SCHOOL OF BEHAVIORAL AND BRAIN SCIENCES

The School of Behavioral and Brain Sciences offers graduate preparation at the Masters and Doctoral levels designed to meet the needs of students with both research and professional objectives. With instruction and mentoring from internationally recognized faculty, the School's programs emphasize interdisciplinary training coupled with opportunities for intensive research and clinical supervision. The School's degree programs draw upon three clusters of expertise in the School: Communication Sciences and Disorders, Cognition and Neuroscience, and Psychological Sciences. The Callier Center for Communication Disorders-Dallas and Callier-Richardson, large comprehensive clinical and research centers, as well as other interdisciplinary Centers on and off campus further enrich the training of students.

The programs in the School include masters training in Applied Cognition and Neuroscience, Communication Disorders, and Human Development and Early Childhood Disorders. Doctoral training is provided in the professional doctorate in Audiology (Au.D.) and the Ph.D.'s in Cognition and Neuroscience, Communication Sciences and Disorders, and Psychological Sciences. The School also offers a certificate program for graduate students with interests in Evaluation Research.

DEGREES OFFERED

Master of Science in Applied Cognition and Neurosciences
Master of Science in Communication Disorders
Master of Science in Human Development and Early Childhood Disorders

Doctor of Audiology
Doctor of Philosophy in Cognition and Neuroscience
Doctor of Philosophy in Communication Sciences and Disorders
Doctor of Philosophy in Psychological Sciences

Certificate in Evaluation Research

Graduate Program in Applied Cognition and Neuroscience

http://bbs.utdallas.edu/

Faculty

Professors: Hervé Abdi, Peter Assmann, James C. Bartlett, W. Jay Dowling,. , George M. Gerken (emeritus), Richard M. Golden, Susan W. Jerger, Aage R. Møller, George Moushegian (emeritus), Alice O'Toole,

Associate Professors: Lawrence J. Cauller, William F. Katz, Michael Kilgard, Lucien T. Thompson

Assistant Professors:Marco Atzori, Daniel Krawczyk, Christa McIntyre

Distinguished Scholar in Residence: James Jerger

Objectives

The Master of Science in Applied Cognition and Neuroscience (ACN) program is an applied multidisciplinary program which incorporates and integrates methodologies from such diverse fields as psychology, neuroscience, and computer science. The Cognition and Neuroscience specialization area provides a flexible multidisciplinary curriculum for studying the mind and brain which is designed to be adaptable to the individual student's interests. Students enrolling in the Cognition and Neuroscience specialization area with backgrounds in psychology and neuroscience will have the opportunity to gain the diverse skills needed to collect and interpret behavioral and neurophysiological data.The Computational Modeling/Intelligent Systems specialization area provides advanced training applicable to developing mathematical and computer simulation models of the brain and behavior as well as the development of artificially intelligent systems. The Human Computer Interaction specialization area provides excellent preparation for work in areas involving human computer interactions such as usability engineering issues associated with the design and evaluation of user-friendly web-based systems. The Neurological Diagnosis and Monitoring specialization area provides advanced training and preparation for using functional brain imaging methodologies such as: EEG, SPECT, PET, and fMRI for both clinical and experimental investigations. All four specialization areas provide excellent preparation for doctoral work in the Cognition and Neuroscience area.

Career Opportunities in the Applied Cognition and Neuroscience Area

The Master of Science in Applied Cognition and Neuroscience (ACN) program is a multidisciplinary program which should be of interest to business professionals interested in retraining or continuing education and are currently working full-time in a professional-level job. Business professionals in different fields should pursue the appropriate "specialization area" within the ACN degree program. Many courses in the ACN program are offered periodically as evening courses which meet either once or twice a week.

- Software development professionals whose focus is the development of web sites can acquire advanced training in the design and evaluation of web-site effectiveness using advanced behavioral science methodologies through the Human-Computer Interaction specialization area.
- Psychological counselors, and Education professionals (e.g., high school science teachers, adult literacy educators) will greatly benefit from the basic neuroscience and psychological science courses which are offered by the Cognition and Neuroscience specialization area.
- Medical Health professionals (e.g., MRI Technicians and Radiologists) who are working in the area of brain imaging technology will find the Neurological Diagnosis and Monitoring specialization area to be relevant for improving their knowledge and understanding of functional brain imaging technologies such as: EEG, SPECT, PET, and fMRI.
- Software development professionals interested in the area of the implementation of complex mathematical algorithms in software. Such mathematical algorithms are now widely embedded in a variety of software programs for the purposes of providing "intelligent assistance" to the end-user. Software development professionals interested in continuing education in this area should consider the Intelligent Systems specialization area in the ACN program.

