# Department of Speech-Language-Hearing: Sciences and Disorders

# Why study speech, language, and hearing?

Because communication is central to human behavior, and the treatment of communication disorders requires specialized knowledge and skills.

### **Career Opportunities**

An undergraduate degree in SPLH contributes to preparation for careers in a range of fields related to communication disorders including neuroscience, medicine and related health professions, education, and assistive technology. In addition, an undergraduate degree in speech-language hearing is an entry point for graduate study in speech-language pathology or audiology. Most states have laws mandating that speech-language pathologists and audiologists be licensed to practice their profession. The minimum requirement for licensure in most states is a master's degree for speech-language pathology and the Au.D. for audiology. Speech-language pathologist and audiologists are in high demand with job growth expected to continue into the future. Individuals with bachelor degrees may work as an assistant to licensed professionals in settings such as schools and clinics, or may pursue employment in related fields.

### **Undergraduate Programs**

Basic study in speech, language, and hearing is provided through B.A. and B.G.S. programs. Undergraduates study the basic processes of human communication. Programs are designed for the student who seeks a career related to speech, language, or hearing or to communication development and communication disorders. The majority of undergraduate courses are offered both fall and spring semester to maintain a smaller class size and facilitate timely graduation. Courses are taught using interactive and flexible formats that provide ample opportunity for hands-on experiential learning. There are numerous opportunities to engage in learning outside the classroom through faculty-mentored research projects, collaborative clinical experiences, and study abroad opportunities. Courses and experiences set the stage for a successful career in audiology, speech-language pathology, neurosicence, medicine and related health professions, education, and assistive technology.

Qualified KU undergraduates may earn both a B.A. in Speech-Language-Hearing: Sciences and Disorders and M.A. in Speech-Language Pathology in approximately 5 years through the Accelerated M.A. program (http://catalog.ku.edu/liberal-arts-sciences/speech-language-hearing/ama).

### **Graduate Programs**

Graduate study at KU is offered through the Intercampus Program in Communicative Disorders, which is a partnership between the Department of Speech-Language-Hearing on the Lawrence campus and the Department of Hearing and Speech on the medical center campus in Kansas City. Degrees offered include a clinical doctorate in audiology, a master's degree in speech-language pathology, a post-master's clinical

doctorate in speech-language pathology, and Ph.D. degrees in audiology and speech-language pathology. Students engage in classes, research, and clinical work in Lawrence and at KU Medical Center in Kansas City.

Students who are interested in enrolling in graduate level coursework in the Department of Speech-Language-Hearing without formal admission to a graduate program at KU are encouraged to apply for graduate non-degree seeking student status. Admission is highly selective and non-degree seeking students must consult with an advisor on class selection prior to enrollment. See the Department's website (http://www.kumc.edu/school-of-health-professions/hearing-and-speech.html) for further details.

#### Courses

#### SPLH 120. The Physics of Speech. 4 Hours N.

An introduction to the acoustic structure of speech intended for nonscience majors. Emphasis will be placed on the methods and standards by which scientists measure and evaluate the physical characteristics of speech. Topics will include: simple harmonic motion, the propagation of sound waves, aerodynamic aspects of vocal fold vibration, resonance, digital speech processing, frequency analysis, and speech synthesis. Three class hours and one laboratory per week. (Same as LING 120.) Prerequisite: MATH 101 or 104 or equivalent. LEC.

#### SPLH 177. First Year Seminar: \_\_\_\_\_. 3 Hours GE11 / U.

A limited-enrollment, seminar course for first-time freshmen, addressing current issues in Speech-Language and Hearing. Course is designed to meet the critical thinking learning outcome of the KU Core. First-Year Seminar topics are coordinated and approved by the Office of First-Year Experience. Prerequisite: First-time freshman status. LEC.

#### SPLH 250. Study Abroad Topics in: \_\_\_\_. 1-5 Hours S.

A course designed to enhance international experience in topic areas related to speech-language-hearing at the freshman/sophomore level. Coursework must be arranged through the Office of KU Study Abroad. May be repeated for credit if the content differs. Prerequisite: Department permission. LEC.

