



Doctor of Audiology Residential program

Curriculum Guide
2023-24

AUDE 5120 Infection Control and Cerumen Management

This course will cover the basic principles of microbiology, disease process, and immunology. The student will learn how infections spread and appropriate infection control procedures for audiologists, including the cleaning of tools and instruments. In addition, students will learn about cerumen management methodologies, equipment, indications, and contraindications. State and federal agencies that govern infection control, their guidelines and protocols applicable to the audiologist, and scope of practice and regulatory issues related to cerumen management will be addressed. Includes laboratory requirement. *(1.5 credits: 1 credit lecture, 0.5 credit lab)*

AUDE 5140 Auditory Science

A study of the physical nature of sound and the human psychological response to auditory stimulation. Topics include acoustic analysis from simple harmonic motion to complex waves, sensitivity, pitch, loudness, and temporal perception, masking, and binaural hearing. *(4 credits)*

AUDE 5160 Anatomy and Physiology of the Auditory-Vestibular System

A study of the structure and function of the auditory-vestibular system. This course will cover basic human anatomy and physiology foundations and concepts relevant to hearing and balance function. There will be an emphasis on peripheral and central auditory and vestibular anatomical structure details, development, pathways and physiology. Includes laboratory requirement. *(3 credits: 2 credit lecture, 1 credit lab)*

AUDE 5200 Acquisition and Development of Communicative Skills

This course is designed to introduce students to the acquisition and development of communication skills and the impact of hearing loss on these skills. An introduction to disorders of communication will enable students to identify speech, language, voice, and fluency concerns and determine appropriate referrals, within the audiologist's scope of practice. The course will also introduce students to a range of communication options available to individuals who are Deaf or Hard of Hearing. These communication options include American Sign Language (ASL), Aural-Oral, Cued Speech, Total Communication, and Bilingual-Bicultural, with variations within each category. Aural rehabilitation approaches and methodologies will be covered, and students will develop aural rehabilitation lessons appropriate for a range of students and auditory abilities. *(3 credits)*

AUDE 5230 Professional Roles and Responsibilities

This class is designed to introduce students to the professional roles and responsibilities of an audiologist, as well as other members of the healthcare delivery team. With current emphasis on team delivery of healthcare services, it is important students understand the interrelationship of the various healthcare professions in total patient care. Particular emphasis will be placed on those health professions that are educated at

the various schools of A.T. Still University, including the history and philosophy of osteopathic medicine. Audiology, as a profession, will be studied in some detail. Students will learn the history of audiology and its evolution to a doctoral-level profession. Scope of practice, ethics, certification, licensure, and specialty areas will be studied. Contemporary professional practice issues will be discussed by guest speakers in several specialty areas. *(1 credit)*

AUDE 5240 Audiology Diagnostics I

The first of a two-course sequence covering essential audiometric tests and procedures. Topics will include case history, otoscopy, behavioral threshold testing, masking, speech audiometry, and puretone screening for school-age children and adults. This course will also cover instrument calibration standards and procedures utilized in the practice of audiology. Includes laboratory requirement. *(3 credits: 2 credit lecture, 1 credit lab)*

AUDE 5260 Human Anatomy and Neuroanatomy

A study of the basics of human anatomy and physiology which will include anatomical terminology, biochemistry of cells, and an overview of the integumentary, skeletal, muscular, nervous, endocrine, cardiovascular, immune, respiratory, digestive, and urinary systems. The development, structure, and function of the central and peripheral nervous systems, including the autonomic nervous system, will be emphasized. In-depth information on neurovasculature, sensory and motor pathways, sensory receptors, reflex pathways, the audiovestibular system, and lesions of the nervous system at various levels will be presented. Includes laboratory requirement. *(3 credits: 2 credit lecture, 1 credit lab)*

AUDE 5310 Embryology and Genetic Conditions

This course covers embryologic development with emphasis on normal and abnormal or interrupted development. Genetic concepts and terminology will be covered together with information regarding the association of certain organ systems with audiovestibular system impairments. Material will also include information regarding genetic testing, genetic counseling, and the audiologist's role and responsibilities in identifying and managing these conditions. *(3 credits)*

