

# LINGUISTICS (LING)

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## LING 0001 Introduction to Linguistics

A general introduction to the nature, history and use of human language, speech and writing. Topics include the biological basis of human language, and analogous systems in other creatures; relations to cognition, communication, and social organization; sounds, forms and meanings in the world's languages; the reconstruction of linguistic history and the family tree of languages; dialect variation and language standardization; language and gender; language learning by children and adults; the neurology of language and language disorders; the nature and history of writing systems. Intended for any undergraduate interested in language or its use, this course is also recommended as an introduction for students who plan to major in linguistics.

Fall or Spring

1 Course Unit

## LING 0051 Proto-Indo European Language and Society

Most of the languages now spoken in Europe, along with some languages of Iran, India and central Asia, are thought to be descended from a single language known as Proto-Indo-European, spoken at least six thousand years ago, probably in a region extending from north of the Black Sea in modern Ukraine east through southern Russia. Speakers of Proto-Indo-European eventually populated Europe in the Bronze Age, and their societies formed the basis of the classical civilizations of Greece and Rome, as well as of the Celtic, Germanic and Slavic speaking peoples. What were the Proto-Indo-Europeans like? What did they believe about the world and their gods? How do we know? Reconstruction of the Proto-Indo-European language, one of the triumphs of comparative and historical linguistics in the 19th and 20th centuries, allows us a glimpse into the society of this prehistoric people. In this seminar students will, through comparison of modern and ancient languages, learn the basis of this reconstruction – the comparative method of historical linguistics – as well as explore the culture and society of the Proto-Indo-Europeans and their immediate descendants. In addition, we will examine the pseudo-scientific basis of the myth of Aryan supremacy, and study the contributions of archaeological findings in determining the "homeland" of the Indo-Europeans. No prior knowledge of any particular language is necessary. This seminar should be of interest to students considering a major in linguistics, anthropology and archaeology, ancient history or comparative religion. (Also fulfills Cross-Cultural Analysis.)

Not Offered Every Year

1 Course Unit

## LING 0054 Bilingualism in History

This course introduces the foundations of linguistics - the scientific study of language - through exploration of multilingualism in the USA and in different societies around the world. Contacts between groups of people speaking different languages are documented from earliest records, and around the world it remains the norm to find more than one language in regular use in a single community. In this course we will see that multilingualism is a catalyst for linguistic change: sometimes languages are lost; sometimes new languages are created; sometimes the structure of a language is radically altered. We will consider: Which parts of linguistic structure are most susceptible to change under conditions of bilingualism? Does language contact - whether a result of trade, education, migration, conquest, or intermarriage - influence language structure in predictable ways? How do individual speakers handle multiple languages? How have attitudes to speakers of multiple languages changed through history? How have socio-historical events shaped the linguistic situation in the USA?

Not Offered Every Year

1 Course Unit

## LING 0060 Language and Social Identity

Language is an important part of both human cognition as well as social organization. Our identities, our societies, and our cultures are all informed by and how we use language. Language interacts with the social, political and economic power structures in crucial ways. This course will focus on the ways in which language and the social facts of life are dependent upon each other. In this course, we will examine issues related to class, race, gender, culture and identity, as well as how language exists to both challenge and uphold systems of power.

Fall

1 Course Unit

## LING 0130 Introduction to Language: Language Structure and Verbal Art

The purpose of this course is to explore the relationship between linguistic structure and the use of language for artistic purposes. The syllabus is organized as a sequence of units, each built around a particular theme. These include the sound structure of poetry (meter, rhyme, and other linguistic patterns in *Jabberwocky*, the *Odyssey*, Shakespeare, the *Troubadours*, and others); how precise linguistic data can be used to solve an outstanding literary problem (determining the approximate date when *Beowulf* was composed); and the structure of folktales of various cultures and of narratives of everyday experience.

Fall

1 Course Unit

## LING 0150 Writing Systems

The historical origin of writing in Sumer, Egypt, China, and Mesoamerica; the transmission of writing across languages and cultures, including the route from Phoenician to Greek to Etruscan to Latin to English; the development of individual writing systems over time; the traditional classification of written symbols (ideographic, logographic, syllabic, alphabetic); methods of decipherment; differences between spoken and written language; how linguistic structure influences writing, and is reflected by it; social and political aspects of writing; literacy and the acquisition of writing.

Fall

1 Course Unit

**LING 0500 Introduction to Formal Linguistics**

In this course, we study formal mathematical tools for the analysis of language that help us understand and classify the complex structures and rules that constitute language and grammar. These tools include set theory, formal language and automata theory, as well as aspects of logic, and will be applied to the syntax and semantics of natural language. In addition to learning something about formal tools for analyzing language, this will also enhance your general skills in analytical reasoning.

Spring

1 Course Unit

**LING 0600 Introduction to Sociolinguistics**

Human language viewed from a social and historical perspective.

Students will acquire the tools of linguistic analysis through interactive computer programs, covering phonetics, phonology and morphology, in English and other languages. These techniques will then be used to trace social differences in the use of language, and changing patterns of social stratification. The course will focus on linguistic changes in progress in American society, in both mainstream and minority communities, and the social problems associated with them. Students will engage in field projects to search for the social correlates of linguistic behavior, and use quantitative methods to analyze the results.