Facilities

In addition, to numerous individual faculty research labs, the Applied Cognition and Neuroscience Program utilizes several facilities which are shared among faculty and graduate students. The Computational Systems Laboratory consists of a network of more than a dozen SUN workstations which are used for computationally

intensive models of perceptual, cognitive, and neural processes as well as high-volume data analyses. The Computational Systems Laboratory is located in Green Hall at the University of Texas at Dallas Richardson campus and can be accessed remotely by graduate students and faculty members. The Neuroscience Laboratory facilities are located in Green Hall and the Multipurpose Building at the Richardson campus as well. The Callier Center for Communication Disorders, located adjacent to the University of Texas Southwestern Medical School, provides access to brain imaging laboratories and speech, hearing, and language laboratories.

Admission Requirements

The University's general admission requirements are discussed on page 13.

Admission to the Applied Cognition and Neuroscience Program is based on a review of the applicant's GPA, letters of recommendation, and narrative description of interests and career goals. GRE scores may be submitted with the applicant's application but are not required.

Degree Requirements

The University's general degree requirements are discussedon page 18.

All students in the program are required to regularly review their degree plans with their program advisor. In all areas of specialization students complete 6 hours of approved core courses, 6 hours of approved laboratory courses, 6 hours of approved advanced elective courses, 12 hours of coursework in an approved specialization area, and 6 hours of internship courses. A grade of "B" is the required passing grade for coursework used to fulfill the core course and laboratory course requirements of the degree. Coursework used to fulfill the advanced elective requirement may be taken pass/fail. Internship coursework must be taken pass/fail.

Required Core Courses (18 hours)

Select two of the following approved core courses:

ACN 6330 Cognitive Science I
ACN 6340 Cellular Neuroscience
ACN 6345 Cognitive Science II
ACN 6346 Integrative Neuroscience

Select two of the following approved laboratory courses:

ACN 6312 Research Methods I
ACN 6313 Research Methods II
ACN 6381 Observational Research Methods
ACN 6315 Grant Writing for Researchers
ACN 7345 Neuroanatomy Laboratory
ACN 7378 Advanced Neurophysiology Methods
ACN 5314 Cognitive and Neural Modeling Laboratory
ACN 7367 Speech Perception Laboratory
ACN 7335 Computational Neuroscience
ACN 7322 Computational Models of Language Understanding
ACN 6343 Human Computer Interactions Lab

Select two advanced elective courses: These courses may be chosen from either the Graduate Program in Human Development and Communication Sciences or the Applied Cognition and Neuroscience Program or the courses may be chosen from outside the School of Behavioral and Brain Sciences with approval from the ACN program head.

Area of Specialization (12 hours)

The following four specialization areas have been approved for the Applied Cognition and Neuroscience program but alternative specialization area proposals may be submitted for consideration to the Applied Cognition and Neuroscience program head.

Cognition and Neuroscience Specialization Area

Students selecting this specialization area should take two: ACN 6330 Cognitive Science I and ACN 6346 Systems Neuroscience to fulfill core course requirements. Students should take ACN 6312 Research Methods I and ACN 6313 Research Methods II. Students selecting this specialization area are approved to select any course from the

ACN program (i.e., courses with the prefix ACN) or the Cognition and Neuroscience Area of the Graduate Program in Human Development and Communication Sciences (i.e., courses with the prefix HCS).

Human-Computer Interactions Specialization Area

Students selecting this specialization area should take ACN 6330 Cognitive Science I and ACN 6346 Systems Neuroscience to fulfill core course requirements. Students should take ACN 6312 Research Methods I and ACN 6313 Research Methods II. It is recommended that students with strong backgrounds in computer science or engineering do not take ACN 6312. In addition, students should take two of the following three courses: ACN 6341 Human Computer Interactions I, ACN 6342 Human Computer Interactions II, and ACN 6343 Human Computer Interactions Lab. Students pursuing the behavioral sciences track should take two of the following courses: ACN 6322 Perception, ACN 6333 Memory, ACN 6367 Speech Perception, and HCS 7349 Text Comprehension Seminar. Students pursuing the user-interface development track should take: CS 5343 Algorithm Analysis and Data Structures and CS 6354 Software Engineering. Note that the prerequisites for CS5343 are: CS5303 Computer Science I (or equivalent) and CS 5333 Discrete Structures. Students specializing in the Human Computer Interactions area should regularly review the Arts and Technology courses offered in the School of Arts and Humanities which have the course prefix ATEC and discuss relevant course offerings with the ACN Program Head.