AUDE 5320 Manual Communication I

A history of manual communication systems, including American Sign Language, will be examined. Students will be exposed to the history and culture of the Deaf community and how this special population may best be served in clinical practices. Students will gain experience in receptive and expressive fingerspelling and signs of medical terminology and basic conversation. Information will be provided on the scheduling and use of sign language interpreters. Additionally, students will be asked to reflect upon readings and videos providing insight into the role of the Deaf community. *(1 credit)*

AUDE 5330 Acoustics of Speech

An overview of the acoustics of speech. Areas of study include normative, articulatory, and acoustic phonetics, and the acoustic analysis of speech. (1 credit)

AUDE 5340 Audiology Diagnostics II

The second of a two-course sequence covering essential audiometric tests and procedures. Topics will include immittance audiometry, cochlear and retrocochlear site-of-lesion tests, tests for pseudohypacusis, and current best practices. Evaluation of test performance, including sensitivity and specificity will be covered. Includes laboratory requirement. (3.5 credits: 2.5 credit lecture, 1 credit lab)

AUDE 5410 Acquired Auditory-Vestibular Disorders

This course provides a study of acquired peripheral and central pathologies affecting the auditory and vestibular systems. Disorders of the conductive, sensory, and neural systems will be covered in-depth with details provided on diagnosis, etiologies, signs and symptoms, related findings, and treatment options. Emphasis will be placed on understanding the relation between pathophysiologic factors, test measures, test outcomes, and function-dysfunction. (3 credits)

AUDE 5440 Cognition and Speech Perception

A study of the auditory-cognitive processes involved in speech perception. Topic areas include models of speech perception, cognitive factors involved in speech perception, interactions between audition and cognition during complex language processing, and multimodal processing of speech. (2 credits)

AUDE 5450 Amplification I

This course will cover the history of hearing aids in the healthcare market. Past and current hearing aid styles, components, acoustics, and measurement characteristics will be discussed. Skills will be gained in taking earmold impressions, performing cleaning, maintenance, and adjustments on hearing aids, and modifying hearing aids and earmolds. Information will also be provided regarding patient assessment measures used to aid in appropriate hearing aid selection and verification, as well as how to provide basic hearing aid recommendations to patients. Includes laboratory requirement. (3 credits: 2 credit lecture, 1 credit lab)

AUDE 5460 Otoacoustic Emissions

A study of the origin and classification of otoacoustic emissions (OAEs), as well as test equipment and procedures for obtaining OAEs. Interpretation of results and uses of OAE data in screening and differential diagnosis of auditory disorders. Instrumentation and testing procedures will be covered in the laboratory segment of this course. Includes laboratory requirement. (2 credits: 1.5 credit lecture, 0.5 credit lab)

AUDE 5490 Audiology Clinical Simulation Module

This simulation lab module is designed to provide students with opportunities to review and practice clinical procedures in preparation for direct patient care. Hands-on practice experiences will be provided with simulation technology and/or standardized/certified patients in a laboratory environment under faculty supervision and mentorship. Case studies will be used to focus on integration of diagnostic information and the development of clinical-decision making skills. (0.5 credit lab, Pass/Fail)

AUDE 5180, 5280, and 5380 Clinical Rotation I-III

Guided observations of audiologic activities. Students observe and assist preparations for and administration of clinical evaluations and treatment. Limited hands-on experience may be included. (0.5 to 1 credit for each course)

AUDE 6120 Pharmacology and Ototoxicity

This course is designed to introduce audiology students to the basic concepts and principles of pharmacology. An overview of drug development, drug regulations, and basic drug classifications will be provided. In-depth information will be presented regarding drugs used in the diagnosis and treatment of hearing and balance disorders, drugs which affect the function of the auditory and vestibular systems, and the concept of polypharmacy. The course also covers ototoxicity (cochleotoxicity, vestibulotoxicity, and neurotoxicity) and ototoxic monitoring. Students will gain an appreciation for the role of audiologists related to understanding patients' needs, behaviors, and clinical outcomes associated with medication use, as appropriate for a professional committed to whole person healthcare. (2.5 credits)