Spring

1 Course Unit

**LING 0650 Talkin' Black: Language, Power & Identity**

Soda, pop, or cokes? Buggy or shopping cart? Y'all, Y'alls, y'all'd've, y'all'd've'f'l'd've? Do you talk black, speak Appalachian - maybe both? Is your vernacular spectacular? Does anyone talk 'normal'? What does your accent say about you? We use language every day, but don't always take the time to stop and talk about the language we use. Language can both be a powerful tool for communication, and also a means to mock and disempower the 'other' (such as using the Southern accent to portray stereotypes). It can be used to draw people in (I'm lookin at you, brotha, sista) and dividing (you ain't from around here, are ya?) And, even if we share the exact same language - or think we do - miscommunications still seem to abound. This course will bring a sociolinguistic perspective to language: how we use it, how we speak and write multiple versions of the same language, and how it reflects our identities, particularly with regards to race, class, gender, and regional backgrounds. We will explore deep questions of language as a medium of communication with consequences and impact in political, social, and personal realms. In addition to producing a research paper, we will also explore codeswitching and codemeshing techniques. This course, open to majors and non-majors, will explore language in social interactions, both as a means for humans to inflict power, but also as a site for deploying resistance. Language, at the intersections of power and identity, is not neutral. This sociolinguistic course will apply linguistic principles to literary forms, to explore how Black novelists such as Toni Morrison, James Baldwin, Ken Saro-Wiwa, M. NourbeSe Philip, bell hooks, and others, incorporate their voices across the Black diaspora to explore the ways that Black voices are expressed - or silenced - when accounting for agency and power relations

Spring

1 Course Unit

**LING 0700 Data Science for studying Language and the Mind**

Data Science for studying Language and the Mind is an entry-level course designed to teach basic principles of data science to students with little or no background in statistics or computer science. Students will learn to identify patterns in data using visualizations and descriptive statistics; make predictions from data using machine learning and optimization; and quantify the certainty of their predictions using statistical models. This course aims to help students build a foundation of critical thinking and computational skills that will allow them to work with data in all fields related to the study of the mind (e.g. linguistics, psychology, philosophy, cognitive science).

Fall

Also Offered As: PSYC 2314

1 Course Unit

**LING 0750 Language and Thought**

This course describes current theorizing on how the human mind achieves high-level cognitive processes such as using language, thinking, and reasoning. The course discusses issues such as whether the language ability is unique to humans, whether there is a critical period to the acquisition of a language, the nature of conceptual knowledge, how people perform deductive reasoning and induction, and how linguistic and conceptual knowledge interact.

Fall or Spring

Also Offered As: PSYC 1310

Prerequisite: PSYC 0001 OR COGS 1001

1 Course Unit

**LING 1005 Introduction to Cognitive Science**

How do minds work? This course surveys a wide range of answers to this question from disciplines ranging from philosophy to neuroscience. The course devotes special attention to the use of simple computational and mathematical models. Topics include perception, learning, memory, decision making, emotion and consciousness. The course shows how the different views from the parent disciplines interact and identifies some common themes among the theories that have been proposed. The course pays particular attention to the distinctive role of computation in such theories and provides an introduction to some of the main directions of current research in the field. It is a requirement for the BA in Cognitive Science, the BAS in Computer and Cognitive Science, and the minor in Cognitive Science, and it is recommended for students taking the dual degree in Computer and Cognitive Science.

Fall

Also Offered As: CIS 1400, COGS 1001, PHIL 1840, PSYC 1333

1 Course Unit

**LING 1100 The History of Words**

It is sometimes said that every word has its own history. But there are also general factors affecting how words change over time. In this course, we explore both aspects of the history of words. On the one hand, we explore the ways in which the saying is true, by investigating taboo words, euphemisms, shibboleths, doublets, folk etymology, idioms, paradigm gaps, reanalysis, and other word-specific processes. On the other hand, we discuss the general factors, such as regular sound change (for instance, the Great Vowel Shift), word frequency, and others, as time and interest permit.

Spring, even numbered years only

1 Course Unit

**LING 1500 The Keys to Language Structure (and How to Use Them)**

The purpose of this course is to introduce students to the basic concepts of sentence structure in a "pretheoretical" framework, demonstrating that any natural human language must have certain structures and must choose the rest from a restricted universal set. The textbook, which was written for this course, discusses each set of structures with examples from six languages: English, Spanish, Latin, Biblical Hebrew, Mandarin, and Navajo. The instructor will add languages from among those with which the students are familiar, within the limits of his competence. This course will help students not only to learn foreign languages, but also to improve their own writing skills, by making the structures that they must use more explicit and intelligible.

Fall, even numbered years only

1 Course Unit

**LING 1700 Experimental Approaches to the Study of Language**

Controlled experiments are a key element of empirical research, and they play an increasingly important role in the study of language and communication. This course will be divided into two halves. In the first half, students will be introduced to the fundamentals of how to conduct an experiment, along with a basic introduction to statistical methods. The emphasis will be on understanding the basic logic of experimental design, but special lectures will focus on the application of particular methods to the study of language. In the second half, classes will become more like lab meetings as students develop their own experimental projects from the ground up. At the end of the semester they will write up these projects as papers.