#### SPLH 261. Survey of Communication Disorders. 3 Hours SI GE3S / S.

Provides a general understanding of normal and deviant speech, language, and hearing in adults and children. This course considers the normal development of communication behavior, the nature of communication disorders, and the interaction of speech pathology and audiology with allied fields (e.g., education, medicine, psychology, special education). LEC.

#### SPLH 418. Introduction to Cognitive Science. 3 Hours S.

Examines the data and methodologies of the disciplines that comprise Cognitive Science, an inter-disciplinary approach to studying the mind and brain. Topics may include: consciousness, artificial intelligence, linguistics, education and instruction, neural networks, philosophy, psychology, anthropology, evolutionary theory, cognitive neuroscience, human-computer interaction, and robotics. (Same as LING 418, PHIL 418, and PSYC 418.) Prerequisite: Consent of instructor. LEC.

#### SPLH 432. Human Behavioral Genetics. 3 Hours S.

A survey of human behavioral genetics for upper division undergraduates. Emphasis is on how the methods and theories of quantitative, population, medical, and molecular genetics can be applied to individual and group differences in humans. Both normal and abnormal behaviors are covered, including intelligence, mental retardation, language and language disorders, communication, learning, personality, and psychopathology. (Same as ANTH 447, BIOL 432, PSYC 432.) Prerequisite: Introductory courses in biology/genetics or biological anthropology and psychology are recommended. LEC.

### SPLH 449. Laboratory/Field Work in Human Biology. 1-3 Hours AE61 / N.

Faculty supervised laboratory or field research for Human Biology majors. Students design and complete a research project in collaboration with a Human Biology faculty member. (Same as ANTH 449, BIOL 449, and PSYC 449.) Prerequisite: Consent of instructor and Human Biology major. I AB.

#### SPLH 450. Study Abroad Topics in: \_\_\_\_\_. 1-5 Hours S.

A course designed to enhance international experience in topic areas related to speech-language-hearing at the junior/senior level. Coursework must be arranged through the Office of KU Study Abroad. May be repeated for credit if the content differs. Prerequisite: Department permission. LEC.

## SPLH 451. Directed Study Abroad in Speech-Language-Hearing. 1-3 Hours S.

An independent study designed to enhance international experience in topic areas related to speech-language hearing. Investigation of special topic or project selected by the student with advice, approval, and supervision by a KU SPLH instructor and an authorized agent of the study abroad site. Experience must be arranged through the Office of KU Study Abroad. Such study may take the form of directed reading and/or directed research/clinical observation. A daily journal and final report is required. A maximum of six hours of credit may be counted, with no more than three in a single area of study. Prerequisite: Consent of instructor IND.

#### SPLH 452. Examining Global Perspectives in Speech-Language-Hearing: \_\_\_\_\_\_. 3 Hours AE42.

For students enrolled in an SPLH-sponsored Study Abroad program. Students participate in 12 hours of meetings in preparation for the Study Abroad experience. Pre-trip meetings focus generally on multi-cultural issues relevant to speech-language-hearing practice as well as specific cultural, linguistic, and service delivery issues for the target country. Students spend two weeks abroad, visiting sites to observe different types of service delivery for people with disabilities and places that are culturally and historically relevant. Periodic debriefing and small group discussions are conducted during the time abroad. A daily journal and post-visit reflection paper is required. Prerequisite: Instructor permission required. FLD.

#### SPLH 462. Principles of Speech Science. 3 Hours N.

Survey of the physiology of speech production, and the physics of sound. Emphasis upon methodologies in the laboratory study of normal speech. Prerequisite: SPLH 120, or concurrent enrollment in SPLH 120 or consent of instructor. LEC.

#### SPLH 463. Principles of Hearing Science. 3 Hours N.

This class discusses the concepts and principles relevant to normal hearing processing: anatomy, psychophysical methods, and basic subjective correlates of the auditory system. Prerequisite: SPLH 120, or concurrent enrollment in SPLH 120, or consent of instructor. LEC.

