

# COMMUNICATION SCIENCE & DISORDERS (CSND)

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## **CSND 100 Fields of Communication Sciences and Disorders (3 credits)**

An orientation to practices in the field, philosophies of rehabilitation, areas of scientific inquiry and the relationship with other disciplines and specialties.

## **CSND 207 Speech and Hearing Science (3 credits)**

Restriction(s): Sophomore, junior, or senior standing. This course is designed to provide students with a basic foundation in the acoustic concepts central to the professions of speech-language pathology and audiology. Specifically, information needed to understand the perception and production of speech and other sounds will be presented.

## **CSND 383 Introduction to Language Development (3 credits)**

Prerequisite(s): any 100-level course. Restriction(s): Sophomore, junior, or senior standing. An overview of speech and language development from infancy through early school age. The course will familiarize students with the typical sequence of acquisition for phonology, semantics, syntax, morphology, and pragmatics and with theories and processes underlying language development. Issues related to dialects and non-mainstream speech will be considered. Interacting with a preschool child to obtain a language sample is required.

## **CSND 408 Phonetic Study of Speech Sounds (3 credits)**

Prerequisite(s): any 200-level course. Restriction(s): Sophomore, junior, or senior standing. This course will examine the articulation and features of American English speech sounds, the influence of context on sound production, and suprasegmental aspects of speech (intonation and stress). Dialectal variants and variation secondary to disorder will be considered. The course introduces students to the International Phonetic Alphabet (IPA) and provides opportunities to practice transcription.

## **CSND 409 Anatomy and Physiology of Speech and Hearing Systems (3 credits)**

Prerequisite(s): any 200-level course. Restriction(s): Sophomore, junior, or senior standing. The anatomical and physiological bases of respiration, phonation, articulation and resonance. The anatomy and physiology of the auditory mechanism.

## **CSND 410 Neurophysiological Bases of Communication (3 credits)**

Prerequisite(s): any 200-level course. Restriction(s): Sophomore, junior, or senior standing. Study of the anatomy and physiology of the nervous system as it relates to the development of hearing, vision, thought, memory and emotions, as well as the perception, processing and production of speech and language.

## **CSND 412 Clinical Process and Procedures in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 200 and CSND 309. An orientation to clinical practice. A model of the clinical process is presented which interfaces the interpersonal relationship with professional/technical competencies. Consideration is given to planning treatment programs, traditional and augmentative clinical approaches, therapeutic activities/materials, and clinical reporting.

## **CSND 468 Clinical Procedures in Audiology (3 credits)**

Prerequisite(s): any 200-level course. Restriction(s): Sophomore, junior, or senior standing. The measurement of hearing including pure tone tests, screening tests, interpretation of test results, problems of calibration, and medical and educational referral. Demonstrations and supervised practice testing.

## **CSND 472 Speech Science and Instrumentation (3 credits)**

Prerequisite(s): CSND 408 and CSND 409. Basic acoustics respiration and voice production acoustic theory of vowel production; consonant acoustics and speech perception.

## **CSND 474 Seminar in Speech Language and Hearing (1 credit)**

Corequisite(s): SASE 453. Restriction(s): Majors only. Part of professional semester. It provides an opportunity to discuss and share technical and interpersonal issues related to the delivery of speech, language and hearing services. It also provides an opportunity to develop strategies for seeking solutions to problems encountered. The course will be concurrent with student teaching.

## **CSND 500 Language Assessment (3 credits)**

Prerequisite(s): CSND 383 or APLN 500 or equivalent. This course introduced students to language sample analyses that are used for identifying individuals with language impairments or for selecting goals for intervention. Students will learn how to elicit language samples from individuals with language impairments. Students will learn the transcription and coding conventions of a computer language analysis software program and how the program can assist in analyzing language samples from individuals with language impairments.

