263H1/ MIE231H1/ MIE236H1/ MSE238H1/ ECE286H1 for the statistics requirement. Note that the University's automatic registration system checks for prerequisites: even if you have registered for the class, you will be dropped from it unless you had satisfied the prerequisite before you registered or you had received a prerequisite waiver. For advice, contact the Undergraduate Office on the fourth floor of the Bahen Centre or the instructor.

**Newsgroup:** The course newsgroup is on the web at <https://piazza.com/utoronto.ca/fall12023/csc4852501>. Your teaching assistants will be monitoring it.

**Course Calendar:**

Fri, 8 September	First lecture
Mon, 18 September	Essay 1 due (CSC 2501)
Wed, 20 September	Last day to add course (CSC 485/2501)
Fri, 29 September	Essay 2 due (CSC 2501)
Fri, 6 October	Assignment 1 due
Mon, 9 October	Thanksgiving holiday
Fri, 13 October	Essay 3 due (CSC 2501)
Fri, 27 October	Essay 4 due (CSC 2501)
Fri, 3 November	Assignment 2 due
6–10 November	Reading Week — no lectures or tutorial
Mon, 6 November	Last day to drop course (CSC 485/2501)
Fri, 24 November	Essay 5 due (CSC 2501)
Thu, 7 December	Last lecture
Thu, 7 December	Assignment 3 due

*Tentative Syllabus*<sup>1</sup>:

<b>Date</b>	<b>Topic</b>	<b>Advance reading*</b>
8–15 Sept	Intro to CL	<b>RP</b> ; J&M: 1; BK&L: 1, 2.3, 4 <i>as necessary</i>
15–22 Sept	Grammars and parsing	<b>RP</b> ; J&M: 5.0–1, 12.0–12.3.3, 12.3.7, 13.1–2; BK&L: 8.0–8.4
25–29 Sept	Lexical semantics	J&M: 19.1–4, 20.8
2–6 Oct	Word sense disambiguation	<b>RP</b> ; J&M: 20.1–5
6–13 Oct	Language Modelling	
16–18 Oct	Chart parsing	J&M: 13.3–4; A: 3.4, 3.6; BK&L: 8.4 and online extras section 8.2 on chart parsing
19 Oct	Ambiguity Resolution	
23–27 Oct	Typed Feature Structures	<b>RP</b> ; J&M: 12.3.4–6, 15.0–3; A: 4.1–5; BK&L: 9
30 Oct–3 Nov	Attachment Disambiguation	
13–17 Nov	Stochastic Grammars	<b>RP</b> ; J&M: 5.2–5.5.2, 5.6, 12.4, 14.0–1, 14.3–7
20–22 Nov	Categorial Grammars	
22–24 Nov	Supertagging	
27–29 Nov	Dependency Graphs	
1–4 Dec	Question Answering	
6 Dec	Anaphora resolution	J&M: 21.0, 21.2–8
7 Dec	Parsing for FWO Languages	

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<sup>1</sup>\*J&M = Jurafsky and Martin; BK&L = Bird, Klein, and Loper; A = Allen; **RP** = research paper distributed on-line; *italics indicates optional additional reading.*