Not Offered Every Year

1 Course Unit

**LING 1720 Language, Cognition and Culture**

This is a course on how language relates to other cognitive systems. We will discuss the question of whether and how the language one speaks affects the way one thinks, the relation between words and concepts, the link between language acquisition and conceptual development in children, and the potential role of language in shaping uniquely human concepts. The course incorporates cross-linguistic, cross-cultural and developmental perspectives and combines readings from linguistics, psychology, philosophy, neuroscience and other fields within cognitive science.

Fall

1 Course Unit

**LING 1750 Psychology of Language**

This course describes the nature of human language, how it is used to speak and comprehend, and how it is learned. The course raises and discusses issues such as whether language ability is innate and unique to humans, whether there is a critical period for the acquisition of a language, and how linguistic and conceptual knowledge interact.

Fall or Spring

Also Offered As: PSYC 2310

Prerequisite: PSYC 1310 OR LING 0001

1 Course Unit

**LING 2041 Language in Native America**

This course is an introduction to linguistic perspectives on the languages native to the Americas (their nature and distribution, typological similarities and differences), with an emphasis on North America. The diverse languages of this region will be examined from the point of view of particular linguistic phenomena, such as phonology, morphology, and syntax; and in addition we will study their historical development and their place in culture, society, and thought.

Not Offered Every Year

1 Course Unit

**LING 2042 Construct a Language**

In this course, students construct their own language, one that is compatible with what is known about possible human languages. To this end, the course investigates language typology through lectures and examination of grammars of unfamiliar languages. Topics include language universals, points of choice in a fixed decision space, and dependencies among choices.

Not Offered Every Year

1 Course Unit

**LING 2047 Structure of American Sign Language**

This course covers the linguistic structure of American Sign Language (ASL), including its phonology (articulatory features, phonological constraints, nonmanuals), morphology (morphological constraints, compounds, incorporation, borrowing), and syntax (syntactic categories, basic phrase structure, common sentence types). Also discussed are the topics of classifiers and deixis. In keeping with the comparative perspective of linguistic theory, parallels and differences between ASL and other (primarily spoken) languages are pointed out where appropriate. Historical and sociolinguistic issues are addressed where they are relevant to elucidating linguistic structure. Though the course focuses on ASL, it necessarily touches on issues concerning sign languages more generally, notably the possible effects of modality (sign vs. speech) on linguistic structure and the implications of the signed modality for general linguistics. Although the course does not presuppose knowledge of ASL, it does require acquaintance with basic concepts of linguistics.

Not Offered Every Year

Also Offered As: ASLD 2047

Prerequisite: LING 0001

1 Course Unit

**LING 2100 Introduction to Language Change**

This course covers the principles of language change and the methods of historical linguistics on an elementary level. The systematic regularity of change, the reasons for that regularity, and the exploitation of regularity in linguistic reconstruction are especially emphasized. Examples are drawn from a wide variety of languages, both familiar and unfamiliar. The prerequisite for the course is any course in phonetics or phonology, or Ling 001, or permission of the instructor. Note that this course does NOT satisfy any sector requirement.

Not Offered Every Year

Prerequisite: LING 0001

1 Course Unit

**LING 2170 Origins and Evolution of Language**

While communication is abundant throughout the living world, the human system we call language seems to stand out. Indeed, if humans themselves can be said to stand out among other species on Earth, it may well be language that played the crucial role in getting us here. So where does language come from? This question has been dubbed the hardest problem in science, but the last three decades have seen a notable renaissance in scientific attempts to answer it. This seminar will examine both the results of this multidisciplinary endeavor and the tools that have been employed in it. It will involve discussions of the nature of language and its place among other communication systems and will touch on fundamental questions of what it means to be human.

Not Offered Every Year

1 Course Unit

**LING 2190 Language games and cultural evolution**

This is a course about how language and communication can be thought of as games. When people use language to communicate, they are following rules to perform actions that have an effect on the world, including other people. These actions might achieve goals, and they might prompt further actions, and so on. Perhaps more interestingly, these linguistic actions can, over time, lead to changes in the environment and even the rules of the game itself. In other words, the playing field changes dynamically as a result of the actions performed on it. This way of looking at language is not new, and this is also a course about how thinking about language this way can inspire (and has inspired) formal models and laboratory experiments that help us to understand how language works and how it evolves. In covering this we will also touch on how the same approach has shed light on cultural evolution beyond language and communication alone.

Fall

1 Course Unit

**LING 2210 Phonetics I: Experimental**

This course focuses on experimental investigations of speech sounds. General contents include: the fundamentals of speech production and perception; speech analysis tools and techniques; and topics in phonetic studies. The course consists of integrated lectures and laboratory sessions in which students learn computer techniques for analyzing digital recordings.

1 Course Unit

**LING 2220 Phonetics II: Data Science**

This is a methodology course, which focuses on how to conduct phonetics research using very large speech corpora. Topics include scripting and statistical techniques, automatic phonetic analysis, integration of speech technology in phonetics studies, variation and invariability in large speech corpora, and revisiting classic phonetic and phonological problems from the perspective of corpus phonetics.

Spring

Prerequisite: LING 5210 AND LING 2200

1 Course Unit

**LING 2250 Computer Analysis and Modeling of Biological Signals and Systems**

A hands-on signal and image processing course for non-EE graduate students needing these skills. We will go through all the fundamentals of signal and image processing using computer exercises developed in MATLAB. Examples will be drawn from speech analysis and synthesis, computer vision, and biological modeling.

