

# SLH - Speech, Language, and Hearing Sciences

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## Speech, Language, and Hearing Sciences: SLH

### Lower-Division Courses

#### **SLH 306K. Introduction to Speech, Language, and Hearing Sciences.**

Introduction to the study of processes and disorders of speech, language, and hearing. Three lecture hours a week for one semester. Communication Sciences and Disorders 306K and Speech, Language, and Hearing Sciences 306K may not both be counted.

#### **SLH 308K. Perspectives on Deafness.**

Examine deafness from a number of perspectives: social and psychological meanings of deafness, the deaf community, education of deaf children, sign languages, and historical trends. Three lecture hours a week for one semester. Communication Sciences and Disorders 308K and Speech, Language, and Hearing Sciences 308K may not both be counted.

#### **SLH 311K. Phonetic Description of Speech.**

Examine speech production, physiological analysis and description of speech sounds, voice quality, and voice dynamics; notation; phonetic theory; applications of phonetics. Three lecture hours a week for one semester. Communication Sciences and Disorders 311K and Speech, Language and Hearing Sciences 311K may not both be counted.

#### **SLH 312. Developmental Language Science.**

Introduction to language and literacy development from birth through adolescence. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 312, 318K, Speech, Language, and Hearing Sciences 312. Prerequisite: Credit or registration for Speech, Language, and Hearing 118L (or Communication Sciences and Disorders 118L).

#### **SLH 313L. Hearing Science.**

Examine acoustical, physiological, and psychological bases of normal human hearing. Explore theories of audition. Three lecture hours a week for one semester. Communication Sciences and Disorders 313L and Speech, Language, and Hearing Sciences 313L may not both be counted. Prerequisite: Credit or registration for Speech, Language, and Hearing 113P (or credit for Communication Sciences and Disorders 113P).

#### **SLH 113P. Hearing Science: Laboratory.**

Examine laboratory techniques in hearing science research. One-and-one-half laboratory hours a week for one semester. Communication Sciences and Disorders 113P and Speech, Language, and Hearing Sciences 113P may not both be counted.

#### **SLH 314L. Sociocultural Bases of Communication.**

An introduction to the influences of social and cultural factors, such as ethnicity, socioeconomic status, and geographic region, on communication acquisition and use, with a focus on cross-cultural communication issues in a diverse society. Three lecture hours a week for one semester. Communication Sciences and Disorders 314L and Speech, Language, and Hearing Sciences 314L may not both be counted.

#### **SLH 315S. Speech Science.**

Same as Linguistics 315. Neurophysiological mechanisms underlying the encoding and decoding of speech. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 315S, 358S, Linguistics 315, 358S, Speech, Language, and Hearing Sciences 315S.

#### **SLH 118L. Development Language Science: Laboratory.**

Examine child language in a clinical laboratory setting. One-and-one-half laboratory hours a week for one semester. Communication Sciences and Disorders 118L and Speech, Language, and Hearing Sciences 118L may not both be counted.

#### **SLH 119S, 219S, 319S, 419S, 519S, 619S, 719S, 819S, 919S. Topics in Speech, Language, and Hearing Sciences.**

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad advisor in the academic unit. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program. May be repeated for credit when the topics vary.

### Upper-Division Courses

#### **SLH 129S, 229S, 329S, 429S, 529S, 629S, 729S, 829S, 929S. Topics in Speech, Language, and Hearing Sciences.**

This course is used to record credit the student earns while enrolled at another institution in a program administered by the University's Study Abroad Office. Credit is recorded as assigned by the study abroad advisor in the academic unit. University credit is awarded for work in an exchange program; it may be counted as coursework taken in residence. Transfer credit is awarded for work in an affiliated studies program. May be repeated for credit when the topics vary.

#### **SLH 331E. Instructional Methods for Deaf Students.**

Restricted to communication sciences and disorders majors and speech, language, and hearing sciences majors. Examine methods of assessment, curriculum organization, lesson planning, instruction, and classroom management in education of deaf children. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 331E; Curriculum and Instruction 331E; 339K, Speech, Language, and Hearing Sciences 331E. Offered on the letter-grade basis only. Prerequisite: Upper-division standing; completion of at least seventy-two hours of University coursework; American Sign Language 610D (or 312K); and a minimum University grade point average of 2.50.

#### **SLH 340P. Clinical Observation in Speech Language Pathology.**

Restricted to communication sciences and disorders majors and speech, language and hearing sciences majors. Explore evidence-based practice in speech and language pathology through guided observation. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 140P, 340P, Speech, Language and Hearing Sciences 340P. Prerequisite: Upper-division standing.