## **CSND 505 Counseling in Speech-Language Pathology (3 credits)**

This course provides information on the theoretical foundations of counseling, its relevance for the field of communication sciences and disorders, structure and conduct of interviews, basic counseling strategies, and consideration of the "helping" role as practiced by communication disorders professionals. The class focuses on information and experiences supportive of developing effectiveness in these roles. The class also considers multicultural concerns.

## **CSND 511 Adult Language Disorders (3 credits)**

Prerequisite(s): CSND 410 or equivalent; and CSND 500 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. This course is devoted to an advanced study of adult aphasia and other communication disorders associated with neuropathologies of adulthood.

## **CSND 512 Diagnosis in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 408 or equivalent; and CSND 521. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Diagnostic procedures for children and adults with communication disorders. Opportunities provided for interviewing clients and family members, administering tests and other assessment procedures, implementing data analyses, and report writing.

## **CSND 514 Communication Disorders of Aged (2 credits)**

Restriction(s): Major in Communication Science and Disorders, Speech-Language Pathology concentration. Communication disorders associated with pathologies that tend to occur in later life, e.g., aphasia, multiple sclerosis, Parkinsonism and cerebral arteriosclerosis.

## **CSND 515 Voice Disorders (3 credits)**

Prerequisite(s): CSND 207 or equivalent; and CSND 408 or equivalent; and CSND 409 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Selected disorders of voice production. Consideration given to etiology, pathology, and treatment of voice disorders in children and adults.

**CSND 516 High Risk Infants - Early Intervention Practices (3 credits)**

The rationale and methods for early intervention with high risk infants and their families are studied (birth to three). Examination of current research and study and observation of practices for early intervention in home, hospital, and community agency settings will be the major focus of the course.

**CSND 517 Phonological and Articulation Disorders (3 credits)**

Prerequisite(s): CSND 408 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. This course examines the nature of articulation and phonological disorders in children, emphasizing evaluation and treatment and including childhood apraxia of speech.

**CSND 518 Advanced Topics in Adult Language Disorders (3 credits)**

Prerequisite(s): CSND 511. In-depth study of assessment and treatment of aphasia and other acquired neurogenic communication disorders of adults.

**CSND 520 Audiology for Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 468 or departmental approval. This course is designed to provide students with an overview of issues related to audiologic (re)habilitation and management across the lifespan. Information concerning amplification and other assistive listening devices, the impact of hearing loss, management of children with hearing loss in the schools and issues and approaches to rehabilitation in adults with hearing loss will be discussed.

**CSND 521 Clinical Process and Procedures in Speech-Language Pathology (3 credits)**

Corequisite(s): CSND 500 and CSND 517. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. The course provides an orientation to clinical practice in speech-language pathology. The clinical process is presented as a construct which interfaces interpersonal dynamics with preferred professional practices. A decision-making continuum is applied to the interpretation of client needs as a basis for developing goals, planning treatment procedures, documenting treatment and planning for referral and/or discharge.

**CSND 523 Educational Audiology (3 credits)**

Prerequisite(s): CSND 468 or CSND 544 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders. This course provides a basis for understanding how hearing and hearing losses have an impact on language, academic, and psychosocial development. Audiometric screening/testing, tympanometry and central auditory processing evaluation will be presented in the context of educational planning.

**CSND 524 Evaluation and Treatment of Swallowing Disorders (3 credits)**

Prerequisite(s): CSND 409 or equivalent; and CSND 410 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. This course is designed to provide students with the information and skills necessary to evaluate and treat swallowing disorders in pediatric and adult populations within the scope of practice for speech-language pathologists. An interdisciplinary approach to clinical management is stressed. Students are given the opportunity to learn through classroom and laboratory experiences. Off-campus observations are required.

**CSND 525 Motor Speech Disorders (3 credits)**

Prerequisite(s): CSND 207 or equivalent AND CSND 410 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Neurological disorders of speech. Consideration given to etiology and differential diagnosis of the dysarthrias in adults and children, acquired apraxia of speech, and other motor speech disorders. Principles and techniques for treating motor speech disorders.