Computational Modeling/Intelligent Systems Specialization Area

Students concentrating in this area should take ACN 6330 Cognitive Science I and ACN 6346 Systems Neuroscience to fulfill core course requirements. All students in this specialization area should take ACN 6313 Research Methods II and either: ACN 5314 Cognitive and Neural Modeling Lab or ACN 6347 Intelligent Systems Analysis. Students pursuing the computer simulation modeling track should take at least one of the following courses: ACN 7335 Computational Neuroscience, ACN 7367 Speech Perception Lab, ACN 7322 Computational Models of Language Understanding. Students pursuing the mathematical modeling track will satisfy the advanced elective requirement in this specialization area by taking the sequence: ACN 6346 Neural Net Mathematics, ACN 6347 Intelligent Systems Analysis and ACN 6349 Intelligent Systems Design. Note that STAT 5351, linear algebra, multivariable calculus, and ACN 5314 Cognitive and Neural Modeling Lab are recommended prerequisites for: ACN 6346. The following Computer Science and Electrical Engineering courses are pre-approved electives for students specializing in the Intelligent Systems area who have the appropriate prerequisite background in computer science and/or electrical engineering: CS6320 (Natural Language Processing), CS 6321 (Discourse Processing), CS6364 (Artificial Intelligence), CS6373 (Intelligent Systems), CS6375 (Machine Learning), CS6384 (Computer Vision), EE6362 (Speech Processing), EE6363 Digital Image Processing, EE6364 (Pattern Recognition), and EE 6365 (Adaptive Signal Processing).

Neurological Diagnosis and Monitoring Specialization Area

Students selecting this specialization area should take ACN 6330 Cognitive Science I and ACN 6346 Systems Neuroscience to fulfill core course requirements. Students should take ACN 6312 Research Methods I and ACN 6313 Research Methods II. Students should also take ACN 7344 Functional Human Neuroanatomy and ACN 6373 Intraoperative Monitoring I. Students should choose at least 2 of the following courses as specialization area electives: ACN 6310 Fundamentals of Functional Brain Imaging, ACN 6374 Intraoperative Monitoring II, ACN 7315 Statistical Analysis of Brain Imaging Data, ACN 7329 Functional Brain Imaging Practica, ACN 6372 Pathophysiology of Disorders of the Nervous System, and ACN 7330 Advanced Functional Brain Imaging.

Internships (6 hours)

Students whose immediate post-graduate goals are graduate school and medical school should fulfill the Internship Requirement by taking six credit hours of HCS 8V80 in order to obtain research experience. Students not intending to pursue graduate or medical school training immediately after receiving their ACN masters degree should discuss internship opportunities with the Program Head during their second semester of enrollment in the ACN program.

ACN 7V71 Industry Internship (1-6 credit hours). This course may be taken only pass/fail.
ACN 7V72 Research Internship (1-6 credit hours) . This course may be taken only pass/fail.
HCS 8V80 Research in HCS (1-6 credit hours). This course may be taken only pass/fail

Course Descriptions

Core Courses

ACN 6330 (HCS 6330) Cognitive Science (3 semester hours) Cognitive and neural processing approaches to understanding perception, attention, memory, thought, and language. (3-0) Y

ACN 7344 Functional Human Neuroanatomy (3 semester hours) Function of each major brain system as related to the organization and synaptic connections of their principal nuclei. Function of each system related to the neurological disorders associated with disease or lesions at specific locations. (3-0) T

ACN 6346 (HCS 6346) Systems Neuroscience (3 semester hours) Integrative systems level study of the nervous system. Aspects of neural mechanisms and circuitry underlying regulation of motor behaviors, sensory and perceptual processing, biological homeostasis, and higher cognitive functions. (3-0) Y