#### **SLH 341. Principles of Audiology.**

Explore the causes of hearing disorders and examine diagnostic procedures and treatment. Three lecture hours a week for one semester. Communication Sciences and Disorders 341 and Speech, Language, and Hearing Sciences 341 may not both be counted. Prerequisite: Upper-division standing and Speech, Language, and Hearing Sciences 313L (or Communication Sciences and Disorders 313L) with a grade of at least C-

### **SLH 350. Language and the Brain.**

Same as Linguistics 350C. Explore the neuroanatomical and functional operations of the major brain structures that underlie speech/language. Examine hemispheric dominance for language, neurological and language breakdowns in aphasia, and brain imaging methods and studies of language representation. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 350; Linguistics 350 (Topic 1); Linguistics 350C; Speech, Language, and Hearing Sciences 350. Prerequisite: Upper-division standing.

### **SLH 352. Topics in Speech, Language, and Hearing Sciences.**

Three lecture hours a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Upper-division standing.

**Topic 1: Bilingualism: Language Development and Disorders.** Examine bilingual language development and the manifestation of speech and language disorders in bilingual children with a special focus on Spanish-English bilingualism. Explore disorder areas including developmental language disorders, speech sound disorders, fluency, and reading disabilities. Consider bilingual language development in cultural and linguistic contexts. Discuss communication disorders including evidence-based practices in interventions for bilingual children. Communication Sciences and Disorders 352 (Topic 1) and Speech, Language, and Hearing Sciences 352 (Topic 1) may not both be counted.

**Topic 2: Augmentative and Alternative Communication.** Examine augmentative and alternative communication (AAC) approaches for individuals with severe communication impairments. Explore foundational information for providing or referring services in AAC. Only one of the following may be counted: Communication Sciences and Disorders 352 (Topic: Augmentatv/Alternatv Comm); 352 (Topic 2); Speech, Language, and Hearing Sciences 352 (Topic 2).

**Topic 3: Bilingualism Across the Lifespan.** Explore the consequences of bilingualism on brain and mind across the lifespan. Survey current issues related to bilingualism as they pertain to speech-language pathology. Three lecture hours a week for one semester. Additional prerequisite: Upper-division standing.

### **SLH 358. Anatomy and Physiology of the Speech and Hearing Mechanism.**

Examine the anatomy and physiology of structures involved in speech, language, hearing, and swallowing in-depth. Explore anatomical and physiological mechanisms of respiration, phonation, articulation, and hearing; and the central nervous system and blood supply to the speech and hearing mechanism. Three lecture hours a week for one semester. Communication Sciences and Disorders 358 and Speech, Language and Hearing Sciences 358 may not both be counted. Prerequisite: Upper-division standing and credit or registration for Speech, Language, and Hearing 158L (or credit for Communication Sciences and Disorders 158L).

### **SLH 158L. Anatomy and Physiology of Speech and Hearing: Laboratory.**

Examine anatomy and physiology of structures involved in speech, language, hearing, and swallowing in a laboratory setting. Explore anatomical and physiological mechanisms of respiration, phonation, articulation, and hearing; and the central nervous system and blood supply to the speech and hearing mechanism. One and one-half laboratory hours a week for one semester. Communication Sciences and Disorders 158L and Speech, Language and Hearing Sciences 158L may not both be counted. Prerequisite: Upper-division standing.

### **SLH 360M. Communication and Deaf People.**

Examine forms of face-to-face communication used with deaf people, including speech and listening, systems of manual communication, and natural sign language, with an emphasis on child development issues and the use of different methods in educational practice. Three lecture hours a week for one semester. Communication Sciences and Disorders 360M and Speech, Language, and Hearing Sciences 360M may not both be counted. Prerequisite: Upper-division standing and Speech, Language, and Hearing Sciences 308K (or Communication Sciences and Disorders 308K) with a grade of at least C-.

### **SLH 364. Deaf Education Internship.**

Restricted to communication sciences and disorders majors and speech, language, and hearing sciences majors. Explore deaf education through field experience at the Texas School for the Deaf or public school programs including directed observation and participation with teachers and students in the instructional process. The equivalent of three lecture hours a week for one semester, with additional field hours to be arranged. Only one of the following may be counted: Communication Sciences and Disorders 364, Curriculum and Instruction 364, 664, Speech, Language, and Hearing Sciences 364. Prerequisite: Upper-division standing; completion of a minimum of seventy-two hours of University coursework; American Sign Language 610D (or 312K); a minimum University grade point average of 2.50.

### **SLH 367K. Introduction to Speech and Language Disorders Assessment and Treatment in Children.**

Restricted to communication sciences and disorders majors and speech, language, and hearing sciences majors. Introduction to assessment procedures and treatment strategies for children with speech and language disorders. Three lecture hours a week for one semester. Communication Sciences and Disorders 367K and Speech, Language, and Hearing Sciences 367K may not both be counted. Prerequisite: The following coursework with a grade of at least C- in each: Speech, Language, and Hearing Sciences 306K (or Communication Sciences and Disorders 306K); 311K (or Communication Sciences and Disorders 311K); 313L (or Communication Sciences and Disorders 313L); 312 (or Communication Sciences and Disorders 312 or 318K); and 315S (or Communication Sciences and Disorders 315S or 358S) or Linguistics 315 (or 358S).