#### SPLH 464. Undergraduate Seminar in: \_\_\_\_\_. 1-3 Hours S.

Course organized any given semester to study particular subject matter or to take advantage of special competence by an individual faculty member. Topics change as needs and resources develop. Class discussion, readings, and individual projects. (Distribution credit given for two-three hours only.) LEC.

#### SPLH 465. Fundamentals of Clinical Phonetics. 1 Hour S.

Introduction to classification of American English speech sounds based on articulatory phonetics. Practice in phonetic transcription and analysis of normal and abnormal speech. Laboratory exercises to give students hands-on experience with selected topics from lecture. Prerequisite: Corequisite: SPLH 120. LEC.

#### SPLH 466. Language Science. 3 Hours S.

Introduction to structure/function of human languages as it relates to language development and disorders; processes involved in the expression and reception of language and the methodologies employed to study these processes. LEC.

### SPLH 497. Mentored Research Experience. 2-8 Hours AE61 / S.

Study may be directed toward either reading for integration of knowledge and insight in Speech-Language-Hearing, or original research in the field. Student creates a plan of activities at the beginning of each semester under the mentor's guidance. Student and mentor review this plan at the end of each semester to evaluate progress. In the final semester of enrollment, student must complete a written report or a public oral presentation detailing the purpose, methods, results, and impact of the research. This final product partially meets the requirements for Research Experience Certification. (Eight hours maximum credit, which may be distributed through 4 semesters. No student may enroll for less than two hours credit or more than 4 hours of credit in a given semester). Prerequisite: Consent of Departmental Research Experience Coordinator. IND.

#### SPLH 498. Departmental Honors Research. 2-8 Hours AE61 / S.

Study may be directed toward either reading for integration of knowledge and insight in Speech-Language-Hearing, or original research in the field. Student creates a plan of activities at the beginning of each semester under the mentor's guidance. Student and mentor review this plan at the end of each semester to evaluate progress. In the final semester of enrollment, student must complete a written report or a public oral presentation detailing the purpose, methods, results, and impact of the research. This final product partially fulfills the requirements for Departmental Honors. (Eight hours maximum credit, which may be distributed through 4 semesters. No student may enroll for less than two hours credit or more than 4 hours of credit in a given semester). Prerequisite: Consent of Departmental Honors Coordinator. IND.

### SPLH 499. Directed Study in Speech-Language-Hearing. 1-3 Hours AE61 / S.

Investigation of special topic or project selected by the student with advice, approval, and supervision of an instructor. Such study may take the form of directed reading and/or directed research/clinical observation. Individual reports and conferences. (Distribution credit given for two-three hours only.) A maximum of six hours of credit may be counted, with not more than four in a single area of study.) Prerequisite: Consent of instructor. IND.

#### SPLH 516. Speech Perception. 2 Hours S.

Acoustic and perceptual characteristics of phonemes, words, and connected speech for normal-hearing adults and infants; how speech perception is assessed clinically and is affected by hearing loss, aging, use of amplification, talker differences, and linguistic factors. Prerequisite: SPLH 120 Physics of Speech. Prerequisite or Corequisite: SPLH 463 Principle of Hearing Science. LEC.

#### SPLH 565. Language Sample Analysis Lab. 1 Hour S.

The study of the analysis of language produced by children with respect to its phonological, lexical, morphological, syntactic, and pragmatic characteristics. Prerequisite: Corequisite: SPLH 566. LAB.

#### SPLH 566. Language Development. 3 Hours SI GE3S / S.

Study of language acquisition in children, including phonologic, morphologic, syntactic, and semantic components. Methods of language measurement, the role of comprehension, and pragmatic aspects of language use are included. May be taught in lecture or online format. LEC.