Methods Courses

ACN 6312 (HCS 6312) Research Methods in Behavioral and Brain Sciences - Part I (3 semester hours). Applying, understanding, and interpreting various statistical techniques in behavioral science context. Participants have the opportunity to learn appropriate statistical details for basic descriptive and inferential statistics, the interrelationships among techniques, and computer skills required for data analyses. (3-0) Y

ACN 6313 (HCS 6313) Research Methods in Behavioral and Brain Sciences - Part II (3 semester hours). Topics in general linear modeling including factorial analysis of variance, analysis of covariance, between and within subject designs, and multiple regression. Prerequisite: ACN 6312 or consent of instructor. (3-0) Y

ACN 6351 (HCS 6351) Alternative Statistical Data Analysis (3 semester hours) Alternative statistical data analysis techniques that complement the classical general linear modeling approach. (3-0) Y

ACN 6373 (HCS 6373) Intraoperative Neurophysiological Monitoring I (3 semester hours). The anatomical and physiological basis for the use of electrophysiological techniques in intraoperative neurophysiologic monitoring and in diagnosis of disorders affecting the nervous system. (3-0) Y

ACN 6374 (HCS 6374) Intraoperative Neurophysiological Monitoring Part II (3 semester hours). The use of recordings of neuro-electric brain potentials and their interpretation for diagnostic purposes and for intraoperative monitoring. (3-0) Y. Prerequisite: ACN 6373 (HCS 6373)

ACN 7322 (HCS 7322) Computational Models of Language Understanding (3 semester hours). Probabilistic methods for natural language understanding. Use of the MATLAB computer language for instantiating specific knowledge-based computational theories of natural language understanding. Prerequisites: Computer Programming Experience is recommended but not required. (3-0) T

ACN 5314 (HCS 5314) Cognitive and Neural Modeling Lab (3 semester hours) Auto-associative, associative, competitive learning, recurrent, and back-propagation artificial neural network algorithms in a "hands-on" micro-computer laboratory environment using special simulation software. Applications to perceptual, cognitive, computational, and neuroscience problems. Prerequisites: Linear Algebra and Computer Programming Experience is recommended but not required. (3-0) T

ACN 7343 (HCS 7343) Neuropharmacology (3 semester hours) Biology of neurotransmission in the central nervous system. Includes ionotropic and metabotropic coupling of all known classes of receptors to both their cellular and systemic effects. Clinical efficacy, side effects, and other issues related to drug use and abuse are covered. Prerequisite: ACN 6340 or ACN 6346. (3-0) T

ACN 6343 Human Computer Interactions Lab (3 semester hours) Provides students with resources to learn and perform hands-on lab-based techniques such as usability testing and cognitive walkthroughs. (3-0) T

ACN 7345 (HCS 7345) Neuroanatomy Laboratory (3 semester hours). Laboratory experience with neural tracing techniques employed in neuroscience research. Prerequisite: HCS 7344 or consent of instructor. (3-0) T

ACN 7378 (HCS 7378) Advanced Neurophysiology Methods (3 semester hours). Hands-on experience with deeply anesthetized and reduced in vitro brainslice or dissociated cell preparations widely used in neuroscientific research. Prerequisite: ACN 6340 and consent of instructor. (3-0) R

ACN 7367 (HCN 7367) Speech Perception Laboratory (3 semester hours) Introduction to the field of speech processing by computer, with primary application to research techniques in the study of speech perception. (0-9) T

ACN 7335 Computational Neuroscience (3 semester hours) Introduction to state-of-the-art computer methods for simulation of biologically realistic neuronal dynamics. Students must demonstrate some degree of computer skills. (3-0) R

Elective and Specialization Area Courses

Note that the following list only represents a subset of the possible approved elective and specialization area courses. Students in the Applied Cognition and Neuroscience program should select their elective and specialization area coursework in consultation with their faculty advisor or the ACN Program Head. All courses with an HCS (Human Development and Communication Sciences) prefix area are automatically approved elective courses. Coursework outside the School of Behavioral and Brain Sciences may also be approved as an appropriate elective course if special permission from the ACN Program Head is obtained.