### **SLH 167M, 367M. Clinical Practicum in Speech-Language Pathology and Audiology.**

Restricted to communication sciences and disorders majors specializing in audiology or speech/language pathology and speech, language, and hearing sciences majors specializing in audiology or speech/language pathology. Engage in a supervised clinical practicum in speech-language pathology and audiology. For each semester hour of credit earned, one lecture hour and three practicum hours a week for one semester. No more than four hours of Communication Sciences and Disorders 167M; 367M; Speech, Language, and Hearing Sciences 167M; or 367M may be counted towards the Bachelor of Science in Communication Sciences and Disorders or Bachelor of Science in Speech, Language, and Hearing Sciences. May be repeated for credit. Offered on the letter-grade basis only. Prerequisite: For speech/language pathology majors: upper-division standing; Speech, Language, and Hearing Sciences 341 (or Communication Sciences and Disorders 341); Speech, Language, and Hearing Sciences 340P (or Communication Sciences and Disorders 340P), 367K (or Communication Sciences and Disorders 367K), or 371 (or Communication Sciences and Disorders 371); University grade point average of at least 3.00; and consent of instructor. For others: upper-division standing, Speech, Language, and Hearing Sciences 341 (or Communication Sciences and Disorders 341), University grade point average of at least 3.00, and consent of instructor.

### **SLH 370. Clinical Research Internship.**

Supervised participation in clinical research internships. The equivalent of one lecture hour a week and three laboratory hours a week for one semester. Communication Sciences and Disorders 370 and Speech, Language, and Hearing Sciences 370 may not both be counted.

### **SLH 170N, 370N, 670N. Internship.**

Restricted to communication sciences and disorders majors and speech, language, and hearing science majors. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 170N, 370N, 670N, Speech, Language, and Hearing Sciences 170N, 370N, 670N. Prerequisite: Upper-division standing.

### **SLH 371. Introduction to Speech and Language Disorders Assessment and Treatment in Adults.**

Restricted to communication sciences and disorders majors and speech, language, and hearing sciences majors. Introduction to assessment procedures and treatment strategies for adults with speech and language disorders. Three lecture hours a week for one semester. Communication Sciences and Disorders 371 and Speech, Language, and Hearing Sciences 371 may not both be counted. Prerequisite: The following coursework with a grade of at least C- in each: Speech, Language, and Hearing Sciences 306K (or Communication Sciences and Disorders 306K); 311K (or Communication Sciences and Disorders 311K), 313L (or Communication Sciences and Disorders 313L), and 350 (or Communication Sciences and Disorders 350); and 315S (or Communication Sciences and Disorders) or Linguistics 315 (or 358S).

### **SLH 373. Principles of Aural Rehabilitation.**

Restricted to communication sciences and disorders majors and speech, language, and hearing sciences majors. Examine the rationale, methods, materials, procedures, and criteria for aural rehabilitation for hearing-impaired persons. Three lecture hours a week for one semester. Communication Sciences and Disorders 373 and Speech, Language, and Hearing Sciences 373 may not both be counted. Prerequisite: Upper-division standing and the following coursework with a grade of at least C- in each: Speech, Language and Hearing Sciences 306K or 308K (or Communication Sciences and Disorders 306K or 308K); 311K (or Communication Sciences and Disorders 311K); 313L (or Communication Sciences and Disorders 313L); 341 (or Communication Sciences and Disorders 341); and 315S (or Communication Sciences and Disorders 315S) or Linguistics 315 (or 358S).

### **SLH 175N. Deaf Education Seminar.**

Discuss social, political, and educational aspects of deafness. One lecture hour a week for one semester. May be repeated for credit.

### **SLH 378. Clinical Audiology.**

Explore differential diagnostic procedures for evaluation of auditory disorders. Examine theoretical concepts and clinical applications. One lecture hour a week and three lab hours a week for one semester. Communication Sciences and Disorders 378 and Speech, Language, and Hearing Sciences 378 may not both be counted. Prerequisite: Upper-division standing and Speech, Language, and Hearing Sciences 341 (or Communication Sciences and Disorders 341).

### **SLH 378C. Experiential Learning in Clinical Research.**

Explore experiential learning opportunities within the clinical environment observe clinical research, connect concepts, and reflect on processes that promote translation of theory to practice for stuttering and/or cluttering. The equivalent of one lecture hour and three laboratory hours a week for one semester. Communication Sciences and Disorders 378C and Speech, Language, and Hearing Sciences 378C may not both

be counted. Offered on the letter-grade basis only. Prerequisite: Upper division standing and consent of the instructor.