### SPLH 568. Introduction to Audiological Assessment and Rehabilitation. 4 Hours U.

Introduction to methods for assessing and treating hearing disorders in adults and children, as well as conditions that result in hearing loss. Course includes clinical observation and extensive hands-on experience with clinical techniques. Prerequisite: SPLH 463. LEC.

#### SPLH 571. Introduction to Speech-Language Pathology. 4 Hours U.

This course provides training in clinical management of communicative disorders in children and adults. Principles of evaluation, application of diagnostic information, intervention planning, intervention process, data collection and application, report writing, and interactions with parents and other professionals are examined. Participation in observation and laboratory activities is required. LEC.

### SPLH 588. Multicultural Considerations in Speech-Language-Hearing I. 2 Hours S.

This course introduces foundational concepts of culture and diversity, bilingualism, bias, and components and processes leading to cultural competency. Students explore health and educational disparities in the United States and beyond. Students will reflect on their cultural identity, and how their experiences and perspectives may differ from others, and how their experiences can influence service delivery in speech-language pathology and audiology. Prerequisite: SPLH 566 or LING 415 or consent of instructor. LEC.

### SPLH 589. Multicultural Considerations in Speech-Language-Hearing II. 2 Hours S.

This course builds on foundational concepts from SPLH 588 by exploring potential cultural and linguistic characteristics of populations that are typically underrepresented in many sectors of the Unites States, including education and health care. Case studies are implemented to examine cultural and linguistic influences on assessment and treatment processes in speech-language pathology and audiology. Prerequisite: SPLH 588. LEC.

# SPLH 620. The Communicating Brain: The Ultimate Personal Computer. 3 Hours U.

This course introduces the study of human neuroscience with a particular focus on human communication. The course provides an overview of the relevant anatomical structures and function along with an introduction to the basic methods used to investigate central nervous system function. Students are introduced to the study of perceptual, motor, and language function in the nervous system through a series of examples drawn from normal function and clinical cases. The examples are selected to highlight how these systems develop and are influenced by experience, implantable devices developed to interface with the nervous system, and how computers and animals are used as models to learn about nervous system function. Prerequisite: A 400-level course in SPLH, or consent of instructor. LEC.

## SPLH 660. Research Methods in Speech-Language-Hearing. 3 Hours AE61.

Research Methods is about the methods used to conduct, describe and evaluate science in communication disorders. Goals for learner outcomes include: 1) evaluation of research including adequacy of research to address scientific and clinical problems, 2) reading, summarizing and describing research through a literature review, 3) describing a hypothetical research study that addresses a specific question or hypothesis identified by the student, and 4) providing constructive peer reviews of research paper drafts. Prerequisite: 9 credits of SPLH course work; English 101 and ENGL 102 (or course meeting core skill in written communication); or consent of instructor. LEC.

#### SPLH 670. Beginning Clinical Practice in Audiology. 1-3 Hours N.

Testing of hearing using pure tone air and bone conduction tests with both normal and hearing-impaired individuals. Prerequisite: SPLH 568, or concurrent enrollment in SPLH 568, overall GPA 3.0 and consent of instructor. FLD.

## SPLH 672. Clinical Practice in Speech-Language Pathology. 3 Hours S.

Clinical practice with children and adults. Group and individual conferences with staff required. Repeatable once for credit. Prerequisite: SPLH 571 and overall GPA of 3.0. FLD.

#### SPLH 716. Speech Perception. 2 Hours.

Acoustic and perceptual characteristics of phonemes, words, and connected speech for normal-hearing adults and infants; how speech perception is assessed clinically and is affected by hearing loss, aging, use of amplification, talker differences, and linguistic factors. (Same as AUD 816.) LEC.

#### SPLH 752. Examining Global Perspectives in Speech-Language-Hearing: \_\_\_\_\_\_. 3 Hours.

For students enrolled in an SPLH-sponsored Study Abroad program. Students will participate in 12 hours of meetings in preparation for the Study Abroad experience. Pre-trip meetings will focus generally on multicultural issues relevant to speech-language-hearing practice as well as specific cultural, linguistic, and service delivery issues for the target country. Students may be required to facilitate discussions or prepare presentations for these meetings. Students will spend two weeks abroad, visiting sites to observe different types of service delivery for people with disabilities and places that are culturally and historically relevant. Students may partner with undergraduates to facilitate any clinically focused experiences. Periodic debriefing and small group discussions will be conducted during the time abroad. A daily journal and post-visit reflection paper will be required. FLD.

