LNGS - Linguistics | Undergrad

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Global Citizenship Program Knowledge Areas
(bolded code)

- **ARTS**: Arts Appreciation
- **GLBL**: Global Understanding
- **PNW**: Physical & Natural World
- **QL**: Quantitative Literacy
- **ROC**: Roots of Cultures
- **SSHB**: Social Systems & Human Behavior

Global Citizenship Program Skill Areas
(not bolded code)

- CRI: Critical Thinking
- ETH: Ethical Reasoning
- INTC: Intercultural Competence
- OCOM: Oral Communication
- WCOM: Written Communication
- ** Course fulfills two skill areas

Course Descriptions

LNGS 2000 Human Language and Technology (3)

This course introduces students to the interdisciplinary field of human language technology (HLT), which encompasses linguistics, computer science, psychology, philosophy, mathematics, and statistics. Throughout the semester, students will examine the technologies that humans have developed to improve that most human of attributes: communication. The course provides an overview of basic foundations and applications of human language technology, such as morphological, syntactic, semantic, and pragmatic processing, automatic speech recognition, speech synthesis and automatic translation. Students will consider how these are connected to human speech systems and will learn about basic Python toolkits used in this field. Beyond the technical understanding, students will engage with theoretical questions around human and machine interactions. What constitutes a language, communication, intelligence? How does technology expand or limit our communicative and expressive potential? In what ways do these technologies shape our societies?

LNGS 3000 Linguistic Foundations for Natural Language Processing (3)

This course explores how technology is used to represent, process and organize human language. Students learn the foundational linguistic concepts: syntax and grammar parsing, semantic analysis, and discourse analysis. They then examine how modern technologies such as autocorrect, speech synthesis, speech recognition, machine translation and chatbots replicate these linguistic elements. The course introduces students to basic tools for manipulating speech data and key methodologies in speech and natural language processing (NLP). They also consider some of the cognitive and neural mechanisms of human language that are the most difficult for natural language processors to reproduce. Finally, the course confronts social and ethical implications of language technologies, concerning, for example, questions of privacy, accountability around machine intelligence, and the compounding of biases. Some familiarity with Python is recommended but not required. **Prerequisite**: 3 credits in the study of another language (ex. FREN, SPAN, or JAPN 1090) or in linguistics (ex. ENGL 2600 or 4190).