**CSND 530 Clinical Observation/Clinical Preparation (1 credit)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Observation and preparation for clinical practice in audiology.

**CSND 532 Clinical Practicum I (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Supervised clinical practicum.

**CSND 533 Supervision of Speech and Hearing Programs (3 credits)**

Develops skill in supervision of beginning clinicians by experienced therapists; criteria for evaluation, writing critiques and understanding interpersonal relationships that enhance teaching through criticism.

**CSND 534 Advanced Topics in Clinical Instrumentation (3 credits)**

Prerequisite(s): CSND 409 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Study of basic acoustics and perception. Advanced study of anatomy and physiology of the speech and hearing mechanisms. Commonly used instrumentation will be discussed.

**CSND 535 Beginning Practicum in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 521 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. This laboratory course provides observation hours and involves students in an initial experience under supervision in providing services to individuals with communication disorders at the MSU Communication Disorders Center. The course may be repeated once for a maximum of 6 credits.

**CSND 544 Diagnostic Procedures in Audiology I (3 credits)**

Corequisite(s): CSND 547. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Principles and procedures for the basic audiological evaluation including pure-tone air and bone conduction and speech audiometry, clinical masking and acoustic immittance.

**CSND 545 Diagnostic Procedures in Audiology II (3 credits)**

Corequisite(s): CSND 548. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Principles and procedures for advanced audiological assessment focusing on the auditory brainstem response. The middle latency potentials, late potentials and electrocochleography are also covered.

**CSND 546 Diagnostic Procedures in Audiology III (3 credits)**

Corequisite(s): CSND 549. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Principles and procedures for vestibular assessment focusing on electronystagmography and videonystagmography. Course also covers vestibular anatomy and rehabilitation techniques.

**CSND 547 Clinical Laboratory for Diagnostic I (1 credit)**

Corequisite(s): CSND 544. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Applied clinical laboratory for Diagnostic I.

**CSND 548 Clinical Laboratory for Diagnostic II (1 credit)**

Corequisite(s): CSND 545. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Applied clinical laboratory for Diagnostic II.

**CSND 549 Clinical Laboratory for Diagnostic III (1 credit)**

Corequisite(s): CSND 546. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Applied clinical laboratory for Diagnostic III.

**CSND 550 Basic Hearing Aid Technology and Fitting (3 credits)**

Corequisite(s): CSND 551. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Basic understanding of the parts of a hearing aid and the role of those parts in the function of amplification systems. Topics include history and care of hearing aids as well as hearing aid selection procedures.

**CSND 551 Clinical Laboratory Basic Hearing Aid Technology and Fitting (1 credit)**

Corequisite(s): CSND 550. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Applied clinical laboratory for Basic Hearing Aid Technology and Fitting.

**CSND 552 Clinical Internship I (3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised clinical practicum.

**CSND 553 Clinical Internship II (3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised clinical practicum.

**CSND 554 Clinical Internship III (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Supervised clinical practicum.

**CSND 556 Augmentative and Alternative Communication (AAC) Across the Lifespan (3 credits)**

Prerequisite(s): CSND 521. This course will cover communication strategies, techniques, and low-and high-technology systems for people with severe developmental and acquired communication disorders who are unable to meet their daily communication needs through speech. Assessment, intervention, caregiver involvement, and working as part of a multidisciplinary team will be addressed.

**CSND 557 Evaluation and Treatment of Autism (3 credits)**

Prerequisite(s): CSND 583. This course is designed to prepare students to assess and provide evidence-based intervention to individuals with autism spectrum disorder (ASD) from early intervention through adolescence. The course will also cover etiology, characteristics of children with autism, and family involvement.