#### SPLH 764. Seminar in: \_\_\_\_\_. 1-3 Hours.

The subject matter of this seminar will be special topics from speech pathology and audiology. Special prerequisite may be established for a given topic. LEC.

#### SPLH 799. Proseminar in Child Language. 2 Hours.

A review and discussion of current issues in children's language acquisition. May be repeated for credit. Graded on a satisfactory/ unsatisfactory basis. (Same as ABSC 797, CLDP 799, LING 799 and PSYC 799.) (Formerly HDFL 797.) LEC.

#### SPLH 816. Language Development. 3 Hours.

Study of language acquisition in children, including the morphologic, syntactic, and semantic components. Methods of language measurement, the role of comprehension, and pragmatic aspects of language use will be included. Not open to students who have credit for SPLH 566. Laboratory by appointment. LEC.

#### SPLH 820. Developmental Phonological Disorders. 2 Hours.

Focuses on speech and non-speech characteristics of children with developmental phonological disorders. Emphasis placed on collection and phonetic transcription of speech samples, phonological analysis of transcribed data, and decision-making processes in assessment and intervention. LEC.

#### SPLH 822. Dysarthria/Apraxia. 2 Hours.

This course describes the neuroanatomic bases of motor-speech processes, the diagnosis, classification, assessment, prognosis, and treatment of dysarthria(s) and apraxia(s). LEC.

#### SPLH 824. Fluency Disorders. 2 Hours.

The nature of stuttering in children and adults is discussed. Theories regarding etiology, development, and maintenance of the disorder are presented. Emphasis is placed on various clinical approaches to assessment, measurement, and treatment. LEC.

#### SPLH 826. Phonatory Disorders. 2 Hours.

This course reviews the function of the laryngeal and respiratory mechanisms including the parameters and processes of phonation. Primary content addresses diagnosis, description, and treatment of organic and non-organic disorders of phonation. LEC.

#### SPLH 828. Speech Disorders in Special Populations. 2 Hours.

This course reviews anatomy and physiology of the velopharyngeal mechanism. Diagnosis and management of velopharyngeal dysfunction and associated problems considered. Anatomy, physiology, and rehabilitation associated with certain oral, pharyngeal, and laryngeal abnormalities discussed. Emphasis is on the speech problems of adults following medical management. Populations include individuals with laryngectomies, glosectomies, and tracheotomies. LEC.

#### SPLH 832. Dysphagia. 2 Hours.

This course covers normal and disordered swallowing. Evaluation and treatment of swallowing disorders, the dysphagia team, and dysphagia in special populations are considered. LEC.

### SPLH 840. Language Disorders of Children: Infants and Toddlers. 2 Hours.

This course examines factors relating to language disorders in the birth to three population. At-risk populations, as well as those with known etiologies, are considered. Information on assessment, intervention, and service delivery models is addressed. Issues relating to Public Law 99-457 are also examined. LEC.

#### SPLH 842. Language Disorders of Children: Preschool. 2 Hours.

This course examines language disorders of preschool-age children in the late preschool years. The course includes information on incidence, characteristics, assessment, and intervention. Theoretical issues and their implication for language intervention are also examined. LEC.

#### SPLH 844. Language Disorders of Children: School Age. 2 Hours.

This course examines language development during the school years and how problems in this development interact with school performance. Emphasis is placed on the role of the speech-language pathologist in the early identification, assessment, and remediation of language-learning problems. LEC.

#### SPLH 846. Language Disorders of Adults. 2 Hours.

Neurological aspects of language processes, classification of aphasia, and assessment of language deficits are discussed. Management approaches including intervention strategies and rehabilitation are also considered. LEC.

