Restriction: Hearing & Speech Sciences department.
Prerequisite: An introduction to the field of audiology. Evaluation and remediation of HESP411 Introduction to Audiology (3 Credits) permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP407 Bases of Hearing Science (3 Credits)
Fundamentals of hearing, including the physics of sound, anatomy and physiology of peripheral and central auditory nervous system, psychophysical procedures used in measurement of auditory sensation and perception, and topics in psychological acoustics.
Prerequisite: Minimum grade of C- in HESP400; or permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP408 Fluency & Voice Disorders (3 Credits)
Etiology, assessment and therapeutic management of phonation, resonance, and fluency disorders in children and adults.
Prerequisite: Minimum grade of C- in HESP305; or permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP409 Acquired Neurogenic Communication Disorders in Adults (3 Credits)
Survey of the dysarthrias and aphasias in adults from an interdisciplinary point of view.
Prerequisite: Minimum grade of C- in HESP300 and HESP305; or permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP410 Bases of Speech Science (3 Credits)
Fundamentals of speech, including the physics of sound, anatomy and physiology of peripheral and central nervous system, psychophysical procedures used in measurement of auditory sensation and perception, and topics in psychological acoustics.
Prerequisite: Minimum grade of C- in HESP311; or permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP411 Introduction to Audiology (3 Credits)
An introduction to the field of audiology. Evaluation and remediation of hearing handicaps.
Prerequisite: Minimum grade of C- in HESP311; or permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP412 Aural Rehabilitation/Habilitation (3 Credits)
The fundamental aspects of aural rehabilitation therapy for both adults and children are introduced to students. Class time will consist of lectures, discussions, and hands-on activities.
Prerequisite: HESP411.
Restriction: Sophomore standing or higher.

HESP416 Principles and Methods in Speech-Language Pathology and Audiology (3 Credits)
The principles underlying the treatment of speech, language and hearing disorders in children and adults.
Prerequisite: HESP400 and HESP411; or permission of BSOS-Hearing & Speech Sciences department.
Restriction: Must be in Hearing and Speech Sciences program; or permission of BSOS-Hearing & Speech Sciences department.

HESP417 Principles and Methods in Speech-Language Pathology and Audiology (3 Credits)
Supervised observation with some direct participation in clinical methods for the treatment of disorders of articulation, fluency, child and adult language; evaluation and habilitation/rehabilitation of hearing impaired children and adults.
Prerequisite: Minimum grade of C- in HESP417.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits.

HESP422 Neurological Bases of Human Communication (3 Credits)
Basic neurology as it pertains to anatomy and physiology substrates of speech and language.
Prerequisite: HESP305; or permission of instructor.
Credit Only Granted for: HESP498 or HESP422.

HESP449 Honor Thesis Research (1-3 Credits)
Student will develop thesis proposal, conduct research, analyze results, develop and defend final written document.
Prerequisite: Permission of honors thesis advisor required.
Repeatable to: 6 credits if content differs.

HESP498 Seminar (3 Credits)
Selected topics in human communication and its disorders.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP499 Independent Study (1-3 Credits)
A directed study of selected topics pertaining to human communication and its disorders.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP600 Instrumentation in Hearing and Speech Sciences (3 Credits)
Types and principles of operation of electronic equipment used in the hearing and speech sciences.
Restriction: Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program, and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP601 Foundations of Scientific Inquiry (1 Credit)
Overview of methods of empirical research used in Communication Sciences and Disorders. The course will focus on identifying, critically analyzing, and writing about empirical research.
Restriction: Must be in Hearing and Speech Sciences: M.A. (Master’s) program, or permission of Instructor.
Additional Information: Course meets over three semesters for the duration of the Masters of Speech-Language Pathology program.
HESP602 Advanced Seminar in Neurological Bases of Communication (2 Credits)
An advanced discussion of the neural bases of human communication and its disorders, neuroimaging, neural plasticity and neurological evaluations, with emphasis on current developments and critical analysis.
**Prerequisite:** An undergraduate course in human neuroanatomy.
**Restriction:** Permission of BSOS-Hearing & Speech Sciences department.

HESP603 Seminar in Cultural and Linguistic Diversity in Communication Disorders (1 Credit)
Overview of cultural and linguistic diversity (CLD) in general, and the impact of CLD on communication, communication disorders, and the professional practice of Speech-Language Pathology
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master's) program; or permission of Instructor.

**Additional Information:** Course meets over four semesters for the duration of the Masters of Speech-Language Pathology program.

HESP605 Assessment & Intervention in Bilingual Populations (3 Credits)
Integrates foundational knowledge pertaining to bilingualism in speech-language pathology. This course provides students with a framework for working with individuals from culturally and linguistically diverse backgrounds. This course is designed to educate and train student clinicians to serve as bilingual speech-language pathologists.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program.