**CSND 560 Childhood Apraxia of Speech (3 credits)**

Prerequisite(s): CSND 517. This course covers current research topics in the assessment and treatment of childhood apraxia of speech. The course includes application of diagnostic procedures, defining characteristics unique to childhood apraxia of speech, and evidence based intervention principles for treatment.

**CSND 562 Intermediate Practicum in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 535 with a grade of B- or higher. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. In this laboratory course, students provide services under supervision to individuals with communication disorders at the MSU Communication Disorders Center. The course may be repeated once for a maximum of 6 credits.

**CSND 563 Clinical Practicum II (3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised clinical practicum.

**CSND 565 Literacy Assessment and Intervention Across the Lifespan for Speech-Language Pathologists (3 credits)**

Restriction(s): Enrollment in speech-language pathology master's degree program or by departmental approval. This course examines the language and literacy skills of children and adults who have written language disorders. Coursework involves discussing various readings as well as critically evaluating assessment and intervention materials and procedures across the lifespan and the implications of state/federal laws that address the rights of individuals with disabilities. This course is structured to consider current practices for speech language pathologists (SLPs) practicing across settings.

**CSND 572 Speech Science and Instrumentation (3 credits)**

Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Analysis of speech production and reception through use of equipment designed to measure selected features of the communication process.

**CSND 573 Organization and Administration of Speech and Language Programs in Schools (3 credits)**

Prerequisite(s): CSND 587. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. This course is designed to provide students with an overview of clinical programs in the public schools. Testing, scheduling, grouping, service delivery models, intervention and record keeping will be discussed within the perspective of clinical application. The role of the speech language pathologist in relation to administrators, teacher specialists in related areas, parents and paraprofessionals will be reviewed. Hands-on experience will also be part of the course.

**CSND 577 Scientific and Professional Writing (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Provides an in-depth analysis of the organization and composition of articles, analyses and reviews according to formats prescribed by the academic, legal and other professions. Approaches to the writing of technical, research and clinical reports which contribute to and document the evolution and expansion of the scientific and professional body of knowledge in the health sciences are highlighted.

**CSND 580 Aural Rehabilitation for Adults (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Advanced study of the effects of hearing loss on communication, assessment and intervention strategies, assistive devices and counseling for adults.

**CSND 581 Pediatric Aural (Re)Habilitation and Educational Audiology (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Advanced study of the effects of hearing loss on communication, educational development, assessment and intervention strategies, and counseling for children with hearing loss and their families.

**CSND 583 Language Disorders of Children (3 credits)**

Prerequisite(s): CSND 500. Restriction(s): Graduate major in Communication Sciences and Disorders or departmental approval. This course takes a predominately descriptive and non-categorical perspective to assessment and treatment of language disorders in children in the pre-linguistic through developing language stages. Syndromes and causal factors associated with language disorder will also be considered.

**CSND 584 Cleft Palate and Craniofacial Disorders (3 credits)**

Prerequisite(s): CSND 409 or equivalent; and CSND 517; and CSND 583. Restriction(s): Graduate major in communication Sciences and Disorders, Speech-Language Pathology concentration. Etiology, characteristics, and management of individuals with cleft lip, cleft palate and other craniofacial disorders. Unit on myofunctional therapy included.

**CSND 585 Fluency Disorders (2-3 credits)**

Prerequisite(s): CSND 534 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Principles and methods of treatment for children and adults with fluency disorders. Methods of evaluation, specific techniques of treatment, and principles coordinating treatment with home and school life. Demonstrations with children and adults with fluency disorders serve as the basis for study and discussion.

**CSND 587 Language Disorders in School Age Children (3 credits)**

Prerequisite(s): CSND 583 may be taken as prerequisite or corequisite. The class considers the acquisition of language and its impairments in school aged children and the impact of language impairment on literacy, academic performance, and social interaction. Assessment and treatment approaches are discussed within an evidence-based practice perspective.