#### SPLH 848. Language Disorders of Special Populations. 2 Hours.

This course focuses on the unique language impairments of individuals with mental retardation, autism, cerebral palsy, hearing impairments, dual sensory impairments, and other communication disorders (e.g., ADD). Language characteristics as well as assessment and intervention strategies are studied. LEC.

### SPLH 850. Language Disorders Secondary to Closed Head Injury and Dementia. 2 Hours.

Neuroanatomy and physiology relevant to diffuse brain injury are discussed. Characteristics and intervention strategies relating to traumatic brain injury and dementia are studied. LEC.

#### SPLH 852. Augmentative and Alternative Communication. 2 Hours.

This course describes augmentative and alternative communication (AAC) assessment and intervention issues as they apply to children and adults with both congenital and acquired speech and/or language disabilities. Areas of study include AAC systems, assessment strategies and procedures, intervention strategies, and AAC information resources. LFC.

### SPLH 853. Augmentative and Alternative Communication and Adult Acquired Disorders. 2 Hours.

This course will build on the concepts of assessment and intervention obtained in the Augmentative and Alternative Communication (AAC) course. Content will be related specifically to adults with acquired communication disorders. Information about low and high tech AAC systems appropriate for adults, assessment protocols, approaches to intervention, and advocacy will be applied in a case-based format. LEC.

#### SPLH 854. Reading Disorders. 2 Hours.

This course addresses the perceptual, linguistic, and cognitive processes utilized in written communication. Acquired and developmental disorders of written language are examined in relation to issues concerning characteristics, etiology, early identification, assessment, and remediation. LEC.

#### SPLH 860. Evaluation of Speech and Language. 2 Hours.

Provides a general framework for speech and language evaluations. Issues related to initiation and termination of treatment are discussed. Practice is provided in evaluating norm- and criterion-referenced information used in diagnostic, referral, and treatment decisions. LEC.

# SPLH 861. Seminar in Research Methodology in Speech Pathology and Audiology: \_\_\_\_\_. 3 Hours.

This seminar is concerned with the design, instrumentation, execution, and reporting of research in audiology and speech pathology. SPLH 760 or its equivalent and some statistics are recommended before entering this seminar. LEC.

#### SPLH 862. Clinical Processes. 1 Hour.

Orients student to clinical procedures, policies, requirements, and expectations of program. Therapy models, planning, and philosophies are discussed along with implementation and evaluation of therapy procedures. Professional issues are also considered. May be repeated for credit. LEC.

### SPLH 864. Advanced Clinical Practice in Speech-Language Pathology. 1-6 Hours.

Students conduct supervised clinical work in a variety of settings. May be repeated for credit. Prerequisite: Department approval. Group and individual conferences with staff required. FLD.

#### SPLH 866. Field Study in Speech-Language Pathology. 5-12 Hours.

The field study provides work experiences in clinical and/or research activities. The student takes this course near the end of the degree program. Assignments include supervised work in a variety of approved settings. May be repeated for credit. Prerequisite: Advisor's consent. FLD.

#### SPLH 868. Professional Issues. 1 Hour.

Forum for the presentation and discussion of scientific and professional issues by faculty and advanced graduate students. May be repeated for credit. SEM.

#### SPLH 874. Master's Research Practicum. 1-3 Hours.

This course is designed to give students experience in conducting research. Students apply and extend their knowledge and skills by participating in a research project under the supervision of a mentor. Students may assist with or independently conduct research in speech,

language, or hearing. Prerequisite: SPLH 660 or equivalent research methods course. RSH.

### SPLH 876. Independent Study in Problems of Speech, Language, and Hearing. 1-6 Hours.

Investigation of special topics by individual master's level students. Paper required. Prerequisite: Consent of instructor. RSH.

### SPLH 880. Seminar in Speech-Language Pathology: \_\_\_\_\_. 1-3

May be repeated for credit. LEC.

