SPEECH, LANGUAGE AND HEARING SCIENCES

The undergraduate program in speech, language and hearing sciences (SLHS) introduces concepts basic to human communication and provides opportunities for students to acquire an understanding of normal and disordered speech, language and hearing processes. The curriculum for the undergraduate degree in SLHS provides a strong academic foundation for students interested in a wide variety of careers related to the fields of disabilities, healthcare, and education. Additionally, it provides the appropriate undergraduate background for students interested in continuing onto graduate school in speech pathology, audiology and/or special education.

The undergraduate degree in speech, language and hearing sciences emphasizes knowledge of:

- The anatomy of the speech and hearing mechanisms, as well as the processes of speech production, transmission and reception.
- The development of language.
- Scientific methods used in investigating speech/language/learning and hearing processes.
- The etiologies, characteristics and treatments of speech, language, learning and hearing disorders.
- The role of the professional speech-language pathologist and audiologist, including the scientific traditions of the discipline and the ethical issues in providing service to individuals with communication disorders.

In addition, students completing the degree in speech, language and hearing sciences are expected to acquire the ability and skills to:

- Express themselves effectively both orally and in written scientific and clinical discipline-specific reports.
- Critically evaluate literature in the discipline.
- Analyze the acoustic output of the speech production process auditorily and/or instrumentally.

Course code for this program is SLHS.

Bachelor's Degree

- Speech, Language and Hearing Sciences - Bachelor of Arts (BA) (catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/speech-language-hearing-sciences/speech-language-hearing-sciences-bachelor-arts-ba)
- Speech, Language and Hearing Sciences - Minor (catalog.colorado.edu/undergraduate/colleges-schools/arts-sciences/programs-study/speech-language-hearing-sciences/speech-language-hearing-sciences-minor)

Faculty

While many faculty teach both undergraduate and graduate students, some instruct students at the undergraduate level only. For more information, contact the faculty member's home department.

Arehart, Kathryn H. (https://experts.colorado.edu/display/fisid_105561) Professor; PhD, University of Washington

Brennan, Christine (https://experts.colorado.edu/display/fisid_155861) Assistant Professor; PhD, Northwestern University

Fredrickson, Tammy L. (https://experts.colorado.edu/display/fisid_148888) Clinical Assistant Professor; PhD, University of Colorado Boulder

Hardin, Kathryn Theresa Yarema (https://experts.colorado.edu/display/fisid_139358) Clinical Assistant Professor; MA, University of Colorado Boulder

Hedberg, Natalie L. Professor Emeritus

Hori, Yoshiyuki Professor Emeritus

Jancosek, Elizabeth G. Senior Instructor Emerita

Kan, Pui Fong (https://experts.colorado.edu/display/fisid_145806) Associate Professor; PhD, University of Minnesota Twin Cities

Kates, James (https://experts.colorado.edu/display/fisid_146722) Scholar in Residence

Lelow, Jen Walentas (https://experts.colorado.edu/display/fisid_147362) Clinical Assistant Professor

Meyers, Christina Nicole (https://experts.colorado.edu/display/fisid_155857) Assistant Professor; PhD, University of Arizona

Moers, Willard Lee (https://experts.colorado.edu/display/fisid_114371) Instructor; MA, Gallaudet University

Perez-Pamies, Susanna (https://experts.colorado.edu/display/fisid_147675) Instructor

Pollard, Ryan D. (https://experts.colorado.edu/display/fisid_153106) Instructor; PhD, University of Colorado Boulder

Ramig, Peter R. Professor Emeritus

Ramsberger, Gail (https://experts.colorado.edu/display/fisid_100943) Associate Professor; Associate Chair; DSc, Boston University

Rowinski, Chris Morton Lecturer

Schick, Brenda (https://experts.colorado.edu/display/fisid_110058) Professor; PhD, Purdue University

Sharma, Anu (https://experts.colorado.edu/display/fisid_143814) Professor, Chair; PhD, Northwestern University

Snyder, Lynn Professor Emeritus

Sweetman, Richard H. Professor Emeritus

Thrasher, Amy H. (https://experts.colorado.edu/display/fisid_120907) Clinical Assistant Professor; MA, University of Colorado Boulder
### Courses

#### SLHS 1010 (3) Disabilities in Contemporary American Society
Addresses the issue that 50 percent of all individuals experience disability in their lifetime. Introduces students to the social, cultural, psychological, economic, political, legal, and health-care issues related to society and individuals with disabilities.