### **SLH 378D. Quality of Life in Clinical Care.**

Engage in an intensive experiential learning opportunity that emphasizes the positive role of counseling, empathy, self-compassion, and the therapeutic alliance in clinical care for persons who stutter and/or clutter and their loved ones. The equivalent of one lecture hour a week and three laboratory hours a week for one semester. Communication Sciences and Disorders 378D and Speech, Language and Hearing Sciences 378D may not both be counted. Offered on the letter-grade basis only. Prerequisite: Upper division standing and consent of instructor.

### **SLH 178K, 278K, 378K. Studies in Speech Language Pathology, Audiology.**

Restricted to communication sciences and disorders majors and speech, language, and hearing sciences majors. Supervised individual research. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester. Prerequisite: Upper-division standing; a University grade point average of 3.00; and consent of instructor.

### **SLH 178L. Clinical Laboratory Experience in Audiology.**

Examine audiology in a clinical laboratory setting. One and one-half laboratory hours a week for one semester. Communication Sciences and Disorders 178L and Speech, Language, and Hearing Sciences 178L may not both be counted. Prerequisite: Upper-division standing.

## **Graduate Courses**

### **SLH 180E, 280E, 380E, 480E. Conference Course.**

Examine readings in the literature of speech, language, and hearing sciences designed to expand opportunity for individual consultation both in research and in informational aspects of the work. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester. May be repeated for credit. Prerequisite: Graduate standing.

### **SLH 181L, 281L, 381L. Clinical Practicum.**

Engage in a supervised clinical practicum in speech, language, and hearing sciences. Three, six, or nine clinical teaching hours and one lecture hour a week for one semester. May be repeated for credit. Prerequisite: Graduate standing.

### **SLH 383C. Augmentative and Alternative Communication.**

Examine an overview and a critical analysis of augmentative and alternative communication approaches and how they can best be used for the benefit of individuals with severe communication impairments. Three lecture hours and one-half laboratory hour a week for one semester Communication Sciences and Disorders 383C and Speech, Language, and Hearing Sciences 383C may not both be counted. Prerequisite: Graduate standing.

### **SLH 383N. Topics in Speech, Language, and Hearing Sciences for Doctoral Studies.**

Selected topics on speech, language, and hearing sciences will be explored through reading of current research in the field. Topics include developmental language disorders, speech and language perception, speech production, fluency disorders, dysphagia, neural bases of adult communication disorders, bilingualism, advanced auditory research, and augmentative and alternative communication. Three lecture hours a week for one semester. May be repeated for credit when the topics vary. Prerequisite: Graduate standing.

### **SLH 385F. Knowledge and Skills in Clinical Science I.**

Develop the knowledge and skills needed in clinical areas across the scope of practice and lifespan. Three lecture hours a week for one semester. Communication Sciences and Disorders 385F and Speech,



Language, and Hearing Sciences 385F may not both be counted. Prerequisite: Graduate standing and consent of the graduate adviser.

### **SLH 385S. Knowledge and Skills in Clinical Science II.**

Develop the knowledge and skills needed in clinical areas across the scope of practice and lifespan. Three lecture hours a week for one semester. Communication Sciences and Disorders 385S and Speech, Language, and Hearing Sciences 385S may not both be counted. Prerequisite: Graduate standing and consent of the graduate adviser.

### **SLH 386F. Fundamental Principles in Clinical Practicum.**

Practice the fundamental knowledge and skills in speech language pathology. One lecture hour and nine practicum hours a week for one semester. May be repeated for credit. Prerequisite: Graduate standing and consent of the graduate adviser.

### **SLH 386R. Advanced Research Design and Statistics.**

Explore various aspects of research design and analysis that are commonly practiced within the field of speech-language pathology and audiology. Three lecture hours a week for one semester. Communication Sciences and Disorders 386R and Speech, Language, and Hearing Sciences 386R may not both be counted. Prerequisite: Graduate standing.

### **SLH 386S, 686S, 986S. Advanced Applications in Clinical Practicum.**

Apply the developed advanced knowledge and skills in speech language pathology. For each semester hour of credit earned, one lecture hour a week for one semester; some practicums require up to thirty-nine hours of fieldwork a week for one semester. May be repeated for credit. Prerequisite: Graduate standing and consent of the graduate adviser.

### **SLH 391C. Cultural and Linguistic Diversity.**

Explore current issues in provision of speech-language pathology services to children from bilingual backgrounds and adapting procedures to meet the needs of culturally and linguistically diverse families. Three lecture hours a week for one semester. Communication Sciences and Disorders 193E, 293E, 393E (Topic 10), and Speech, Language, and Hearing Sciences 391C may not both be counted. Prerequisite: Graduate standing.