ACN 6340 (HCS 6340) Cellular Neuroscience (3 semester hours) Basic neural biology and physiology and principles of synaptic transmission. (3-0) Y

ACN 6V81 Special Topics in Applied Cognition and Neuroscience (1-9 semester hours) Topics vary from semester to semester. May be repeated for credit as topics vary. ([1-9]-0) S

ACN 6332 (HCS 6332) Perception (3 semester hours) Psychophysical, neurophysiological, and computational foundations of sensation and perception. Basic senses of vision, audition, chemoreception, and tactile processing, with emphasis on understanding the processes that take us from neurons to perception and action. (3-0) T

ACN 6333 Memory (HCS 6333) (3 semester hours) Theoretical frameworks for knowledge acquisition and representation. Includes information processing and neuropsychological perspectives. (3-0) T

ACN 6334 Attention (HCS 6334) (3 semester hours) Theory and evidence on the study of attention especially in human vision and audition. Includes perceptual learning, information processing, and neuropsychological approaches. (3-0) T

ACN 6341 Human Computer Interactions I (3 semester hours) Methods and principles of human-computer interaction (HCI) , user-centered design (UCD) , and useability evaluation. Provides broad overview of HCI and how HCI informs UCD processes throughout product development lifecycle. (3-0) T

ACN 6342 Human Computer Interactions II (3 semester hours) Detailed exploration of human-computer interaction (HCI) through readings in journal articles and research reports. Practical experience in methodology typically used in the design of usable systems. (3-0) T

ACN 6348 (HCS 6348) Neural Net Mathematics (3 semester hours). Vector calculus and vector calculus-based probability theory with artificial neural network modeling applications. Intended to provide mathematics preparation for ACN 6347 and ACN 6349. Prerequisites: Either: (1) Linear algebra, multivariable calculus, STAT 5351, ACN 5314, or (ii) consent of instructor. (3-0) T

ACN 6347 (HCS 6347) Intelligent Systems Analysis (3 semester hours). Mathematical tools for investigating the asymptotic behavior of both deterministic and stochastic nonlinear dynamical systems for the purposes of building computational models in the fields of neuroscience, psychology, and artificial intelligence. Topics include: artificial neural network architectures, Lyapunov stability theory, nonlinear optimization theory, stochastic approximation theory, and the Gibbs Sampler. Prerequisites: HCS 6348 or consent of instructor (or equivalent). (3-0) T

ACN 6349 Intelligent Systems Design (3 semester hours). Mathematical tools for the design and evaluation of artificially intelligent deterministic and stochastic nonlinear dynamical systems for the purposes of building computational models in the fields of neuroscience, psychology, and artificial intelligence. Topics include: (1) Markov Random Field probability representations, and (2) asymptotic mathematical statistical theory for: parameter estimation, model selection, and hypothesis testing. Prerequisites: HCS 6347 or consent of instructor. (3-0) T

ACN 6395 (HCS 6395) Cognitive Psychology (3 semester hours) Theory and research on perception, learning, thinking, psycholinguistics, and memory. (3-0) Y

Internship

ACN 7V71 Industry Internship May be repeated for credit. This course may only be taken pass/fail. ([1-6]-0) S

ACN 7V72 Research Internship May be repeated for credit. This course may only be taken pass/fail. ([1-6]-0)S

g and cognitive walkthroughs. (3-0) T

Master of Science In Communication Disorders

http://bbs.utdallas.edu/

Faculty

Professors: Thomas Campbell, Sandra Chapman, Christine Dollaghan, Robert D. Stillman, Linda Thibodeau, Emily Tobey, Hanna Ulatowska, Anne van Kleeck

Associate Professors: William F. Katz, Pamela Rollins

Assistant Professor: Mandy Maguire

Clinical Faculty: Michelle Aldridge, Lucinda Dean, Sara Haynes, Karen Kaplan, Helen Kenedi, Janice Lougeay, Felicity Sale

Objectives

The Master of Science program in Communication Disorders offers broad-based professional preparation in speech-language pathology within an environment which supports an active program of clinical services and research. Students are provided comprehensive exposure to clinical approaches in communication disorders and to the scientific foundations from which clinical approaches are derived. Practical experience is available in a variety of clinical, educational, and medical settings.

The graduate program in Communication Disorders is accredited in speech-language pathology by the Council on Academic Accreditation of the American Speech-Language-Hearing Association.