**Additional Information:** Arts Sci Core Curr: Contemporary Societies  
Arts Sci Gen Ed: Distribution-Social Sciences  
Arts Sci Gen Ed: Diversity-U.S. Perspective  
Departmental Category: Didactic: All-Department

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<tr>
<td>SLHS 2000 (3)</td>
<td>Introduction to Communication Disorders</td>
<td>Surveys communication disorders, including hearing impairments, learning disabilities, and speech-language disorders, as well as an introduction to basic speech and hearing science.</td>
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<tr>
<td>SLHS 2010 (3)</td>
<td>Science of Human Communication</td>
<td>Discusses how human communication (the process by which a thought is transmitted from the brain of a speaker to the brain of a listener) involves a complex interaction of acoustics, anatomy, physiology, neurobiology, and psychology.</td>
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**Additional Information:** Arts Sci Core Curr: Natural Science Non-Sequence  
Arts Sci Gen Ed: Distribution-Natural Sciences  
Departmental Category: Didactic: All-Department

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<tr>
<td>SLHS 2305 (4)</td>
<td>American Sign Language 1</td>
<td>Introduces basic sign vocabulary, grammatical structures of ASL, and the culture of deaf people. Classes are taught using ASL without the use of spoken English.</td>
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**Additional Information:** Arts Sci Core Curr: Foreign Language  
Arts Sci Gen Ed: Distribution-Arts Humanities  
Arts Sci Gen Ed: Foreign Language  
Departmental Category: American Sign Language

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<td>SLHS 2315 (4)</td>
<td>American Sign Language 2</td>
<td>Develops more complex vocabulary and grammatical structures, and an understanding of deaf culture. Classes are taught using ASL without the use of spoken English.</td>
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**Requisites:** Requires a prerequisite course of SLHS 2305 (minimum grade C-). |

**Additional Information:** Arts Sci Core Curr: Foreign Language  
Arts Sci Gen Ed: Foreign Language  
Arts Sci Gen Ed: Distribution-Arts Humanities  
Departmental Category: American Sign Language

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<tr>
<td>SLHS 2325 (4)</td>
<td>American Sign Language 3</td>
<td>Continuation of SLHS 2315. Covers ASL literature, advanced grammatical structures, idiomatic expressions, and deaf culture.</td>
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**Requisites:** Requires a prerequisite course of SLHS 2315 (minimum grade C-). |

**Additional Information:** Arts Sci Core Curr: Foreign Language  
Arts Sci Gen Ed: Foreign Language  
Arts Sci Gen Ed: Distribution-Arts Humanities  
Departmental Category: American Sign Language

#### SLHS 3003 (3) Cognitive Science
Introduces cognitive science, drawing from psychology, philosophy, artificial intelligence, neuroscience, and linguistics. Studies the linguistic relativity hypothesis, consciousness, categorization, linguistic rules, the mind-body problem, nature versus nurture, conceptual structure and metaphor, logic/problem solving and judgment. Emphasizes the nature, implications and limitations of the computational model of mind.