**HESP606 Basic Hearing Measurements (3 Credits)**
Theoretical principles, methodology, and interpretation of routine audiometric tests, including pure tone, speech, and acoustic immittance measurements. Modification of procedures for special populations. Equipment calibration and mass hearing screening programs.
**Prerequisite:** HESP411; or students who have taken courses with comparable content may contact the department.
**Restriction:** Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP610 Language Disorders in Adults (2 Credits)
Etiology, diagnosis and management of language problems of adults associated with aging, brain injury and degenerative conditions.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; or permission of instructor.

HESP611 Cognitive Disorders in Adults (2 Credits)
Etiology, diagnosis and management of cognitive problems of adults associated with aging, brain injury and degenerative conditions.
**Prerequisite:** Must have completed or be concurrently enrolled in HESP610; and must have knowledge of basic human neuroanatomy.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; or permission of instructor.

HESP612 Fluency Disorders (2 Credits)
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP613 Autism Spectrum Disorders (2 Credits)
Etiology, diagnosis and management of autism spectrum disorders.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; or permission of instructor.
**Credit Only Granted for:** HESP639A or HESP613.
**Formerly:** HESP639A.

HESP614 Orofacial Anomalies (3 Credits)
Communication disorders related to congenital orofacial anomalies with an emphasis on cleft lip and palate. Principles, methods and procedures for clinical management.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP615 Counseling in Communicative Disorders (3 Credits)
Introduction to the application of counseling principles and methodologies for working with individuals with communication disorders and their families. The role of the audiologist and speech language pathologist as counselors will be explored. Class content will focus on theoretical approaches and techniques to counseling from the fields of psychology, social work, and family the family therapy. The application of counseling in the diagnostic process as well as treatment of a wide variety of communication disorders will be highlighted throughout the course.
**Recommended:** HESP400 and HESP411.

HESP616 Language Disorders in the Pre-school Age (2 Credits)
Theoretical, empirical and clinical perspectives on language disorders in children from infancy through pre-school age.
**Prerequisite:** HESP400; or students who have taken courses with comparable content may contact the department.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP617 Cultural and Linguistic Diversity in Communication and its Disorders (2 Credits)
An exploration and discussion of cultural and linguistic diversity, its impact on communication and communication disorders, and strategies for assessment and intervention of culturally and linguistically diverse clients
**Recommended:** HESP417 or equivalent.
**Restriction:** Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master’s)).

HESP620 Speech Production Disorders Across the Lifespan (3 Credits)
Assessment and treatment of phonological, articulatory and resonance disorders arising from various etiologies including developmental conditions, structural abnormalities, and nervous system damage.
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; or permission of instructor.

HESP622 Neuromotor Disorders of Speech (3 Credits)
**Restriction:** Must be in Hearing and Speech Sciences: M.A. (Master’s) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP624 Voice Disorders (2 Credits)
Etiological characteristics, assessment and treatment of phonatory disorders in children and adults.
**Restriction:** Permission of BSOS-Hearing & Speech Sciences department; or must be in Hearing and Speech Sciences: M.A. (Master’s) program.

HESP625 Dysphagia (2 Credits)
Nature and clinical management of dysphagia as it pertains to different clinical settings for adult and pediatric populations.
**Restriction:** Permission of BSOS-Hearing & Speech Sciences department; or must be in Hearing and Speech Sciences: M.A. (Master’s) program.
HESP626 Language disorders in school-aged children and adolescents (2 Credits)
Etiology, assessment and treatment of communication and learning problems in school age children and adolescents

HESP627 Augmentative and Alternative Communication (2 Credits)
Principles, methods, and procedures for categorizing, understanding, and developing augmentative and alternative communication.
Recommended: Prior knowledge of Communication and its Disorders is required.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Credit Only Granted for: HESP639R or HESP627.

HESP630 Electrophysiological Measurements (3 Credits)
Principles and techniques of physiological and electrophysiological measures of the audio-vestibular mechanisms.
Prerequisite: HESP606.
Restriction: Must be in Clinical Audiology; Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP632 Medical Audiology (3 Credits)
Overview of auditory pathologies, and their assessment and management in the medical setting.
Prerequisite: HESP311.
Corequisite: HESP606.

HESP634 Anatomy and Physiology of the Auditory and Vestibular Systems (3 Credits)
Comprehensive examination of the anatomy and physiology of the peripheral as well as the central auditory and vestibular systems. Both afferent and efferent pathways will be considered. Applications of basic auditory neuroscience to contemporary clinical audiology practice will be highlighted.
Prerequisite: Must have completed or be concurrently enrolled in HESP311, HESP407, and HESP411; or permission of instructor.
Additional Information: Fills a requirement for the Doctoral Program in Clinical Audiology (CAUD). Open to students in other graduate programs, especially NACS.