Spring

Mutually Exclusive: LING 5250

1 Course Unit

**LING 2300 Sound Structure of Language**

An introduction to phonetics and phonology. Topics include articulatory phonetics (the anatomy of the vocal tract; how speech sounds are produced); transcription (conventions for representing the sounds of the world's languages); classification (how speech sounds are classified and represented cognitively through distinctive features); phonology (the grammar of speech sounds in various languages: their patterning and interaction) and syllable structure and its role in phonology.

Spring

Prerequisite: LING 0001 OR COGS 1001 OR LING 220

1 Course Unit

**LING 2500 Introduction to Syntax**

This course is an introduction to current syntactic theory, covering the principles that govern phrase structure (the composition of phrases and sentences), movement (dependencies between syntactic constituents), and binding (the interpretation of different types of noun phrases). Although much of the evidence discussed in the class will come from English, evidence from other languages will also play an important role, in keeping with the comparative and universalist perspective of modern syntactic theory.

Fall

Mutually Exclusive: LING 5500

1 Course Unit

**LING 2700 Language Acquisition**

An introduction to language acquisition in children and the development of related cognitive and perceptual systems. Topics include the nature of speech perception and the specialization to the native language; the structure and acquisition of words; children's phonology; the development of grammar; bilingualism and second language acquisition; language learning impairments; the biological basis of language acquisition; the role in language learning in language change. Intended for any undergraduate interested in the psychology and development of language.

Not Offered Every Year

1 Course Unit

**LING 2980 Transfer or Credit Away Free Elective**

Course number for use in XCAT

1 Course Unit

**LING 3020 Linguistic Field Methods**

Instruction and practice in primary linguistic research, producing a grammatical sketch and a lexicon through work with a native-speaker consultant and some reference materials. Consultant work is shared with LING 502.

Not Offered Every Year

Prerequisite: LING 2300 AND LING 2500

1 Course Unit

**LING 3090 Language and Computation**

The computational study of natural language and its implications for linguistic theories. Topics include finite state tools, computational morphology and phonology, grammar and parsing, computational models of language learning in children and machines.

Not Offered Every Year

1 Course Unit

**LING 3100 History of the English Language**

This course traces the linguistic history of English from its earliest reconstructable ancestor, Proto-Indo-European, to the present. We focus especially on significant large-scale changes, such as the restructuring of the verb system in Proto-Germanic, the intricate interaction of sound changes in the immediate prehistory of Old English, syntactic change in Middle English, and the diversification of English dialects since 1750.

Not Offered Every Year

1 Course Unit

**LING 3110 Old English I**

The main purpose of this course is to teach students to read Old English ("Anglo-Saxon"), chiefly but not exclusively for research in linguistics. Grammar will be heavily emphasized; there will also be lectures on the immediate prehistory of the language, since the morphology of Old English was made unusually complex by interacting sound changes. In the first eight weeks we will work through Moore and Knott's "Elements of Grammar" and learn the grammar; the remainder of the term will be devoted to reading texts.

Not Offered Every Year

1 Course Unit

**LING 3410 Morphology I**

This course will explore some issues concerning the internal structure of words. After a brief introduction to some basic terms and concepts, we will discuss the interaction of morphology with phonology. We will look both at how morphology conditions phonological rules and how phonology conditions morphology. Then we will turn to the interaction of syntax and morphology. We will look at some problems raised by inflectional morphology, clitics and compounds. The main requirement for the class will be a series of homework exercises in morphological analysis and a short paper at the end of the semester.

Not Offered Every Year

1 Course Unit

**LING 3420 Morphology II**

This course takes a detailed look at a number of central topics in morphological theory. The material examined in the course consists of primary readings and reviews, covering a number of central topics in the field. These topics include (but are not restricted to) allomorphy, blocking, the interface of phonology and morphology, syncretism, affixation, the syntax-morphology interface, and compounding. The primary requirements for the class involve short assignments that are based on the readings, in the form of both problem sets and critical appraisals of core theoretical positions. In addition to this, students will write a short paper at the end of the semester.

Not Offered Every Year

Prerequisite: LING 3410

1 Course Unit

**LING 3640 Experimental Sociolinguistics**

How do people form social impressions of others based on subtle patterns in their linguistic behavior? How do people shape their use of language to adapt to different social contexts and reflect their own identities? And what kinds of cognitive processes allow people to learn and use these sociolinguistic skills? Sociolinguists are increasingly turning to experimental methods to answer these exciting but complex questions. In this class, students will gain an up-to-date familiarity with major results in the experimental sociolinguistics literature, an awareness of the wide range of methods for sociolinguistic experimentation, and hands-on experience with the tools needed to create sociolinguistic experiments.

Fall, even numbered years only

Mutually Exclusive: LING 5640

Prerequisite: LING 0600 OR LING 0060

1 Course Unit

**LING 3650 Sociophonetics**

This course will build on students' existing knowledge of sociolinguistic variation and phonetics to allow them to explore differences in the perception and production of different language and language varieties. In this course, students will learn the primary skills of sociophonetic analysis, including learning to design their own perception and production studies. Students will also gain experience with methods in sociophonetics and common tools for analysis such as ELAN, Praat, FAVE and R. The course is open to graduate and undergraduate students, but all students will have the opportunity to conduct an independent sociophonetic research project.

