The Graduate Certificate in Computational Linguistics provides students with a basic education in the interdisciplinary field of computational linguistics. Computational linguists develop tools that support the interface of the person with the computer, in applications like blogs and diaries, citizen journalism and social interactions, web search and online booking systems, smart library catalogs, and the learning of foreign languages, spoken language interaction and knowledge discovery. They do this working for companies like Google, IBM, Yahoo!, MITRE, Microsoft and Amazon as well as for various governmental organizations both military and civilian.

The program enables students to understand core algorithms and data structures in CL, understand both symbolic and statistical methods and their appropriate use in applications. Applications include automatic text summarization, machine translation, named entity recognition (determining which items in a text map to proper names and what the type of each such name is –person, location, organization, etc.), natural language generation (converting information from computer databases into readable human language), natural language understanding (converting chunks of text into more formal representations that are easier for computer programs to manipulate), question answering (determining an answer, given a human language question), speech recognition, and text-to-speech synthesis, among many others.

The program is the only one of its kind in the state of New Jersey. It is unusual in that it places equal emphasis on basic computer science skills and on the techniques and methods of linguistics, giving students a solid background for the job market.

Program Requirements

Core Courses
- APLN 550 Computational Linguistics 3
- APLN 552 Current Issues in Natural Language Processing 3
- APLN 553 Text Analysis Tools 3

Additional Courses
Based on academic background, select one of the following: 9-12

Linguistics Background
- CSIT 501 Computer Science Foundations I
- CSIT 503 Computer Science Foundations III
- CSIT 504 Computer Science Foundations IV

Computer Science Background
- APLN 500 Language and Linguistics
- APLN 504 Syntax
  or APLN 524 Advanced Structure of American English

Select one of the following:
- APLN 502 Sociolinguistics
- APLN 504 Syntax
- APLN 505 Semantics and Pragmatics
- APLN 506 Phonetics and Phonology
- APLN 510 Discourse Analysis
- APLN 520 Current Theories of Second Language Acquisition

Total Credits 18-21