**Equivalent - Duplicate Degree Credit Not Granted:** LING 3005 and PHIL 3310 and PSYC 3005 and CSCI 3702 and CSPB 3702

**Recommended:** Prerequisites two of the following CSCI 1300 or LING 2000 or PHIL 2240 or PSYC 2145.

**Additional Information:** Arts Sci Gen Ed: Distribution-Arts Humanities  
Arts Sci Gen Ed: Distribution-Natural Sciences  
Arts Sci Gen Ed: Distribution-Social Sciences

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<td>SLHS 3006 (3)</td>
<td>Phonetics</td>
<td>Focuses on production of speech sounds, transcribing speech using the International Phonetic Alphabet, analyzing the acoustic properties of speech sounds, understanding how speech sounds vary depending on the context. Provides a foundation for understanding normal and atypical speech development, atypical speech problems and patterns, regional and foreign accents, and speech recognition by computers.</td>
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**Requisites:** Requires a prerequisite course of LING 2000 (minimum grade C-). |

**Additional Information:** Arts Sci Gen Ed: Distribution-Social Sciences  
Departmental Category: Didactic: Speech-Hearing Science

#### SLHS 3014 (3) Hearing Loss Epidemiology
Introduces students to basic epidemiological concepts related to hearing loss. Provides an overview of the hearing mechanism, assessment and identification of hearing loss, prevalence of hearing disorders, treatment and intervention. Noise pollution, aging and toxic agents are discussed. Focuses on risk factors for hearing impairment and comorbidities.

**Requisites:** Restricted to students with 27-180 credits (Sophomores, Juniors or Seniors) only. |

**Additional Information:** Arts Sci Gen Ed: Distribution-Social Sciences  
Departmental Category: Didactic: Audiology

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<td>SLHS 3106 (3)</td>
<td>Hearing Science</td>
<td>Focuses on the three main aspects of the hearing process: sounds in the environment (physical acoustics), sounds encoded within the auditory system (physiological acoustics) and perception of sound (psychological acoustics).</td>
</tr>
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**Requisites:** Requires a prerequisite course of SLHS 2010 (minimum grade C-). Restricted to Speech, Language and Hearing Sciences (SLHS) undergraduate or master’s students or Audiology (AUDD) majors only. |

**Additional Information:** Arts Sci Gen Ed: Distribution-Natural Sciences  
Departmental Category: Didactic: Speech-Hearing Science

#### SLHS 3116 (3) Speech Science
Provides a basic understanding of the structural organization (anatomy), function (physiology), and neural controls of the structures used to produce speech, swallowing, respiration, and related behaviors in humans.

**Requisites:** Requires a prerequisite course of SLHS 2010 (minimum grade C-). |

**Recommended:** Prerequisite SLHS 3106. |

**Additional Information:** Arts Sci Gen Ed: Distribution-Natural Sciences  
Departmental Category: Didactic: Speech-Hearing Science
SLHS 4000 (3) Multicultural Aspects of Communication Differences and Disorders
Examines perceptions and attitudes regarding differences in communication as a function of cultural-linguistic diversity. Discusses implications of differing verbal and nonverbal communication styles of various cultural groups in terms of professional responsibilities.
Requisites: Restricted to students with 57-180 credits (Juniors or Seniors).
Recommended: Prerequisite upper-division standing and a minimum of 60 credit hours.
Additional Information: Departmental Category: Didactic: All-Department

SLHS 4100 (1-3) Special Topics in Speech, Language, and Hearing Sciences
Studies selected topics in speech, language, hearing sciences, communication disorders, and other professional issues.
Additional Information: Departmental Category: Didactic: All-Department

SLHS 4502 (3) Language Disorders Across the Lifespan
Provides students with an introductory understanding of the causes, characteristics, assessment and treatment of developmental and acquired language disorders in children and adults. Examines a variety of disorders including specific language impairment, learning disabilities, and language and cognitive disorders due to brain damage. Considers the challenge of identifying language disorders in children and adults from culturally and linguistically diverse backgrounds.
Requisites: Requires a prerequisite or corequisite course of SLHS 4560 (minimum grade C-).
Additional Information: Arts Sci Gen Ed: Distribution-Social Sciences Departmental Category: Didactic: Speech-Language Pathology