Mutually Exclusive: LING 5650

Prerequisite: LING 0600 OR LING 2200

1 Course Unit

**LING 3740 Neurolinguistics**

This course is an upper level undergraduate/graduate seminar in neurolinguistics. We will explore language in the brain through readings and discussions.

1 Course Unit

**LING 3750 Psycholinguistics Seminar**

This course examines how people use language. We will focus on Herb H. Clark's book "Using Language" (1996). In this book, Clark proposes that language use is a form of joint action, and extensively develop what this claim entails and how it accounts for people's linguistic behavior. The course will consist of a detailed examination of Clark's thesis.

Also Offered As: PSYC 3310

Prerequisite: PSYC 1310 OR PSYC 2310 OR LING 0001

1 Course Unit

**LING 3810 Semantics I**

This course provides an introduction to formal semantics for natural language. The main aim is to develop a semantic system that provides a compositional interpretation of natural language sentences. We discuss various of the aspects central to meaning composition, including function application, modification, quantification, and binding, as well as issues in the syntax-semantics interface. The basic formal tools relevant for semantic analysis, including set theory, propositional logic, and predicate logic are also introduced.

Fall

Mutually Exclusive: LING 5810

Prerequisite: LING 2500

1 Course Unit

**LING 3850 Experiments in the Study of Meaning**

This course provides an introduction to the experimental study of meaning in natural language. We begin by introducing some basic notions of formal semantics and pragmatics and review relevant technical background. Next we discuss recent developments in studying meaning-related phenomena experimentally, which, in addition to theoretical questions, involve issues in the acquisition and processing of semantic information. In the course of this, we will also introduce the basics of experimental design and relevant psycholinguistic methodology. In addition to readings and homework assignments, students will embark on a small research project (individually or jointly), which will be presented in class at the end of the semester and written up as a term paper.

Not Offered Every Year

Prerequisite: LING 0500 OR LING 1700 OR LING 2500 OR LING 3810 OR

LING 5810 OR LING 5510

1 Course Unit



**LING 3860 Experiments in the Study of Meaning II**

This course continues the introduction to Experiments in the study of meaning in natural language from LING 455. A large focus will be practical aspects of designing and implementing experiments, while covering a range of current topics from the experimental semantics and pragmatics literature (and exploring new avenues) along the way, e.g., pronouns and definite reference, presuppositions, quantifiers and domain restriction, generics. We'll start with some basic aspects of experimental design, including counter-balancing, controlling for confounds, utilizing fillers, as well as a range of key experimental task paradigms, such as simple truth-value judgments and picture sentence matching, acceptability ratings, reading time studies, and visual world eye tracking. For implementation, we will introduce the PCIBEX platform at <https://farm.pcibex.net> and its relevant functionalities. Students will select a topic area, either individually or in small groups, and start from a survey article or recent journal paper to familiarize themselves with current issues. Next, they will formulate their own question, decide on a suitable task paradigm, and begin fleshing out a full experiment implementation, with the goal of collecting data at the end of the semester (if at all possible). The project will then be written up in a term paper. This provides students with the opportunity to engage in a scientific investigation of their own early on in their career in a domain that is easily accessible and yet central to the general enterprise of the cognitive sciences.

Spring

1 Course Unit

**LING 3999 Independent Study in Linguistics**

An independent study for majors in linguistics.

Fall or Spring

1 Course Unit

**LING 4000 Tutorial in Linguistics**

This tutorial allows students to deal in a concentrated manner with selected major topics in linguistics by means of extensive readings and research. Two topics are studied during the semester, exposing students to a range of sophisticated linguistic questions.

Fall

1 Course Unit

**LING 4098 Senior Thesis**

Credit for working on a Senior Thesis with a faculty advisor

Fall or Spring

1 Course Unit

**LING 5000 Research Workshop**

This course is intended for advanced graduate students who are interested in developing a research paper. Each student will present his or her topic several times during the semester as the analysis develops, with feedback from the instructor and other students to improve the organization and content of the analysis. The goal is an end product appropriate for delivery at a national conference or submission to a journal.

Fall

1 Course Unit

**LING 5020 Linguistic Field Methods**

Instruction and practice in primary linguistic research, producing a grammatical sketch and a lexicon through work with a native-speaker consultant and some reference materials. Consultant work is shared with LING 502.

Not Offered Every Year

1 Course Unit

**LING 5090 Language and Computation**

The computational study of natural language and its implications for linguistic theories. Topics include finite state tools, computational morphology and phonology, grammar and parsing, computational models of language learning in children and machines.

Not Offered Every Year

1 Course Unit

**LING 5100 Historical and Comparative Linguistics**

Synchronic and diachronic systems. Analogic processes. Semantic change. Effects of contact. Internal reconstruction. Comparative method and reconstruction.

Fall

1 Course Unit

**LING 5110 Old English**

The main purpose of this course is to teach students to read Old English ("Anglo-Saxon"), chiefly but not exclusively for research in linguistics. Grammar will be heavily emphasized; there will also be lectures on the immediate prehistory of the language, since the morphology of Old English was made unusually complex by interacting sound changes. In the first eight weeks we will work through Moore and Knott's "Elements of Grammar" and learn the grammar; the remainder of the term will be devoted to reading texts.