Facilities

The principal sites for the academic, clinical, and research activities of the Communication Disorders program is the U.T. Dallas Callier Center for Communication Disorders, adjacent to The University of Texas Southwestern Medical Center, and Callier-Richardson on the university's main campus. These facilities, and others throughout the Metroplex, provide the educational, clinical, research, and medical environments essential for an interdisciplinary program in Communication Disorders.

Admission Requirements

The University's general admission requirements are discussed on page 13.

Admission to the Communication Disorders Program is based on a review of the applicant's GPA, GRE scores, letters of recommendation, and statement of purpose. The GRE score is included in the evaluation of the applicant's record. In general, students admitted to the program have a combined Verbal and Quantitative score on the GRE of at least 1000. However, there is no minimum cut-off score for admission nor does a score of at least 1000 assure admission to the program.

Degree Requirements

The University's general degree requirements are discussed on page 18.

The Master of Science program requires a minimum of 48 semester hours. Students completing the master's degree meet the academic and clinical practicum requirements for the Certificate of Clinical Competence offered by the American Speech-Language-Hearing Association.

Student entering the master's program with a bachelor's degree in speech-language pathology are required to take the following courses: COMD 6221 Voice Disorders, COMD 6222 Stuttering, COMD 6320 Motor Speech Disorders, COMD 6377 Assessment and Treatment of Adult Neurogenic Disorders, COMD 7303 Dysphagia, and COMD 7378 Assessment and Treatment of Language Disorders in Preschool and School-Age Children. Students must also complete 23 hours of approved elective courses including a minimum of two additional courses in the area of language disorders in children and one additional course in the area of language disorders in adults. Students enroll in Practicum (HCS 7380) or Internship (COMD 6630) each semester in order to earn the necessary clock hours for certification and licensure. However, a maximum of 9 semester hours of Practicum/ Internship may be counted toward the minimum 48 semester hours required.

Combined Master/Doctoral Study

Students who wish to earn a clinical master's degree while pursuing doctoral study may apply for combined master's/doctoral study. Students approved to enroll in both masters and doctoral course pursue an individualized plan of study leading to both degrees.

Comprehensive Examination

All students seeking the master's degree in Communication Disorders must pass a written comprehensive examination. A thesis is optional.

Out-Of-Field Students

Students entering the program who lack undergraduate preparation in speech-language pathology or audiology are required to take a specified 15 semester hours of preparatory courses. These courses may be taken at U.T. Dallas in conjunction with graduate coursework or may be taken at another university.

Course Descriptions

COMD 6221 Voice Disorders (2 semester hours) Etiology of voice disorders and methods for assessing and modifying vocal behavior. (2-0) Y

COMD 6222 Stuttering (2 semester hours) Principles, methods, and procedures for assessment and intervention of stuttering and associated disorders. (2-0) Y

COMD 6305 Speech Science (3 semester hours) Anatomy, physiology, and functional organization of speech. Mechanisms of normal speech production and perception, with applications to the clinical setting. (3-0) Y

COMD 6307 Language Acquisition (3 semester hours) Development of the phonological, morpho-syntactic, semantic, and pragmatic aspects of language, and consideration of the social, psychological, and cultural influences. (3-0) Y

COMD 6317 Language in Communication Disorders (3 semester hours) Basic processes underlying language disruptions in phonology, morphology, syntax, semantics and pragmatics. Biological and social aspects of language. (3-0) Y

COMD 6319 Articulation and Phonologic Disorders (3 semester hours) Etiology, symptomatology, evaluation, and treatment of articulation and phonologic disorders. (3-0) Y

COMD 6320 Motor Speech Disorders (3 semester hours) Anatomic and physiologic bases of the motor speech mechanism. Etiology, symptomatology, evaluation and treatment techniques for a variety of motor speech disorders in children and adults. (3-0) Y

COMD 6348 (AUD 6348) Counseling for Communication Disorders Professionals (3 semester hours) Psychological aspects of communication disorders in the context of the family system. Basic counseling and problem-solving skills to use as an adjunct to roles as communication disorders professionals. Emphasis on helping students to gain comfort and skill in coping with their clients' emotions and giving their clients constructive feedback. (3-0) Y

COMD 6630 Advanced Seminar Internship in Communication Disorders (6 semester hours) Intensive internship program in a clinical setting. Pass/Fail only. (May be repeated for credit.) Prerequisite: Consent of instructor (0-18) S