### **SLH 391D. Cognitive and Linguistic Foundations of Language Development and Disorders.**

Examine a framework for understanding the cognitive and linguistic mechanisms that underlie language development and disorders, including linguistic and psycholinguistic theories of language development. Three lecture hours a week for one semester. Communication Sciences and Disorders 193E, 293E, 393E (Topic 7) and Speech, Language and Hearing Sciences 391D may not both be counted. Prerequisite: Graduate standing.

### **SLH 391E. Bilingualism: Typical and Disordered Communication in Adults.**

Examine the characteristics, assessment, and treatment practices of bilingual adults with acquired cognitive-communication disorders. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

### **SLH 391K. Bilingualism: Typical and Disordered Communication in Pediatrics.**

Examine bilingual language development and speech and language disorders in bilingual children with a special focus on Spanish-English bilingualism. Explore disorder areas including developmental language disorders, speech sound disorders, and fluency. Consider bilingual language development in cultural and linguistic contexts. Explore current issues in provision of speech-language pathology services to children

from bilingual backgrounds and adapting procedures to equitably meet the needs of culturally and linguistically diverse families. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

### **SLH 391P. Anatomy and Physiology of the Auditory System.**

Explore the structure and function of the auditory system, including hearing and balance mechanisms. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 391P, 391Q, Speech, Language, and Hearing Sciences 391P, 391Q. Prerequisite: Graduate standing.

### **SLH 392C. Counseling.**

Examine both speech-language pathology and audiology counseling roles when implementing patient-centered and family-centered care in a variety of settings. Two lecture hours and one-and-one-half laboratory hours a week for one semester. Only one of the following may be counted: Communication Science and Disorders 392C, 392Q, Speech, Language, and Hearing Sciences 392C, 392Q. Prerequisite: Graduate standing.

### **SLH 392S. Speech Perception: Theories and Clinical Aspects.**

Examine an overview of theories and research findings related to human speech perception and recognition including acoustic characteristics of speech categorical perception, infant speech perception, and effects of hearing loss. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 392P, 392S, and Speech, Language, and Hearing Sciences 392P, 392S. Prerequisite: Graduate standing.

### **SLH 393D. Dysphagia.**

Examine anatomy and physiology relevant to normal swallowing in adults and pediatrics, as well as pathophysiology associated with dysphagia of differing etiologies. Explore various methods to evaluate swallowing function, and practice beginner-level clinical interpretation, with an emphasis on evidence-based practice for dysphagia management. Three lecture hours a week for one semester. Communication Sciences and Disorders 193E, 293E, 393E (Topic 1) and Speech, Language, and Hearing Sciences 393D may not both be counted. Prerequisite: Graduate standing.

### **SLH 393F. Stuttering, Cluttering, and Typical Disfluency.**

Review theories, research, and emerging evidence pertaining to stuttering, cluttering and typical disfluency and their translation to practice. Three lecture hours a week for one semester. Communication Sciences and Disorders 193D, 293D, 393D (Topic 3) and Speech, Language, and Hearing Sciences 393F may not both be counted. Prerequisite: Graduate standing.

### **SLH 393G. Developmental Speech Disorders.**

Examine research in articulation and phonological development and the application of theories of development to assessment and intervention procedures with children with deficits in articulation and/or phonology. Three lecture hours a week for one semester. Communication Sciences and Disorders 193D, 293D, 393D (Topic 2) and Speech, Language, and Hearing Sciences 393G may not both be counted. Prerequisite: Graduate standing.

### **SLH 393J. Acquired Cognitive Communication Disorders II.**

Examine the characteristics, assessment, and clinical management of acquired neurogenic disorders of cognition and communication, such as traumatic brain injury (TBI) and dementia. Three lecture hours a week for one semester. Communication Sciences and Disorders 393J and

Speech, Language, and Hearing Sciences 393J may not both be counted. Prerequisite: Graduate standing.

### **SLH 393M. Acquired Cognitive Communication Disorders I.**

Examine characteristics, assessment, and clinical management of acquired neurogenic disorders of cognition and communication, such as aphasia and right hemisphere disorders. Three lecture hours a week for one semester. Communication Sciences and Disorders 193E, 293E, 393E (Topic 3) and Speech, Language, and Hearing Sciences 393M may not both be counted. Prerequisite: Graduate standing.

### **SLH 393P. Preschool Language Disorders.**

Examine communication deficits unique to children from birth to age five. Three lecture hours a week for one semester. Communication Sciences and Disorders 393P and Speech, Language, and Hearing Sciences 393P may not be counted both. Prerequisite: Graduate standing.

### **SLH 393Q. Acquired Speech Disorders.**

Examine the neurological foundations of speech, speech disorders that can develop as a result of damage to the nervous system, and the ways in which motor speech disorders can be diagnosed and managed. Three lecture hours a week for one semester. Communication Sciences and Disorders 193F, 293F, 393F (Topic 2) and Speech, Language, and Hearing Sciences 393Q may not both be counted. Prerequisite: Graduate standing.