Not Offered Every Year

1 Course Unit

**LING 5150 Dynamics of Language**

This course introduces the tools, techniques, as well as current research on the approach to language as a dynamical system, which seeks to fruitfully integrate linguistic theory, psycholinguistics, corpus linguistics, and historical linguistics through the means of mathematical modeling. Topics include: string processing, dynamical systems and stability, stochastic processes, mathematical models of population dynamics, and dynamical models of language learning, processing, and change.

Fall or Spring

Prerequisite: LING 5100

1 Course Unit

**LING 5210 Phonetics I: Experimental**

Speech: its linguistic transcription, its quantitative physical description, and its relationship to the categories and dimensions of language structure and use. The physical basis of speech: acoustics, vocal tract anatomy and physiology, hearing and speech perception, articulation and motor control. Phonetic variation and change. Prosody: stress, intonation, phrasing speech rate. Phonetic instrumentation, the design and interpretation of phonetic experiments, and the use of phonetic evidence in linguistic research, with emphasis on computer techniques. Introduction to speech signal processing. Speech technology: introduction to speech recognition, text-to-speech synthesis, speech coding. This course will emphasize the phonetics of natural speech, and its connections to issues in other areas of linguistics and cognitive science.

Fall

Prerequisite: LING 0001

1 Course Unit

**LING 5220 Phonetics II: Data Science**

This is a methodology course, which focuses on how to conduct phonetics research using very large speech corpora. Topics include scripting and statistical techniques, automatic phonetic analysis, integration of speech technology in phonetics studies, variation and invariability in large speech corpora, and revisiting classic phonetic and phonological problems from the perspective of corpus phonetics.

Spring

Prerequisite: LING 5210

1 Course Unit

**LING 5250 Computer Analysis and Modeling of Biological Signals and Systems**

A hands-on signal and image processing course for non-EE graduate students needing these skills. We will go through all the fundamentals of signal and image processing using computer exercises developed in MATLAB. Examples will be drawn from speech analysis and synthesis, computer vision, and biological modeling.

Fall

Mutually Exclusive: LING 2250

1 Course Unit

**LING 5300 Sound Structure of Language**

An introduction to phonetics and phonology. Topics include articulatory phonetics (the anatomy of the vocal tract; how speech sounds are produced); transcription (conventions for representing the sounds of the world's languages); classification (how speech sounds are classified and represented cognitively through distinctive features); phonology (the grammar of speech sounds in various languages: their patterning and interaction) and syllable structure and its role in phonology.

Spring

1 Course Unit

**LING 5310 Phonology I**

First half of a year-long introduction to the formal study of phonology. Basic concepts in articulatory phonetics; the distribution of sounds (phonemes and allophones); underlying and surface forms, and how to relate them using both ordered-rule and surface-constraint approaches. The survey of theoretical topics in this term includes distinctive features (context, organization, underspecification); the autosegmental representation of tone; and the theory of phonological domains and their interaction with morphological and syntactic constituency. Emphasizes hands-on analysis of a wide range of data.

Fall

Prerequisite: LING 5300

1 Course Unit

**LING 5320 Phonology II**

Second half of a year-long introduction; continues LING 530. Topics to be surveyed include syllable structure and moraic theory; the prosodic hierarchy; the properties and representation of geminates; templatic and prosodic morphology; reduplication and emergence of the unmarked; and metrical phonology (properties of stress, foot typology, and issues of constituency). Emphasizes hands-on analysis of a wide range of data.

Spring

Prerequisite: LING 5310

1 Course Unit

**LING 5410 Morphology I**

This course will explore some issues concerning the internal structure of words. After a brief introduction to some basic terms and concepts, we will discuss the interaction of morphology with phonology. We will look both at how morphology conditions phonological rules and how phonology conditions morphology. Then we will turn to the interaction of syntax and morphology. We will look at some problems raised by inflectional morphology, clitics and compounds. The main requirement for the class will be a series of homework exercises in morphological analysis and a short paper at the end of the semester.

Not Offered Every Year

1 Course Unit

**LING 5420 Morphology II**

This course takes a detailed look at a number of central topics in morphological theory. The material examined in the course consists of primary readings and reviews, covering a number of central topics in the field. These topics include (but are not restricted to) allomorphy, blocking, the interface of phonology and morphology, syncretism, affixation, the syntax-morphology interface, and compounding. The primary requirements for the class involve short assignments that are based on the readings, in the form of both problem sets and critical appraisals of core theoretical positions. In addition to this, students will write a short paper at the end of the semester.

Not Offered Every Year

1 Course Unit

**LING 5450 Mental Lexicon**

An investigation of the psychological representations and processing of words. Topics include: the extraction of words from speech; lexical access and production; the induction of morphological and phonological regularities in word learning; decomposition of morphologically complex words; frequency effects in morphological processing; storage vs. computation in the lexicon; the past tense debate; morphological change. This course makes extensive use of linguistic corpora. Students will also be familiarized with experimental design issues in the psycholinguistic study of the lexicon.

Not Offered Every Year

1 Course Unit

**LING 5500 Introduction to Syntax**

This course is an introduction to current syntactic theory, covering the principles that govern phrase structure (the composition of phrases and sentences), movement (dependencies between syntactic constituents), and binding (the interpretation of different types of noun phrases). Although much of the evidence discussed in the class will come from English, evidence from other languages will also play an important role, in keeping with the comparative and universalist perspective of modern syntactic theory.

Fall

1 Course Unit

**LING 5510 Syntax I**

A general introduction at the graduate level to the analysis of sentence structure. The approach taken is that of contemporary generative-transformational grammar.