**CSND 592 Research in Speech-Language Pathology (3 credits)**

Restriction(s): Graduate major in Communication Sciences and Disorders, Speech-Language Pathology concentration. Significant problems in the field are investigated and published research projects evaluated. Critical analysis and experimental design are emphasized.

**CSND 594 Independent Study (1-3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Students select an area of Communication Sciences and Disorders and, with advisement, study the literature in the field, observe related programs at special schools and centers and write reports on findings. Regular conferences with instructor for guidance and evaluation. May be repeated twice for a maximum of 3 credits.

**CSND 598 Special Topics in Communication Sciences and Disorders (1-3 credits)**

Prerequisite(s): CSND 521. Restriction(s): Graduate Major in Communication Sciences and Disorders, Speech Language Pathology concentration. This seminar is designed to introduce newly emerging topics in communicative disorders. May be repeated for a maximum of 9 credits.

**CSND 599 Advanced Practicum in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 562 with a grade of B or higher. In this laboratory course, students provide services under supervision to individuals with communication disorders at the MSU Communication Disorders Center. The course may be repeated once for a maximum of 6 credits.

**CSND 600 Externship in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 599 with a grade of "B" or better. This course is designed to provide the experiences and skills necessary for professional practice as a speech-language pathologist in hospitals, rehabilitation centers, nursing homes, and other clinical settings that provide services to individuals with communication disorders. This course may be repeated.

**CSND 601 Auditory Processing Disorders (3 credits)**

Prerequisite(s): CSND 468 or CSND 544 or equivalent. Restriction(s): Graduate major in Communication Sciences and Disorders. The study of auditory processing disorders in school-age children and adults. The course will include the impact of such disorders on receptive language, expressive language, reading, academic achievement, attending behaviors and organizational skills.

**CSND 602 Hearing and Speech Science (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Advanced study of the foundations of acoustics and mechanisms for the production and perception of speech.

**CSND 603 School Externship in Speech-Language Pathology (3 credits)**

Prerequisite(s): CSND 599 with a grade of B or better. This course is designed to provide the experiences and skills necessary for professional practice as a speech-language pathologist within a school setting. This is a full-time externship experience under the supervision of an ASHA certified speech-language pathology supervisor who holds New Jersey certification to practice in a school setting.

**CSND 620 Pediatric Audiology (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Study of assessment and intervention techniques for infants and young children with hearing loss.

**CSND 621 Implantable Devices for the Remediation of Hearing Loss (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Clinical and theoretical information regarding implantable devices for the remediation of hearing loss.

**CSND 663 Clinical Practicum III (3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised Clinical Practicum.

**CSND 671 Special Topics in Audiology (1-3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Contemporary topics in the field of audiology: national certification and state licensure requirements, changing healthcare practices and the provision of audiology services, presentation of faculty and student research, clinical case presentations, among others. Students may repeat this course up to four times as long as the topic of the seminar is not the same. Course may be taken three times for a maximum of 9 credits.

**CSND 696 Issues in Healthcare Systems (2 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. An analysis of selected professional and policy issues affecting the present and projected healthcare delivery system. Issues concerning healthcare personnel, patients, healthcare technology, organizational structures and facilities, finance mechanisms and the role of government are stressed in relation to how they influence healthcare services and delivery.

**CSND 699 Clinical Externship I (2 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised clinical practicum.

**CSND 700 Clinical Externship II (2 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Intensive supervised off-campus clinical practicum.

**CSND 701 Auditory Anatomy and Physiology (3 credits)**

Prerequisite(s): CSND 410 as prerequisite or corequisite. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Gross and fine anatomy and physiology of the mammalian peripheral and central auditory system.

**CSND 702 Clinical Instrumentation (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Principles and use of clinical instrumentation in speech-language pathology and audiology. Laboratory exercises of a clinical emphasis are provided to illustrate course content.

**CSND 703 Biomedical Ethics (2 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. A study of the application of human and professional values, judgment and choices to selected ethical dilemmas that arise in health care practice.