COMD 6377 Neurogenic Communication Disorders I (3 semester hours) Symptomatology and diagnosis of aphasia, right hemispheric disorders, traumatic brain injury, and dementing disorders. (3-0) Y

COMD 6378 Neurogenic Communication Disorders II (3 semester hours) Language and cognitive intervention for individuals with adult neurogenic communication disorders with management of special populations including stroke, traumatic brain injury and dementia. (3-0) Y

COMD 7204 Craniofacial Disorders (2 semester hours) Etiology, symptomatology, evaluation, and treatment of craniofacial disorders emphasizing cleft lip and palate. (2-0) Y

COMD 7207 Advanced Topics in Dysphagia (2 semester hours) Integration and application of dysphagia evaluation and treatment at an advanced level. Management of special populations including stroke, traumatic brain injury, and oral/largyngeal cancers. Family and patient counseling/education. Ethical issues and decision-making. Prerequisite: COMD 7303. (2-0) Y

COMD 7209 Pediatric Medical Speech Pathology (2 semester hours) Terminology and medical diagnoses affecting the practice of speech pathology in the pediatric medical setting. Guest lectures by practicing clinicians will vary from year to year. (2-0) Y

COMD 7252 Cerebral Palsy (2 semester hours) Normal and abnormal fine motor, gross motor, respiratory, and feeding development. Characteristics of cerebral palsy. Feeding and speech/language assessment and intervention for individuals with cerebral palsy. (2-0) Y

COMD 7256 Bilingual Language (2 semester hours) Second language development in various languages and cultural contexts. Issues of assessment and intervention. Language difference vs. language disorder. (2-0) T

COMD 7260 Medical Speech-Language Pathology (2 semester hours) In depth orientation to general practices used in medical settings. Concepts and terminology utilized within the contexts of various medical conditions and environments. (2-0) Y

COMD 7301 Public School Methods (3 semester hours) Practices and procedures of implementing clinical skills in the public schools including applying federal and state laws to best practices in assessment and intervention. (3-0) Y

COMD 7302 Seminar in Aphasiology (3 semester hours) Current issues in neurolinguistics. Models of brain and language; classification, symptoms, and etiology of aphasia. Analysis of aphasic language with respect to phonology, morphology, syntax, and semantics. (3-0) Y

COMD 7303 Dysphagia (3 semester hours) Anatomic and physiologic bases of normal swallow. Etiology, symptomatology, evaluation and treatment techniques for swallowing disorders in children and adults. (3-0) Y

COMD 7305 Communication and the Aging Brain (3 semester hours) Social and biological factors affecting language and communication in normal aging. Pathological changes in aphasia and dementia. Assessment and intervention strategies. (3-0) Y

COMD 7306 Cultural Issues in Communication (3 semester hours) The multicultural nature of society, the role of language and communication in cultural identity, and how practice in the field of communicative disorders is tailored to cultural and linguistic diversity. (3-0) Y

COMD 7308 Preliteracy Development (3 semester hours) Historical, cultural, theoretical, developmental, and pedagogical perspectives on the foundation for literacy in early childhood. (3-0) T

COMD 7319 Birth-to-Three (3 semester hours) Assessment and treatment of infants and toddlers with a variety of speech, language, feeding, and oral-motor disorders. (3-0) Y

COMD 7323 Auditory-Verbal Methods (3 semester hours) Comprehensive survey of the auditory-verbal approach to the habilitation of children with hearing losses from infancy through the early elementary years; includes philosophy, research, special problems, and specific methodology. (3-0) Y

COMD 7324 (AUD 7324) Seminar in Cochlear Implants and Technology for Persons With Hearing Impairments (3 semester hours) Prosthetic alternatives available for individuals with profound hearing impairments. Topics include speech perception in children and adults, signal processing, aural rehabilitation techniques, prosthetic devices such as cochlear implants, and techniques for using such devices. (3-0) Y

COMD 7325 Hearing and Deafness (3 semester hours) Introduction to issues, assessment, and management of hearing-impairment. Includes principles and prerequisites for intervention, amplification, aural habilitation programs, sign language, and deaf culture. (3-0) Y

COMD 7345 Pediatric Traumatic Brain Injury (3 semester hours) Assessment and management of acquired brain injury in children including linguistic, cognitive, psychosocial, educational, and neurological factors within a brain plasticity framework. (3-0) T