Fall

1 Course Unit

**LING 5520 Syntax II**

The second half of a year-long introduction to the formal study of natural language syntax. Topics to be covered include grammatical architecture; derivational versus representational statement of syntactic principles; movement and locality; the interface of syntax and semantics; argument structure; and other topics. The emphasis is on reading primary literature and discussing theoretical approaches, along with detailed case-studies of specific syntactic phenomena in different languages.

Spring

Prerequisite: LING 5510

1 Course Unit

**LING 5560 Historical Syntax**

Introduction to the study of the syntax of languages attested only in historical corpora. The course will cover methods and results in the grammatical description of such languages and in the diachronic study of syntactic change.

Not Offered Every Year

Prerequisite: LING 5520

1 Course Unit

**LING 5600 Language Variation & Change**

Speech communities as a focus for the understanding of language evolution and change: language variation in time and space. The relationship between language structure and language use; between language change and social change. Populations as differentiated by age, sex, social class, race, and ethnicity, and the relationship of these factors to linguistic differentiation.

Spring

1 Course Unit

**LING 5620 Quantitative Study of Linguistic Variation**

This course provides students with the opportunity to hone their statistical, computational, and organizational skillsets while conducting original linguistic research on data gathered in continuing fieldwork in the speech community. Topics include forced alignment and vowel extraction, auditory and automated variable coding, the application of linear and logistic regression, and techniques for effective data visualization.

Fall, odd numbered years only

Prerequisite: LING 5660 OR STAT 5000 OR STAT 5010

1 Course Unit

**LING 5640 Experimental Sociolinguistics**

How do people form social impressions of others based on subtle patterns in their linguistic behavior? How do people shape their use of language to adapt to different social contexts and reflect their own identities? And what kinds of cognitive processes allow people to learn and use these sociolinguistic skills? Sociolinguists are increasingly turning to experimental methods to answer these exciting but complex questions. In this class, students will gain an up-to-date familiarity with major results in the experimental sociolinguistics literature, an awareness of the wide range of methods for sociolinguistic experimentation, and hands-on experience with the tools needed to create sociolinguistic experiments.

Fall, even numbered years only

Mutually Exclusive: LING 3640

1 Course Unit

**LING 5650 Sociophonetics**

This course will build on students' existing knowledge of sociolinguistic variation and phonetics to allow them to explore differences in the perception and production of different language and language varieties. In this course, students will learn the primary skills of sociophonetic analysis, including learning to design their own perception and production studies. Students will also gain experience with methods in sociophonetics and common tools for analysis such as ELAN, Praat, FAVE and R. The course is open to graduate and undergraduate students, but all students will have the opportunity to conduct an independent sociophonetic research project.

Mutually Exclusive: LING 3650

Prerequisite: LING 0600 AND LING 2200

1 Course Unit

**LING 5660 The Study of the Speech Community: Field Methods**

For students who plan to carry out research in the speech community. Techniques and theory derived from sociolinguistic studies will be used to define neighborhoods, enter the community, analyze social networks, and obtain tape-recorded data from face-to-face interviews. Students will work in groups and study a single city block.

Fall or Spring

1 Course Unit

**LING 5700 Developmental Psycholinguistics**

The generative literature on language acquisition has produced many accurate and insightful descriptions of child language, but relatively few explicit accounts of learning that incorporate the role of individual experience into the knowledge of specific languages. Likewise, the experimental approach to language development has identified processes that could provide the bridge between the data and the grammar, but questions remain whether laboratory findings can sufficiently generalize to the full range of linguistic complexity. This course is an overview of research in language acquisition with particular focus on the important connection between what children know and how they come to know it.

Spring

1 Course Unit

**LING 5740 Neurolinguistics**

This course is an upper level undergraduate/graduate seminar in neurolinguistics. We will explore language in the brain through readings and discussions.

Fall

1 Course Unit

**LING 5750 The Acquisition of Meaning**

This is a seminar on the acquisition of a first language by children. We will discuss the acquisition of the meanings of words and sentences, and the pragmatic and social interpretation of sentences in context. We will also consider how language relates to other cognitive systems and to human social reasoning. Particular emphasis will be placed on discovering the mechanisms children possess that enable them to learn and use language.

Not Offered Every Year

1 Course Unit



**LING 5810 Semantics I**

This course provides an introduction to formal semantics for natural language. The main aim is to develop a semantic system that provides a compositional interpretation of natural language sentences. We discuss various of the aspects central to meaning composition, including function application, modification, quantification, and binding, as well as issues in the syntax-semantics interface. The basic formal tools relevant for semantic analysis, including set theory, propositional logic, and predicate logic are also introduced.

Fall

Prerequisite: LING 5510

1 Course Unit

**LING 5820 Semantics II**

The first part of the course expands the system from LING 580 to include intensional contexts. In particular, we discuss analyses of modals, attitude verbs, and conditionals, as well as the scope of noun phrases in modal environments. The second part of the course discusses a selection of topics from current work in semantics, such as the semantics of questions, tense and aspect, donkey anaphora, indefinites, genericity, degree constructions, events and situations, domain restriction, plurality and focus.