AUDE 6140 Pediatric Audiology

The purpose of this course is to further familiarize students with the basic anatomy and physiology of the auditory system, auditory development, the rationale and principles behind the assessment of hearing in pediatric patients, and the most current and precise testing techniques (behavioral and physiological) for this population. In addition, students will become familiar with the medical aspects of hearing loss (disorders) and learn about educational opportunities for the child with a hearing impairment. Students will also become familiar with common fitting techniques in pediatric amplification. Includes laboratory requirement. (3 credits: 2 credit lecture, 1 credit lab)

AUDE 6150 Amplification II

This course will cover selection, fitting, and adjustment of hearing aids. Topics will include patient counseling, hearing aid selection and orientation, hearing aid fitting and verification measures, as well as ordering, billing, and ethics. The course focus will be on understanding and utilization of state-of-the-art technology. The laboratory portion of this course will focus on a range of manufacturers and technology options, pre- and post-fit

testing measures and scales, as well as counseling and programming skills. Includes laboratory requirement. (3 credits: 2 credit lecture, 1 credit lab)

AUDE 6210 Counseling in Audiology

This course is designed to introduce students to the fundamental principles, contemporary theories, and applied techniques of the counseling process. Special emphasis will be placed on communication skills and techniques and issues and practices related to the psychosocial effects of hearing loss on individuals of all ages and their families. The role of counseling across the scope of audiologic practice, including diagnostic and rehabilitative activities, will be discussed. (2.5 credits)

AUDE 6220 Tinnitus, Hyperacusis, & Misophonia: Evaluation and Treatment

This course is designed to introduce students to tinnitus, hyperacusis, and misophonia. Various theories about the causes, mechanisms, and treatments will be addressed during class time discussions. Assessment tools will be covered and discussed. Includes laboratory requirement. (2.5 credits: 2 credit lecture, 0.5 credit lab)

AUDE 6240 (Central) Auditory Processing Disorders: Assessment and Management

The purpose of this course is to review basic anatomy and physiology of the auditory system as it pertains to auditory processing, to enable students to understand the theories and research on auditory processing, and to familiarize students with behavioral tests used to assess auditory processing and its related disorders. Current information regarding management of individuals with (C)APD will also be presented. Includes laboratory requirement. (3 credits: 2 credit lecture, 1 credit lab)

AUDE 6310 Audiological Rehabilitation for Adults

Topics include rehabilitation evaluation and use of self-assessment instruments; teaching the patient and family listening and helping skills, as well as other methods to enhance communication and sound awareness through individual or group communication; and meeting the rehabilitative needs of the aging population. (2.5 credits)

AUDE 6330 Practice Development I

This course is designed to introduce the students to the business and regulatory environment in which they will eventually practice. The topics covered include business functions, the regulation of healthcare finance and quality, and the current landscape of healthcare in the United States. (2.5 credits)

AUDE 6370 Vestibular Assessment and Treatment I

This course is designed to provide students with knowledge of the anatomy and physiology of the peripheral and central vestibular systems, as well as an overview of human equilibrium systems. This course will also provide students with a comprehensive overview of vestibular assessment and evaluation procedures as well as vestibular rehabilitation protocols and procedures. Students will learn how to perform a vestibular evaluation

and perform certain vestibular rehabilitation procedures. Includes laboratory requirement. (3 credits: 2 credit lecture, 1 credit lab)

AUDE 6450 Amplification III: Implantable Devices

The purpose of this class is to review with students the auditory system as it applies to implantable devices; medical and audiologic indications for implantable hearing devices for adults and children; and the rationale and principles behind implantable hearing devices. In addition, students will spend time learning about outcomes with the different devices and rehabilitation options for recipients. Students will be familiar with the coding and reimbursement issues as they pertain to implantable devices. Includes laboratory requirement. (3 credits: 2 credit lecture, 1 credit lab)

