COMPUTATIONAL LINGUISTICS CERTIFICATE

Computational linguistics is an increasingly important skill area as companies such as IBM, Apple, Facebook, Google, Intel, Lionbridge, Microsoft, Oracle and many others seek employees who can develop products that employ machine algorithms to interface with human language. Crucially, computational linguistics is at the nexus of computer science, information science, and linguistics: the skills and expertise most sought by companies that hire people with training in computational linguistics or natural language processing is generally not attainable within a purely computer/information science or purely linguistics program.

This program provides students who wish to work in the areas of machine translation, machine learning, speech-to-text software, natural language processing, natural language generation, and artificial intelligence with an understanding of human language structure and the skills of linguistic analysis as well as the computational tools to develop software applications to parse and generate human language.

The Certificate in Computational Linguistics is available to currently enrolled graduate students in Linguistics, Computer Science, or Information Science, and in related areas (e.g., Speech and Hearing Sciences, Communication, Statistics, Digital Curation and Management, among others). In addition, this program is available to non-degree-seeking students who have appropriate background.

Course Requirements

Code	Title	Hours
Core Courses		
LING 401	Introduction to Computational Linguistics	3
Electives		
A total of 9 credit hours of electives are required. Please choose from the linguistics and/or computer science/information science elective course options below.		9
Minimum Hours [1]		**12**

[1] If the student is already a graduate student in Linguistics, Information and Library Science, or Computer Science, the three electives that satisfy the Certificate must be taken in one or more departments outside their home department. If the student is a non-degree-seeking student, the three courses will be determined in consultation with the student's primary advisor, with the goal of supplementing prior training.

Code	Title	Hours
Linguistics Electives		
COMP 455	Models of Languages and Computation	3
COMP 486/ INLS 512	Applications of Natural Language Processing	3
COMP 562	Introduction to Machine Learning [H]	3
COMP 586	Natural Language Processing	3
COMP 590	Topics in Computer Science (NLP focus only) [H]	3
COMP 790	Topics in Computer Science (Introduction to Textual Data Analysis)	3
INLS 509	Information Retrieval	3
INLS 613	Text Mining	3
INLS 690	Intermediate Selected Topics (INLS 690.270 Data Mining: Methods and Applications)	3
LING 460	Making Sense of Big Data: Textual Analysis with R	3
STOR 565	Machine Learning	3
Computer Science / Information Science Electives		
LING 427	Morphology	3
LING 460	Making Sense of Big Data: Textual Analysis with R	3
LING 520	Linguistic Phonetics	3
LING 523	Phonological Theory I	3
LING 528	Language Acquisition I	3
LING 530	Syntactic Theory I	3
LING 537	Semantic Theory I	3
LING 540	Mathematical Linguistics	3

[H] Honors version available. An honors course fulfills the same requirements as the nonhonors version of that course. Enrollment and GPA restrictions may apply.

Non-Course Certificate Requirements

- Students are required to participate in a monthly brown bag seminar that features paper discussions and talks by computational linguists from academia and industry.
- Students are expected to engage in the life of the departments involved in this Certificate, attending as many talks, colloquia, and lab group meetings as are relevant to the student's primary areas of interest and which align with the student's career goals.