SLHS 4512 (3) Speech Disorders Across the Lifespan
Provides students with an introductory understanding of the causes, characteristics, assessment and treatment of speech disorders including those involving articulation, voice, resonance, and fluency. Examines a variety of disorders including stuttering, speech sound disorders, cleft lip and palate, vocal pathology, as well as dysarthria and apraxia due to stroke, trauma, and progressive neurological diseases.
Requisites: Requires a prerequisite course of SLHS 2010 (minimum grade C-).
Additional Information: Arts Sci Gen Ed: Distribution-Social Sciences Departmental Category: Didactic: Speech-Language Pathology

SLHS 4560 (3) Language Development
Covers the development of language in childhood and into adult life, emphasizing the role of environment and biological endowment in learning to communicate with words, sentences, and narratives.
Equivalent - Duplicate Degree Credit Not Granted: LING 4560 and PSYC 4560
Requisites: Restricted to Speech, Language and Hearing Sciences (SLHS) undergraduate or master's students or Audiology (AUD) majors only.
Additional Information: Arts Sci Gen Ed: Distribution-Social Sciences Departmental Category: Didactic: All-Department

SLHS 4576 (3) Communication Neuroscience
Provides an introduction to neuroscience with an emphasis on the systems that support human communication including speech perception and production, language, memory and cognition. Topics areas will include auditory processing, language, memory and motor systems. Development of brain systems and structures will be explored, as well as neurologically based disorders. Neuroscientific methods surveyed will include MRI, fMRI, EEG, MEG, NIRS, lesion studies and electrophysiology.
Requisites: Requires a prerequisite course of SLHS 2010 or NRSC 2100 (both minimum grade C). Restricted to students with 27-180 credits (Sophomores, Juniors or Seniors).
Additional Information: Arts Sci Gen Ed: Distribution-Natural Sciences

SLHS 4704 (3) Audiological Evaluation
Studies basic principles and techniques of hearing evaluation, including pure-tone, speech, immittance, and advanced audiometry; hearing conservation in hospital, school, and industrial settings; and identification and evaluation of auditory pathologies. Required projects in screening and pure-tone audiometry.
Requisites: Requires a prerequisite course of SLHS 3106 (minimum grade C-).

SLHS 4714 (3) Audiological Rehabilitation
Covers basic principles and techniques related to the habilitation and rehabilitation of individuals who are deaf or hard of hearing: amplification, speech, language, auditory, speech reading, and educational issues.
Requisites: Requires prerequisite courses of LING 3100 or SLHS 3006. Requires a prerequisite or corequisite course of SLHS 4704 (all minimum grade C-).
Additional Information: Arts Sci Gen Ed: Distribution-Social Sciences Departmental Category: Didactic: Audiology

SLHS 4849 (1-6) Independent Study for Undergraduates
Instructor consent required.
Repeatable: Repeatable for up to 8.00 total credit hours. Allows multiple enrollment in term.
Additional Information: Departmental Category: Independent Study

SLHS 4918 (2) Introduction to Clinical Practice
Introduces students to the clinical processes and key components of assessment and interventions. Explores the applications of the theoretical and scientific information to clinical settings. Students complete supervised observation of individuals with communication challenges.
Requisites: Requires a prerequisite course of SLHS 2000 (minimum grade C). Restricted to students with 57-180 credits (Junior or Senior) Speech, Language and Hearing Sciences (SLHS) majors only.
Additional Information: Arts Sci Gen Ed: Distribution-Social Sciences Departmental Category: Practica

SLHS 4938 (1-6) Internship: Speech-Language Intervention
Provides a supervised clinical experience with children who have communication challenges enrolled in the Child Learning Center programs; individuals demonstrating communication disorders as a cotherapist in the Speech, Language, and Hearing Center; or off-campus experience in an affiliated hospital or public school program. Instructor consent required.
Repeatable: Repeatable for up to 6.00 total credit hours. Allows multiple enrollment in term.
Grading Basis: Letter Grade
Additional Information: Departmental Category: Practica