AUDE 6470 Auditory Evoked Responses and Neurodiagnostics

A review of the anatomy and physiology of the auditory system as it pertains to auditory evoked responses (AERs) will be provided. This course will cover recording parameters, test procedures, and interpretation of auditory evoked responses. Specific topics will include electrocochleography, the auditory brainstem response, Auditory Steady State Response, middle and late AERs, pathologies of the retrocochlear system, and intraoperative neurophysiologic monitoring (IONM) techniques. Students will engage in case-based learning and journal club activities to integrate information obtained from AERs and other patient data related to a wide range of disorders involving attention, (central) auditory processing, speech perception, memory and cognition. Includes laboratory requirement. (4 credits: 3 credit lecture, 1 credit lab)

AUDE 6180, 6280, 6380, and 6480 Clinical Rotation IV-VII

Direct clinical observation and participation in aspects of audiological practice. Students will be expected to integrate foundational knowledge and skills into the evaluation and treatment of patients. (2 credits for each course)

AUDE 6190 and 6290 Clinical Module I-II

This two-course sequence is designed to provide students with opportunities to review and practice clinical procedures covered in previous and concurrent applied courses. Hands-on practice experiences are provided in a laboratory environment under faculty supervision and mentorship with a focus on the integration of diagnostic and treatment measures. (0.5 credit for each course, Pass/Fail)

AUDE 7140 Early Intervention and Educational Audiology

Children who are Deaf/Hard of Hearing and/or with other listening needs typically require specialized supports to optimize developmental, social, and educational outcomes. Using group discussions and hands-on lab activities, students focus on the roles, responsibilities,

knowledge, and skills of audiologists in managing hearing and listening difficulties in children from birth to 18 years of age through Early Hearing Detection and Intervention (EHDI), hearing assistive technology, and educational programs. Emphasis is on the case-based application of legislative mandates, EHDI program management guidelines, early intervention goals for infants, children, and their families, pediatric personal hearing technology recommendations, ongoing assessment protocols, classroom signal to noise ratio (SNR) improvement methods, educational plans, and interprofessional coordination. Includes laboratory requirement. .
(3 credits: 2.5 credit lecture, 0.5 credit lab)

AUDE 7150 Amplification IV: Hearing Assistive Technology

This course provides an in-depth look at assistive listening and alerting technology to assist deaf and hard of hearing individuals in the home, school and community. We will explore a variety of levels at which the audiologist may elect to address assistive technology. Topics will include relevant legislation, system characteristics, selection and evaluation of devices and application to various populations. Students will be expected to complete actual use of multiple assistive listening devices and submit a laboratory report on each device. Includes laboratory requirement. (2 credits: 1.5 credit lecture, 0.5 credit lab)

AUDE 7170 Vestibular Assessment & Treatment II

The purpose of this class is to expand on the foundation of the anatomy, physiology, pathology and diagnostic evaluation of the balance system within the scope of practice of an audiologist. Students will be able to perform Electronystagmography and Videonystagmography (ENG/VNG) upon successful completion of this course. They will have an understanding of Computerize Dynamic Posturography (CDP) and Whole Body Rotational Testing (WBRT). The students will have a scientific and clinical background of vestibular rehabilitation. The students will have the ability to identify and triage patients with vestibular disorders into appropriate therapy programs. Students will be instructed on the correct administration of VRT protocols and accurate evaluation of treatment efficacy. Includes laboratory requirement. (2.5 credits: 2 credit lecture, 0.5 credit lab)

AUDE 7200 Manual Communication II (Elective)

This elective will cover vocabulary and sentence building in American Sign Language and expand student knowledge of the Deaf culture for the purpose of improving patient interactions, conversations, and case histories. (1 credit)

AUDE 7220 Advances in Audiologic Care

This course examines current trends and topics important to the practice and profession of audiology. (1.5 credits)

AUDE 7230 Practice Development II

This course will examine the various aspects of planning a business and key business functions. The topics will include a general overview of business planning, discussion of the different business structures, various concepts in business law, specifics in costs for owning a business, and discussion of the feasibility of starting a private practice in today's healthcare system. (2.5 credits)