### **SLH 393S. School-Age Language Disorders.**

Examine communication deficits unique to children age five and beyond. Three lecture hours a week for one semester. Communication Sciences and Disorders 393S and Speech, Language, and Hearing Sciences 393S may not both be counted. Prerequisite: Graduate standing.

### **SLH 393V. Voice Disorders.**

Examine normal and disordered voice production, as well as assessment and treatment of voice. Explore the anatomy and physiology of voice, pathologies of voice, instrumental and non-instrumental methods for voice assessment, and interdisciplinary voice management. Three lecture hours a week for one semester. Communication Sciences and Disorders 191D, 293D, 393D (Topic 1) and Speech, Language, and Hearing Sciences 393V may not both be counted. Prerequisite: Graduate standing.

### **SLH 394C. Amplifying Systems in Aural Rehabilitation.**

Examine the principles of hearing aid circuitry and looped systems, ear molds and their acoustic properties, and electroacoustic properties of hearing aids and selection procedures. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 394C, 394P, Speech, Language, and Hearing Sciences 394C, 394P. Prerequisite: Graduate standing, background in audiology coursework, and consent of instructor.

### **SLH 194D, 394D. Hearing Conservation.**

Examine auditory and non-auditory effects of noise; damage-risk criteria; federal and state laws governing noise and noise control; acoustic measurement procedures; identification audiometry; ear protection; and non-organic hearing loss and evaluative procedures. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 394D, 394Q, Speech, Language, and Hearing Sciences 194D, 394D, 194Q, 394Q. Prerequisite: Graduate standing.

### **SLH 394E. Auditory Electrophysiology.**

Review the auditory nervous system and evaluate electrodermal, electroencephalographic, and electrocardiographic audiometry in depth. Three lecture hours a week for one semester. Only one of the following

may be counted: Communication Sciences and Disorders 394G, 394E, and Speech, Language, and Hearing Sciences 394G, 394E. Prerequisite: Graduate standing.

### **SLH 395M. Applied Machine Learning and Data Analytics.**

Introduction to the fundamental concepts of machine learning with a focus on its practical use for those who have no engineering or computer science background. Explore basic mathematics (e.g., vector and matrix), specialized programming skills (e.g., Matlab for data processing, visualization, and analysis), and other data analysis techniques (e.g., principal component analysis). Three lecture hours a week for one semester. Prerequisite: Graduate standing.

### **SLH 395N. Neurobiological Perspectives on Speech and Language.**

Explore an overview of sensory, motor, and neurophysiological correlates of speech and language. Examine neuroanatomy and neurophysiology of the human brain, with an emphasis on motor pathways, representation in the brain, neuroimaging, neurophonetic processing, and hemispheric specialization. Three lecture hours a week for one semester. Communication Sciences and Disorders 395N and Speech, Language, and Hearing Sciences 395N may not both be counted. Prerequisite: Graduate standing.

### **SLH 396C. Advanced Amplifying Systems.**

Explore the fitting of advanced amplification systems, including digital hearing aids, frequency modulation and other wireless systems, and assistive listening devices. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 396C, 396Q, Speech, Language, and Hearing Sciences 396C, 396Q. Prerequisite: Graduate standing and Speech, Language, and Hearing Sciences 394C (or Communication Sciences and Disorders 394C).

### **SLH 396D. Auditory Processing Disorders.**

Examine the assessment and treatment of disorders of the central auditory nervous system in children and adults. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 381P, 396D, Speech, Language, and Hearing Sciences 381P, 396D. Prerequisite: Graduate standing.

### **SLH 396E. Advanced Auditory Electrophysiology.**

Explore advanced diagnostic tools, including acoustic immittance, otoacoustic emissions, auditory evoked potentials, intraoperative monitoring, and vestibular function. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 396E, 396R, Speech, Language, and Hearing Sciences 396E, 396R. Prerequisite: Graduate standing and Speech, Language, and Hearing Sciences 394E (or Communication Sciences and Disorders 394E).

### **SLH 396M. Signals and Systems in Hearing and Speech.**

Explore electrophysiological and electroacoustic procedures in the study of communication behaviors. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 396M, 396P, and Speech, Language, and Hearing Sciences 396M, 396P. Prerequisite: Graduate standing.

### **SLH 698. Thesis.**

The equivalent of three lecture hours a week for two semesters. Offered on the credit/no credit basis only. Prerequisite: For 698A, graduate standing in Communication Sciences and Disorders or Speech, Language, and Hearing Sciences and consent of the graduate adviser;

for 698B: Communication Sciences and Disorders 698A or Speech, Language, and Hearing Sciences 698A.

### **SLH 398T. Supervised Teaching.**

Three lecture hours a week for one semester. Communication Sciences and Disorders 398T and Speech, Language, and Hearing Sciences 398T may not both be counted. Offered on the letter-grade basis only. Prerequisite: Graduate standing.