HESP635 Aural Rehabilitation/Habilitat (3 Credits)
Principles, methods and procedures for aural rehabilitation/habilitat in children and adults.

HESP636 Geriatric Audiology (3 Credits)
Research findings are presented on the physical effects of aging on the auditory periphery and central nervous system, as well as the consequences of aging on behavioral and electrophysiologic measures of auditory function. Clinical implications in the effects of physiologic and cognitive aging on auditory performance will be discussed.
Prerequisite: HESP606 and HESP700.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master’s)).

HESP638 Research Practicum (1-3 Credits)
Analysis, synthesis and integration of knowledge related to current research or clinical issues in human communication and its related disorders.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP639 Special Topics in Hearing and Speech Sciences (1-3 Credits)
Intensive coverage of selected topics of current interest.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP645 Pediatric Audiology (3 Credits)
Evaluation and treatment of hearing-impaired children.
Prerequisite: HESP606.
Restriction: Must be in Clinical Audiology; Au.D. or Ph.D. (Doctoral) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP646 Educational Audiology (3 Credits)
Examination of historical and current trends influencing educational programming for hearing-impaired children, communication options for severely and profound hearing-impaired children, and the role of the audiologist in the educational setting.
Prerequisite: HESP606
Recommended: HESP645.

HESP648 Clinical Practice in Speech (1-3 Credits)
Supervised training in the application of clinical methods in the diagnosis and treatment of speech disorders.
Restriction: Permission of instructor.
Repeatable to: 6 credits.

HESP649 Clinical Practice in Audiology (1-3 Credits)
Supervised training in the application of clinical methods in the diagnosis and treatment of hearing disorders.
Restriction: Permission of instructor.
Repeatable to: 6 credits.

HESP658 Special Clinical Topics in Hearing and Speech (1-3 Credits)
Comprehensive coverage of selected topics pertinent to clinical issues. Specific content varies each semester, and may include supervision, clinical ethics, etc.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP700 Hearing Aids (3 Credits)
Principles, methods and procedures for selection, fitting, calibration and management of amplification systems for hearing-impaired children and adults.

HESP701 Hearing Aids II (3 Credits)
Advanced issues in amplification technology, prescriptive hearing aid selection, and management of amplification systems for special populations.
Prerequisite: HESP700.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master’s)).

HESP702 Diagnostic Procedures in Speech-Language Pathology (2 Credits)
Diagnostic tools and methods in the analysis of speech-language disorders in children and adults.
Restriction: Must be in Hearing and Speech Sciences: M.A. (Master’s) program; and permission of BSOS-Hearing & Speech Sciences department. Or permission of instructor.

HESP706 Advanced Clinical Audiology (3 Credits)
Advanced clinical and experimental methods of evaluating the peripheral and central auditory system using acoustic stimuli. Procedural considerations and interpretation of test results.
Prerequisite: HESP606; or students who have taken courses with comparable content may contact the department.
HESP708 Independent Study (1-6 Credits)
Individual research projects under guidance of a faculty member.
Restriction: Permission of instructor.
Repeatable to: 6 credits.

HESP710 Industrial and Environmental Noise Problems (3 Credits)
Restriction: Permission of instructor.

HESP712 Cochlear Implants and Other Implantable Technologies (3 Credits)
Comprehensive presentation of cochlear implant design and processing, medical/surgical aspects, evaluation, programming, outcomes in children and adults, and post stimulation care. The role of the audiologist as a member of the cochlear implant team will be emphasized. Current and emerging trends in other implantable technologies also will be covered.
Prerequisite: Must have completed or be concurrently enrolled in HESP700, HESP701, and HESP722; or permission of instructor.

HESP722 Psychoacoustics (3 Credits)
Auditory perception and auditory processing in normal and impaired hearing.

HESP724 Research Design (3 Credits)
Evaluations of research designs, critique of published articles and student involvement in designing experiments on assigned topics.
Prerequisite: Must have completed a course in basic statistics.

HESP728 Advanced Clinical Practice in Speech (1-8 Credits)
Clinical internship in selected off-campus facilities.
Prerequisite: HESP648.
Restriction: Permission of instructor.
Repeatable to: 8 credits.

HESP729 Advanced Clinical Practice in Audiology (1-8 Credits)
Clinical internship in selected off-campus facilities.
Prerequisite: HESP649.
Restriction: Permission of instructor.
Repeatable to: 8 credits.

HESP730 Vestibular-ocular Assessment and Management (Electrophysiologic Measures II) (3 Credits)
Advanced principles and methods of evaluating vestibular-ocular function using electrophysiologic measures. Includes rehabilitative issues pertaining to balance disorders and advanced electrophysiologic measures of auditory system function.
Prerequisite: HESP630.