AUDE 7240 Occupational and Environmental Hearing Conservation

This course is designed to introduce you to the principles and practices of occupational, educational and environmental hearing conservation. Topics will include determination of noise exposure, regulatory and advisory agencies and standards, classroom acoustics, hearing conservation programs in occupational and school settings, noise abatement, and hearing protection devices. The course will also include an overview of the principles and practices of forensic audiology. Includes laboratory requirement. (2.5 credits: 2 credit lecture, 0.5 credit lab)

AUDE 7260 Basic Principles of Medical Imaging

This course is designed to illustrate the uses of imaging techniques in the evaluation of auditory and vestibular pathology. The techniques of radiography, CT, MRI, fMRI, nuclear medicine (including PET and SPECT scanning), vascular imaging, and EEGs will be covered with direct correlations made to the auditory-vestibular system. (1.5 credits)

AUDE 7330 Ethics in Audiology*

Ethics is the branch of philosophy that deals with the study and evaluation of human conduct in light of moral principles, which may be viewed as the individual's standard of conduct, or as a body of social obligations and duties (Institute of Chiropractic Ethics.) Audiology, in its transition to a doctoring profession, is faced with redefining many ethical principles to reflect current state of the art and clinical practice realities. Ethical obligations may not reflect personal beliefs, but audiologists have a professional obligation to be responsible for, and abide by, the ethical standards of the associations and organizations to which they belong. American Speech-Language-Hearing Association, American Academy of Audiology, American Academy of Doctors of Audiology, and other professional organizations have adopted codes of ethics that set forth standards of integrity and ethical principles for their members. The codes call for certain behaviors in specific situations, but cannot be expected to cover every situation that calls for ethical behavior. In this class, we will examine the "spirit" of the codes as well as the "letter," and establish a framework for ethical decision making. Multicultural aspects of patient care and issues related to disparities in healthcare will also be presented. (2.5 credits)

AUDE 7430 Professionalism and Leadership*

This module will provide a forum for discussion of the organization and function of professional associations, activities that serve the professional community, and service to the public. Leadership concepts and professional characteristics will also be discussed.

(1.5 credits)

AUDE 7440 Hearing Loss and Healthy Aging*

This course is designed to address issues concerning the effects of aging on hearing. Changes in the auditory system as a function of aging, the impact on patient function, and healthy aging will be emphasized. The module will provide information on management of hearing loss in the aged population and strategies for collaborating with stakeholders to increase referrals for hearing healthcare. *(1.5 credits)*

AUDE 7180 and 7280 Clinical Rotation VIII-IX

Direct clinical participation in aspects of audiological practice. Students will be expected to integrate foundational knowledge and skills into the evaluation and treatment of patients. *(4 credits for each course)*

AUDE 7580 Clinical Rotation X

Direct clinical participation in aspects of audiological practice. Students will be expected to integrate foundational knowledge and skills into the evaluation and treatment of patients. *(12 credits)*

AUDE 7190 and 7290 Clinical Module III-IV

This two-course sequence is designed to provide students with opportunities to review and practice clinical procedures covered in previous and concurrent applied courses. Hands-on practice experiences are provided in a laboratory environment under faculty supervision and mentorship with a focus on the integration of diagnostic and treatment measures. *(0.5 credit for each course, Pass/Fail)*

AUDE 8180 and 8280 Clinical Rotation XI-XII

Full-time clinical rotations providing the student opportunities to participate in direct patient care within the scope of practice of audiology. Students will be involved in diagnostic evaluations, patient management, and routine duties within audiology practices to expand and refine clinical skills, professional interactions, and knowledge of practice management. *(16 to 18 credits for each course)*

AUDE 9110, 9120, 9130, 9210, 9220, 9230, 9310, 9320, 9330, 9410, 9420 Audiology Grand Rounds

A weekly forum for clinical presentations by students, lectures, roundtables, discussions with guest speakers, and interaction between faculty and students concerning topics related to clinical rotation experiences and the profession of audiology. *(0 credits, Pass/Fail)*

HEALTH SCIENCE CORE COURSE DESCRIPTIONS**ASHS 6300 Research Methods and Design**

This course will focus on the development and application of graduate-level knowledge and skills related to research methods in the health sciences. Skills regarding the development of a research proposal, including the identification of a problem, conducting a literature review, developing a hypothesis, designing a study, and submitting an Institutional Review Board application are integral components of this course.