### SPLH 888. Multicultural Considerations in Speech-Language-Hearing I. 1 Hour.

This course introduces foundational concepts of culture and diversity, bilingualism, bias, and components and processes leading to cultural competency. Students explore health and educational disparities in the United States and beyond. Students will reflect on their cultural identity, and how their experiences and perspectives may differ from others, and how their experiences can influence service delivery in speech-language pathology and audiology. This course is offered at the 500 and 800 levels, with additional assignments at the 800 level. LEC.

### SPLH 889. Multicultural Considerations in Speech-Language-Hearing II. 1 Hour.

This course builds on foundational concepts from SPLH 888 by exploring potential cultural and linguistic characteristics of populations that are typically underrepresented in many sectors of the Unites States, including education and health care. Case studies are implemented to examine cultural and linguistic influences on assessment and treatment processes in speech-language pathology and audiology. This course is offered at the 500 and 800 levels, with additional assignments at the 800 level. Prerequisite: SPLH 888 or consent of instructor. LEC.

#### SPLH 899. Master's Thesis. 1-6 Hours.

Thesis Hours. Graded on a satisfactory progress/limited progress/no progress basis. THE.

#### SPLH 900. Proseminar in Communicative Disorders. 1 Hour.

A weekly forum for students and faculty to discuss professional issues and interdisciplinary research in communicative disorders and related fields. May be repeated for credit. Limited to two hours credit counted toward an MA or AuD degree. Limited to four hours credit counted toward the PhD degree. Graded on satisfactory/unsatisfactory basis. SEM.

#### SPLH 964. Seminar in: \_\_\_\_\_. 1-3 Hours.

The subject matter of this seminar will be special topics from speech pathology and audiology, including those related to research methodology and research or academic careers. Special prerequisites may be established for a given topic. LEC.

#### SPLH 966. Seminar in Language Development. 3 Hours.

The course pertains to relevant research regarding infant speech development, vocabulary development, linguistic development, articulation development, and language retardation. (Same as ABSC 920, formerly HDFL 920.) LEC.

#### SPLH 968. Seminar in Communication Disorders. 3 Hours.

Study in depth of the communication behavior associated with brain injury and/or oral anomalies. LEC.

### SPLH 970. Independent Study in Problems of Speech and Hearing. 1-6 Hours.

Investigation of special topics by individual students. Paper required. RSH.

#### SPLH 974. Doctoral Research Practicum. 1-6 Hours.

Application of research methodology in a laboratory situation. Emphasis is on direct participation in designing and conducting an experimental investigation in speech or hearing. FLD.

### SPLH 975. Directed Teaching: Speech Pathology and Audiology. 1-3 Hours.

Provides experiences in classroom and laboratory instruction under supervision of graduate faculty. Variable credit to reflect amount of instructional responsibility assumed. May be repeated up to a maximum of six semester hours. FLD.

#### SPLH 976. Independent Study in Grant Writing. 1-3 Hours.

Students will identify a funding agency appropriate for their research, learn the application procedures for that agency, and draft a grant application following the identified agency's format. The faculty mentor will arrange for a review of the grant application following the agency's review criteria and format. May be repeated up to a maximum of three credits. IND.

#### SPLH 982. Issues in Scientific Conduct. 3 Hours.

Lectures and discussion on issues in the conduct of a scientific career, with emphasis on practical topics of special importance in behavioral science. Topics will include the academic and scientific roles of behavioral scientists, establishing a research lab, communicating research findings, tenure processes, gender equity, ethical conduct, and good scientific citizenship. Discussions will highlight important case studies. (Same as CLDP and PSYC 982.) LEC.

### SPLH 998. Investigation and Conference (For Doctoral Candidates).

(Limited to eight hours credit towards the Ph.D. degree.) Readings, critical thinking, and scientific writing in preparation for the oral comprehensive exam. RSH.

#### SPLH 999. Doctoral Dissertation. 1-12 Hours.

Dissertation Hours. Graded on a satisfactory progress/limited progress/no progress basis. THE.