**CSND 704 Clinical Laboratory in Auditory Processing Disorders (1 credit)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Principles and procedures for advanced auditory evaluation of central auditory processing disorders. Underlying mechanisms, assessment and treatment will be addressed.

**CSND 705 Noise and Industrial Audiology (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. This course has been designed to understand the methods used to study the impacts of noise exposure on body systems approaches to the quantification of noise terminology used to measure and describe noise rules and regulations that are used to control the impact noise exposure impact of noise and the interaction of noise and other potential toxins impact of noise on specific populations of individuals (i.e., military personnel, musicians and school children possible interventions to mitigate the effects of noise exposure—measurement of noise and its impact on hearing and communication. The effect of noise in industrial, school, and military settings will be addressed.

**CSND 706 Advanced Amplification Technology (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. CSND 550 and CSND 551 or permission of instructor. Advanced study of amplification systems including programmable hearing aids, digital hearing aids. Study of personal and classroom FM systems. Tactile device technology used to manage the communication needs of individuals with profound hearing loss will also be addressed.

**CSND 707 Genetics and Embryology of the Auditory System (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. The role of genetics and embryology on auditory function as they apply to the understanding of diseases and disorders of the ear. Attention will be paid to the Human Genome Project as it has provided a wealth of information that is critical to clinical practice. The essentials of infection control and common medical terminology as they relate to audiologic practice will also be addressed.

**CSND 708 Psychoacoustics I (3 credits)**

Corequisite(s): CSND 709. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Study of psychophysical methods and perception of the parameters of sound in humans and animals with normally functioning auditory mechanisms.

**CSND 709 Laboratory for Psychoacoustics I (1 credit)**

Corequisite(s): CSND 708. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. This course serves as a corequisite for CSND 708 and will allow those students in CSND 708 to apply concepts and make basic psychoacoustic measurements.

**CSND 710 Neurophysiology for Hearing, Language and Speech (3 credits)**

In this course students will learn about the neurophysiology specifically involved in communication and balance.

**CSND 711 Counseling in Audiology (3 credits)**

This courses will discuss the techniques, content, and challenges in counseling persons with hearing loss and their families.

**CSND 731 Clinical Externship III (2 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised clinical practicum.

**CSND 732 Clinical Externship IV (2 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised clinical practicum.

**CSND 750 Research Methods (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Provides students with a working knowledge of the research process, including formulation of a research question, measurement and various statistical procedures of data analysis.

**CSND 801 Advanced Scientific and Professional Writing (3 credits)**

Prerequisite(s): CSND 577 or permission of instructor. This course will cover scientific writing, including proposals for the dissertation and grants, manuscript reviews, and preparation of manuscripts, posters, and oral presentations. Practice and revision of individual work will be emphasized. There will be time for group feedback as well as individual mentoring.

**CSND 807 Medical Audiology (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Prerequisite(s): CSND 707 or permission of instructor. Advanced study of the pathology of the auditory and vestibular system.

**CSND 808 Psychoacoustics II (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Prerequisite(s): CSND 708 or permission of instructor. Advanced study of the effects of hearing loss and aging on the perception of simple and complex sounds.

**CSND 809 Cognition and Hearing Science (3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. The study of perception of language from a psychological base. Emphasis will be placed on the impact of hearing loss on the perception of speech and spoken language.

**CSND 834 Seminar in University Teaching (1 credit)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. This seminar will prepare students for CSND 835, Practicum in University Teaching.

**CSND 835 Practicum in University Teaching (1 credit)**

Prerequisite(s): Permission of Graduate Advisor required. Supervised teaching experience in audiology. May be repeated for a total of 4 credits. This course is designed to provide the opportunity to get experience teaching. All students in the audiology doctoral program are required to take a Practicum in Teaching. In this course, the student will work with a faculty member to prepare and present some lectures on a course offered by the Department of Communication Sciences & Disorders. In addition, the student will participate in selecting a course text or texts, developing the course syllabus, and preparing and grading exams and other assignments for the course.