### **SLH 399W, 699W, 999W. Dissertation.**

May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing and admission to candidacy for the Doctoral degree.

## **Professional Courses**

### **SLH 381P. Auditory Processing Disorders.**

Examine the assessment and treatment of disorders of the central auditory nervous system in children and adults. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 381P, 396D, and Speech, Language, and Hearing Sciences 381P, 396D. Prerequisite: Graduate standing.

### **SLH 383P. Surgically Implanted Auditory Prostheses.**

Explore the theory behind implantable auditory technology and application. Learn to determine implant candidacy and outcomes of implantable devices. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 383P, 396G, Speech, Language, and Hearing Sciences 383P. Prerequisite: Graduate standing.

### **SLH 383S. Applications of Surgically Implanted Auditory Prostheses.**

Learn clinically applied skills in implantable auditory devices such as programming and assessing patient outcomes. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

### **SLH 388P. Basic Clinical Practicum in Audiology.**

Restricted to students in the Doctor of Audiology program. Examine the basic foundations of practice in clinical audiology. One lecture hour and nine practicum hours a week for one semester. May be repeated for credit. Prerequisite: Graduate standing.

### **SLH 389P. Intermediate Clinical Practicum in Audiology.**

Restricted to students in the Doctor of Audiology program. Examine the intermediate methods and experiential learning in an immersive clinical audiology setting. One lecture hour and nine practicum hours a week for one semester. May be repeated for credit. Prerequisite: Graduate standing.

### **SLH 390P. Advanced Clinical Practicum in Audiology.**

Restricted to students in the Doctor of Audiology program. Examine the advanced methods and experiential learning in an immersive clinical audiology setting. One lecture hour and nine practicum hours a week for one semester. May be repeated for credit. Prerequisite: Graduate standing.

### **SLH 190Q, 390Q. Business Applications.**

Examine issues associated with the development, operation, and management of businesses devoted to service delivery in audiology and speech-language pathology. For each semester hour of credit earned, one lecture hour a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 190J, 390J,

190Q, 390Q, Speech, Language, and Hearing Sciences 190Q, 390Q. Prerequisite: Graduate standing.

### **SLH 391Q. Anatomy and Physiology of the Auditory System.**

Explore the structure and function of the auditory system, including hearing and balance mechanisms. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 391P, 391Q, and Speech, Language, and Hearing Sciences 391P, 391Q. Prerequisite: Graduate standing.

### **SLH 392P. Speech Perception: Theories and Clinical Aspects.**

Examine an overview of theories and research findings related to human speech perception and recognition including acoustic characteristics of speech categorical perception, infant speech perception, and effects of hearing loss. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 392P, 392S, and Speech, Language, and Hearing Sciences 392P, 392S. Prerequisite: Graduate standing.

### **SLH 392Q. Counseling.**

Examine both speech-language pathology and audiology counseling roles when implementing patient-centered and family-centered care in a variety of settings. Two lecture hours and one-and-one-half laboratory hours a week for one semester. Only one of the following may be counted: Communication Science and Disorders 392C, 392Q, Speech, Language, and Hearing Sciences 392C, 392Q. Prerequisite: Graduate standing.

### **SLH 394G. Auditory Electrophysiology.**

Review the auditory nervous system and evaluate electrodermal, electroencephalographic, and electrocardiographic audiometry in depth. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 394E, 394G, and Speech, Language, and Hearing Sciences 394E, 394G. Prerequisite: Graduate standing.

### **SLH 394J. Auditory Perception.**

Examine an overview of theories and research findings related to human auditory perception and recognition including acoustic characteristics of speech categorical perception, sound localization, and pitch and loudness perception. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

### **SLH 394K. Aural Habilitation.**

Examine both the pediatric and educational audiologist's roles when working with hard of hearing or deaf children and their families. Three lecture hours a week for one semester. Communication Sciences and Disorders 394K (Topic 1) and Speech, Language, and Hearing Sciences 394K may not both be counted. Prerequisite: Graduate standing.

### **SLH 394P. Amplifying Systems in Aural Rehabilitation.**

Examine principles of hearing aid circuitry and looped systems; ear molds and acoustic properties thereof; electroacoustic properties of hearing aids and selection procedures. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 394C, 394P, Speech, Language, and Hearing Sciences 394C, 394P. Prerequisite: Graduate standing.

### **SLH 194Q, 394Q. Hearing Conservation.**

Examine the auditory and nonauditory effects of noise; damage-risk criteria; federal and state laws governing noise and noise control; acoustic measurement procedures; identification audiometry; ear protection; and nonorganic hearing loss and evaluative procedures. For each semester hour of credit earned, one lecture hour a week for

one semester. Only one of the following be counted: Communication Sciences and Disorders 394D and 394Q, Speech, Language, and Hearing Sciences 194D, 394D, and 194Q, 394Q. Prerequisite: Graduate standing.