(3 credits)

ASHS 6400 Methods of Data Analysis

Development and application of graduate-level knowledge and skills regarding methodologies and statistics appropriate in descriptive and experimental research. Statistical software programs will be utilized to enhance student understanding and application of course material. *(3 credits)*

OTHER DEPARTMENTAL COURSE DESCRIPTIONS**AUDE 6970 2nd-year Comprehensive Examination**

(0 credits, Pass/Fail)

AUDE 6980 2nd-year Comprehensive Examination

Remediation *(0 credits, Pass/Fail)*

AUDE 6990 2nd-year Comprehensive Examination Retest

Prerequisite: Successful completion of AUDE 6980. *(0 credits, Pass/Fail)*

AUDE 7970 3rd-year Comprehensive Examination

(0 credits, Pass/Fail)

AUDE 7980 3rd-year Comprehensive Examination Remediation

(0 credits, Pass/Fail)

AUDE 7990 3rd-year Comprehensive Examination Retest

Prerequisite: Successful completion of AUDE 7980. *(0 credits, Pass/Fail)*

AUDE 7300 Speech and Language Disorders in Adults* (Bridge Course)**

This course is designed to cover the theory and techniques for the differential diagnosis and treatment of speech and language disorders in adults. Students will learn to administer and interpret common diagnostic tests; they will learn to use the assessment data to complete a written assessment report. Students will learn about treatment approaches for various communicative disorders. Topics to be included are assessments, treatments, articulation, fluency, traumatic brain injuries, aphasia, dysarthria, apraxia, dysphagia, voice disorders, and other neurological disorders such as Parkinson's.

(2.5 credits)

AUDE 8120 Speech and Language Disorders in Children* (Bridge Course)**

This course is designed to cover the theory and techniques for the diagnosis and treatment of speech and language disorders in children from preschool through school-age. Students will learn typical and atypical patterns of speech and language development. Students will be introduced to specific assessment methods, as well as specific intervention methods. (2.5 credits)

AUDE 6000 Independent Project (Elective*)**

An in-depth, individual study of a specific topic under the direction of a faculty mentor. Prerequisite: Permission of instructor and department chair. (1 to 6 credits, Pass/Fail)

AUDP 8400 Global Healthcare and Audiology (Elective*)**

This course promotes guided discussion regarding current global hearing healthcare practices, areas of need, and advocacy for effective policies and services. Telehealth in audiology and interprofessional collaboration will be explored as potential opportunities for improving access to hearing healthcare services. (1.5 credits/4 weeks; available dates are Dec. 4, 2023-Jan 7, 2024 or May 27, 2024-June 23, 2024)

AUDP 8460 Telehealth in Audiology (Elective*)**

This course presents the advantages and challenges of telehealth as it relates to clinical practice in audiology. Focus is placed on how communication, innovative technology, safety, and efficiency of patient care are addressed through telehealth. Students explore the feasibility of various telehealth/telepractice models applicable across clinical environments. Global regulatory, , and political considerations will be discussed. (1.5 credits/4 weeks; available dates are Dec. 4, 2023-Jan. 7, 2024 or May 27, 2024-June 23, 2024)

There are 162 semester credit hours required for the four-year Doctor of Audiology program.

*Courses denoted with an asterisk may be delivered via web-based technology.

**Bridge Courses are required for students who do not have six semester credit hours of didactic coursework in the areas of speech and language disorders for adults and children shown on previous transcripts. The student will be required to enroll in one or both of the Bridge Courses to meet minimum credit hours, as specified in certain state licensure requirements. These courses may be taken by other students as electives.

***Elective Courses are not required for the completion of the audiology curriculum. It is completely optional for a student to choose to take an elective course. The credits and grade do appear on the transcript and may fill an area of interest for a student. There is no additional cost for the departmental electives listed here. Elective courses may be available through other departments at a cost.

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