**CSND 837 Seminar in Clinical Preceptorship (1 credit)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor.

**CSND 840 Special Topics in Communication Sciences and Disorders Seminar (1-3 credits)**

Restriction(s): Matriculation in PhD program in Communication Sciences and Disorders, Permission of instructor. Advanced study and analysis of current research and/or clinical issues in communication sciences and disorders. May be repeated for a maximum of 12 credits.

**CSND 850 Directed Research I (1-3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Development of the research question and review of the literature. Can be taken up to three times for 9 credits. Research project will be graded as IP (In Progress) until requirements are completed, at which time a grade will be given.

**CSND 851 Directed Research II (1-3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Development of the study design, development of IRB application, and data collection. Can be taken up to three times for 9 credits. Research project will be graded as IP (In Progress) until requirements are completed, at which time a grade will be given.

**CSND 852 Directed Research III (1-3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Data collection and development of the final document. Can be taken up to three times for 9 credits. Research project will be graded as IP (In Progress) until requirements are completed, at which time a grade will be given.

**CSND 854 Applied Analysis for Communication Sciences and Disorders (3 credits)**

Prerequisite(s): CSND 750. Students will learn to analyze data while they are actively engaged in research in their program of study. Descriptive and inferential analyses of research data, including but not limited to: significance testing and p-values, t-test, chi-square, ANOVAs, regression and correlation, use of statistical software, reading statistical results in the literature, and write up of statistical results.

**CSND 862 Fourth Year Externship I (1-3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Intensive supervised off-campus clinical residency. May be repeated for a maximum of 6 credits.

**CSND 863 Fourth Year Externship II (2-3 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Intensive supervised off-campus clinical residency.

**CSND 864 Online Grand Rounds (1-6 credits)**

Prerequisite(s): Permission of Graduate Advisor required. Fourth-year externship students discuss clinical cases with peers and faculty.

**CSND 865 Speech-Language Pathology for Audiologists (1 credit)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. Complete overview of speech and language problems encountered by audiologists in clinical practice in order to make informed decisions regarding patient referral and follow-up.

**CSND 899 Directed Readings (1-3 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders or permission of graduate advisor. A directed readings course is a tailored reading course negotiated between an instructor and a student to enable that student to explore in depth a particular topic or area of knowledge with the guidance of a faculty member. Directed readings courses shall not duplicate the content of regular courses. This may, of course, build on and extend exploration commenced in regular courses. May be repeated up to four times for a maximum of 12 credits.

**CSND 900 Dissertation Advisement (3-12 credits)**

Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders; Advancement to Candidacy. Permission of Graduate Advisor required. This department requires 12 credits of CSND 900. While enrolled in CSND 900, students will work with their Dissertation Chair and their Dissertation Committee. Credits are reported as IP (In Progress) while the dissertation is being written. At the conclusion of the dissertation defense, a final grade of Pass or Fail will be recorded.

**CSND 901 Dissertation Extension (1 credit)**

Prerequisite(s): 12 credits of Dissertation Advisement. Restriction(s): Matriculation in the AuD in Audiology or the PhD in Communication Sciences and Disorders. Permission of Graduate Advisor required. Once students have acquired 12 credits of CSND 900 Dissertation Advisement, they must enroll in 1 credit of CSND 901 in every semester in which they intend to work on the dissertation, up to and including the semester of the defense. Credits are reported as IP (In Progress) while the dissertation is being written. At the conclusion of the dissertation defense, a final grade of Pass or Fail will be recorded. CSND 901 may be repeated until the time limitation for completion of the doctoral program as specified in the Doctoral Policy Manual has been reached.

**CSND 920 Qualifying Examination Preparation (0.5 credits)**

Restriction(s): Matriculation in PhD in Communication Sciences and Disorders.