#### **SLH 394S. Medical Audiology.**

Explore audiologic implications of pathology and medical and/or surgical treatment of the ear; otologic diagnoses. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 394F, 394S, Speech, Language, and Hearing Sciences 394S. Prerequisite: Graduate standing.

#### **SLH 394T. Applied Skills in Audiology.**

Apply advanced clinical skills in Audiology for challenging disorders such as tinnitus, decreased sound tolerance, and auditory dysfunction in normal hearing. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

#### **SLH 395D. Audiology, Culturally Deaf Individuals, and Education.**

Designed for graduate students in Audiology or Speech-Language Pathology. Explore aspects of deaf culture and community, Deaf/deaf identity and the experience of culturally deaf individuals, families of young deaf and hard of hearing children, and the educational system in which the children are educated. Three lecture hours a week for one semester. Only one of the following may be counted Communication Sciences and Disorders 395D, 395P, and Speech, Language, and Hearing Sciences 395D. Prerequisite: Graduate standing.

#### **SLH 395H. Diverse Communities and Care.**

Explore aspects of deaf culture and community, multicultural aspects of clinical care, diverse equity and inclusion, and professional ethics. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

#### **SLH 395K. Psychoacoustics.**

Examine anatomy and physiology of the peripheral auditory system; behavioral measures of auditory performance-masking, sound localization, pitch and loudness perception, temporary and permanent hearing loss. Three lecture hours a week for one semester. Communication Sciences and Disorders 394K (Topic 2) and Speech, Language, and Hearing Sciences 395K may not both be counted. Prerequisite: Graduate standing.

#### **SLH 395Q. Pediatric Audiology.**

Explore current methods of testing the hearing of young children, including identification, electrophysiological and operant audiometry, and medical aspects of hearing loss in children. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 395, 395Q, Speech, Language, and Hearing Sciences 395Q. Prerequisite: Graduate standing.

#### **SLH 396H. Vestibular Sciences I.**

Explore vestibular anatomy and physiology, including vestibular dysfunction in congenital and adult disorders. Three lecture hours a week for one semester. Prerequisite: Graduate standing.

#### **SLH 396J. Vestibular Sciences II.**

Learn and apply vestibular diagnostic techniques designed to assess peripheral through central vestibular function. Three lecture hours a week for one semester Prerequisite: Graduate standing and Speech, Language, and Hearing Sciences 396H.

#### **SLH 196K, 396K. Current Trends in Audiology.**

For each semester hour of credit earned, one lecture hour a week for one semester. Communication Sciences and Disorders 394K (Topic 3) and Speech, Language, and Hearing Sciences 196K, 396K may not both

be counted. Prerequisite: Graduate standing; successful completion of deafness studies competency.

#### **SLH 396P. Signals and Systems in Hearing and Speech.**

Explore electrophysiological and electroacoustic procedures in the study of communication behaviors. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 396M, 396P, and Speech, Language, and Hearing Sciences 396M, 396P. Prerequisite: Graduate standing.

#### **SLH 396Q. Advanced Amplifying Systems.**

Explore the fitting of amplification systems in various clinical populations, with a main focus on pediatric amplification followed by complex amplification cases across the lifespan. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 396C, 396Q, and Speech, Language, and Hearing Sciences 396C, 396Q. Prerequisite: Graduate standing.

#### **SLH 396R. Advanced Auditory Electrophysiology.**

Examine advanced diagnostic tools, including acoustic immittance, otoacoustic emissions, auditory evoked potentials, intraoperative monitoring, and vestibular function. Three lecture hours a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 396E, 396R, and Speech, Language, and Hearing Sciences 396E, 396R. Prerequisite: Graduate standing.

#### **SLH 397, 697, 997. Clinical Externship in Audiology.**

Restricted to students in the Doctor of Audiology program. Engage in an intensive clinical experience in a professional setting. For each semester hour of credit earned, one lecture hour a week for one semester; some practicums require up to thirty-nine hours of fieldwork a week for one semester. May be repeated for credit. Offered on the credit/no credit basis only. Prerequisite: Graduate standing and consent of instructor.

#### **SLH 198P. Audiology Research Practicum.**

Conduct research under the mentorship of an Audiology Faculty member. Present a prospectus at the end of the second year to faculty and peers. Present findings to faculty/peers and present at conference and/or submission for publication at the end of the third year One lecture hour a week for one semester. May be repeated for credit. Prerequisite: Graduate Standing.

#### **SLH 398Q. Research Project in Audiology.**

Learn about conducting a research study and how to design a study. Read and integrate relevant literature and develop hypotheses and research plan. Identify a mentor for the Audiology Research Practicum. For each semester hour of credit earned, the equivalent of one lecture hour a week for one semester. Only one of the following may be counted: Communication Sciences and Disorders 398P, 398Q, Speech, Language, and Hearing Science 398Q. Prerequisite: Graduate standing.