Spring

Prerequisite: LING 5520

1 Course Unit

**LING 5850 Experiments in the Study of Meaning**

This course provides an introduction to the experimental study of meaning in natural language. We begin by introducing some basic notions of formal semantics and pragmatics and review relevant technical background. Next we discuss recent developments in studying meaning-related phenomena experimentally, which, in addition to theoretical questions, involve issues in the acquisition and processing of semantic information. In the course of this, we will also introduce the basics of experimental design and relevant psycholinguistic methodology. In addition to readings and homework assignments, students will embark on a small research project (individually or jointly), which will be presented in class at the end of the semester and written up as a term paper.

Not Offered Every Year

1 Course Unit

**LING 5860 Experiments in the Study of Meaning II**

This course continues the introduction to Experiments in the study of meaning in natural language from LING 455. A large focus will be practical aspects of designing and implementing experiments, while covering a range of current topics from the experimental semantics and pragmatics literature (and exploring new avenues) along the way, e.g., pronouns and definite reference, presuppositions, quantifiers and domain restriction, generics. We'll start with some basic aspects of experimental design, including counter-balancing, controlling for confounds, utilizing fillers, as well as a range of key experimental task paradigms, such as simple truth-value judgments and picture sentence matching, acceptability ratings, reading time studies, and visual world eye tracking. For implementation, we will introduce the PCIBEX platform at <https://farm.pcibex.net> and its relevant functionalities. Students will select a topic area, either individually or in small groups, and start from a survey article or recent journal paper to familiarize themselves with current issues. Next, they will formulate their own question, decide on a suitable task paradigm, and begin fleshing out a full experiment implementation, with the goal of collecting data at the end of the semester (if at all possible). The project will then be written up in a term paper. This provides students with the opportunity to engage in a scientific investigation of their own early on in their career in a domain that is easily accessible and yet central to the general enterprise of the cognitive sciences.

Spring

1 Course Unit

**LING 6100 Seminar in Historical and Comparative Linguistics**

Selected topics either in Indo-European comparative linguistics or in historical and comparative method.

Fall or Spring

1 Course Unit

**LING 6110 Comparative Indo-European Grammar I**

A survey of phonology and grammar of major ancient Indo-European languages and the reconstruction of Proto-Indo-European. A knowledge of at least one ancient Indo-European language is required.

Two Term Class, Student must enter first term; credit given after both terms are complete

1 Course Unit

**LING 6120 Comparative Indo-European Grammar II**

A survey of phonology and grammar of major ancient Indo-European languages and the reconstruction of Proto-Indo-European. A knowledge of at least one ancient Indo-European language is required.

Fall or Spring

1 Course Unit

**LING 6170 Topics in the Cultural Evolution of Language**

Readings in the cultural evolution of language. This encompasses research on the contribution of processes of cultural change to the emergence of language in the human species, the emergence of new languages, and language change viewed as a cultural-evolutionary process. There will be an emphasis on research employing empirical methods, particularly experimentation. Otherwise focus varies from term to term.

Not Offered Every Year

1 Course Unit

**LING 6200 Topics in Phonetics**

Topics in Phonetics

Not Offered Every Year

1 Course Unit

**LING 6300 Topics in Phonology**

Topics are chosen from such areas as featural representations; syllable theory; metrical structure; tonal phonology; prosodic morphology; interaction of phonology with syntax and morphology.

Not Offered Every Year

Prerequisite: LING 5310 OR LING 5320

1 Course Unit

**LING 6400 Seminar in Morphology**

Readings in modern morphological theory and evaluation of hypotheses in the light of synchronic and diachronic evidence from various languages.

Not Offered Every Year

Prerequisite: LING 5310

1 Course Unit

**LING 6500 Topics in Natural-Language Syntax**

Detailed study of topics in syntax and semantics, e.g., pronominalization, negation, complementation. Topics vary from term to term.

Fall or Spring

Prerequisite: LING 5520

1 Course Unit

**LING 6580 Topics in the Syntax-Semantics Interface**

Topics in the Syntax-Semantics Interface

Fall

1 Course Unit

**LING 6600 Research Seminar in Sociolinguistics**

Students approaching the dissertation level will explore with faculty frontier areas of research on linguistic change and variation. Topics addressed in recent years include: experimental investigation of the reliability of syntactic judgments; the development of TMA systems in creoles; transmission of linguistic change across generations. The course may be audited by those who have finished their course work or taken for credit in more than one year.

Not Offered Every Year

1 Course Unit

**LING 6620 Topics in Experimental Sociolinguistics**

Topics in Experimental Sociolinguistics

Not Offered Every Year

1 Course Unit

**LING 6700 Topics in Psycholinguistics**

Topics in Psycholinguistics

1 Course Unit

**LING 6750 Language and Cognition**

This is a seminar on how language relates to perception and cognition.

The seminar pays particular attention to the question of whether and how language might affect (and be affected by) other mental processes, how different languages represent the mental and physical world, and how children acquire language-general and language-specific ways of encoding human experience. The course incorporates cross-linguistic, cognitive and developmental perspectives on a new and rapidly changing research area.

Spring

1 Course Unit

**LING 6800 Topics in Semantics and Pragmatics**

Topics in Semantics & Pragmatics

Not Offered Every Year

1 Course Unit

**LING 6960 Pragmatics Workshop**

Pragmatics Workshop

Not Offered Every Year

1 Course Unit

**LING 9999 Independent Study and Research**

Independent Study and Research

Fall or Spring

1 Course Unit