HESP788 Graduate Research Externship (1-3 Credits)
Off-campus research internship with departmental affiliates at National Institutes of Health and other regional universities. Contact department chairman for available placements, requirements and openings.
Recommended: HESP724.

HESP799 Master's Thesis Research (1-6 Credits)

HESP808 Current Research in Hearing, Speech and Language Services (1-3 Credits)
Current research in speech, language and hearing sciences and disorders.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)) ; and permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP818 Seminar in Language Processing (3 Credits)
Information processing models of language, relationships among language, memory and cognition.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)) ; and permission of instructor.
Repeatable to: 6 credits if content differs.

HESP828 Seminar in Hearing Science (3 Credits)
Recent developments in auditory psychophysics, and/or anatomy and physiology of the peripheral and central auditory mechanisms.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)) ; and permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 6 credits if content differs.

HESP829 Clinical Internship Residency (1-9 Credits)
Off-Campus, full-time (30-40 hours/week) clinical externship in Audiology at regional and national institutions.
Prerequisite: Must have completed HESP729 for two semesters; and must have completed the comprehensive exams successfully.
Restriction: Permission of BSOS-Hearing & Speech Sciences department.
Repeatable to: 18 credits if content differs.

HESP838 Seminar in Language Acquisition (3 Credits)
Models of normal and disordered first language acquisition, second language acquisition and bilingualism.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)) ; and permission of instructor.
Repeatable to: 6 credits if content differs.

HESP848 Seminar in Audiology (3 Credits)
Research topics related to hearing assessment, amplification, and audiologic rehabilitation.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)) ; and permission of instructor.
Repeatable to: 6 credits if content differs.

HESP849 Capstone Research Project I (2 Credits)
First of two-course sequence leading to the final research requirement for the Doctor of Audiology (Au.D.) degree; involves individual study and/ or supervised lab work with mentor, preparation of research proposal (including IRB protocol if required), and attendance at Capstone Research Project Workshop.
Prerequisite: HESP724.
Restriction: Must not be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program.

HESP858 Seminar in Speech Pathology (3 Credits)
Problems in disordered articulation, voice, fluency and dysphagia.
Restriction: Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)) ; and permission of instructor.
Repeatable to: 6 credits if content differs.
HESP859 Capstone Research Project II (1-2 Credits)
Second of two-course sequence leading to the final research requirement for the Doctor of Audiology (Au.D.) degree; involves final data collection, analysis and presentation of results or completion of scholarly paper under the direction of the faculty mentor.

**Prerequisite:** Must have completed or be concurrently enrolled in HESP849.

**Restriction:** Must be in Clinical Audiology: Au.D. or Ph.D. (Doctoral) program.

HESP868 Seminar in Speech Science (3 Credits)
Problems in speech acoustics and physiology.

**Restriction:** Permission of instructor.

**Repeatable to:** 6 credits.

HESP878 Seminar in Language Disorders (3 Credits)
Congenital and acquired language disorders of children and adults.

**Restriction:** Permission of instructor.

**Repeatable to:** 6 credits.

HESP879 Academic Research Seminar (1 Credit)
An overview of issues relevant to the research process will be provided. Topics rotate on a semester basis and include ethics, grantsmanship, professional presentations, research publications, and peer review of journal articles. A formal product (e.g., poster presentation, platform presentation, peer review, IRB application) will be required each semester.

**Restriction:** Must be in Hearing and Speech Sciences: Ph.D. (Doctoral) program.

**Repeatable to:** 3 credits if content differs.

HESP887 Academic Research Seminar (2 Credits)
This course has a focused, rotating set of topics each semester to cover professional and academic issues, including ethics, grantsmanship, professional presentations, professional publications, and peer review of journal articles.

**Prerequisite:** HESP724.

**Restriction:** Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral)).

**Repeatable to:** 6 credits if content differs.

HESP888 Seminar in Neurological Bases of Language (3 Credits)
Neural strategies of language function, brain image of normal and disordered language function, and neural plasticity for language.

**Restriction:** Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral); Hearing and Speech Sciences: M.A. (Master's)); and permission of instructor.

**Repeatable to:** 6 credits if content differs.

HESP889 Doctoral Candidacy Research (1-3 Credits)
Doctoral candidacy paper research

**Restriction:** Must be in one of the following programs (Hearing and Speech Sciences: Ph.D. (Doctoral); Clinical Audiology: Au.D. or Ph.D. (Doctoral)); and permission of instructor.

**Repeatable to:** 6 credits if content differs.

HESP898 Pre-Candidacy Research (1-8 Credits)

HESP899 Doctoral Dissertation Research (1-8 Credits)