COMD 7354 Seminar in Brain and Communicative Development (3 semester hours) Seminar on brain/communicative behavior relationships in development. Emphasis on factors underlying communicative abilities and disorders. Pass/Fail only. (3-0) Y

COMD 7362 Seminar in Autism (3 semester hours) Issues concerning the diagnosis and theories of autism. The development of social, communication/language, and cognitive skills in autism, as well as various therapeutic approaches. (3-0) Y

COMD 7367 Advanced Management of Neurogenic Communicative Disorders (3 semester hours) Design of language intervention strategies for individuals with adult neurogenic communication disorders and presentation of difficult diagnostic cases. Demonstration/participation with clients. Prerequisite: COMD 7628. (3-0) Y

COMD 7368 Cognitive Rehabilitation (3 semester hours) Basics of cognition including attention, memory, reasoning, and executive function skills and how it relates to communication. Studying both normal cognitive skills and impaired cognition, including evaluation and treatment theories. (3-0)R

COMD 7373 Seminar in Hearing and Speech Science (3 semester hours) Current topics in hearing and speech science. (May be repeated for credit.) Prerequisite: Consent of instructor. (3-0) T

COMD 7377 Assessment and Intervention of Children With Severe Language Disorders (3 semester hours) Language assessment and intervention with children birth-to-three or older children who have severe language handicapping conditions. Formal, informal, and observational assessments used for children with severe language disorders. Applying, understanding, and interpreting assessment information as it relates to designing and implementing intervention. (3-0) T

COMD 7378 Assessment and Intervention of Language Impairments in School-Age Children (3 semester hours) Assessment and intervention for children with diverse language impairments. Assessment will emphasize developmental capabilities as well as individual differences using both standardized and non-standardized procedures. Intervention strategies in various settings appropriate for school-age children and adolescents. (3-0)Y

COMD 7V82 Special Topics in Communication Disorders (1-3 semester hours) Selected topics and current research in communication disorders. Topics will vary from semester to semester. (May be repeated for credit.) ([1-3]) R

COMD 7384 Augmentative Communication (3 semester hours) Components and dimensions of augmentative and alternative communication (AAC) systems. AAC assessment and intervention for individuals with congenital and acquired complex communication needs. Includes hands on AAC equipment labs. (3-0) Y

COMD 7389 Alzheimer's Disease and Related Disorders (3 semester hours) Clinical characteristics, diagnosis, cognitive-linguistic evaluation and discourse based assessment, direct and indirect intervention of adults with different dementias such as Alzheimer's disease, frontotemporal dementias, and vascular dementia. (3-0) R

COMD 7V86 Special Topics in Child Language (1-3 semester hours) Current issues in child language emphasizing research on intervention practices. Specific topics vary from semester to semester. (May be repeated for credit to a maximum of 9 hours.) ([1-3]-0) R

COMD 7V90 Special Topics in Hearing and Speech Science (1-6 semester hours) Special topics and current research in hearing and speech science. (May be repeated for credit to a maximum of 9 hours.) ([1-6]-0) R

COMD 7V91 Methods in Communication Disorders (1-3 semester hours) Issues related to methods of assessment and intervention in communication disorders. (May be repeated for credit.) ([1-3]-0) R

COMD 7V98 Directed Study in Communication Disorders (1-9 semester hours) Individualized program of study which may include reading, research or implementation of clinical strategies and/or other designated activities. Pass/Fail only. (May be repeated for credit.) ([0]-[3-27]) S

COMD 8V80 Research in Communication Disorders (1-9 semester hours) Supervised research and readings. (May be repeated for credit.) ([0]-[9-27]) S

COMD 8V98 Thesis (3-6 semester hours) (May be repeated for credit.) ([3-6]-0) S

Graduate Program in Human Development and Early Childhood Disorders

http://bbs.utdallas.edu./

Faculty

Professors: Thomas G.R. Bower, Duane Buhrmester, Bert S. Moore, Margaret Tresch Owen, John W. Santrock, Robert D. Stillman, Marion K. Underwood

Associate Professors: Teresa Nezworski, Pamela Rollins, Melanie J. Spence

Assistant Professors: Shayla Holub, Mandy Maguire

Clinical Faculty: Michelle Aldridge, Cheryll Bryant

Senior Lecturers: Toosje Van Beveren

Objectives

The Master of Science program in Human Development and Early Childhood Disorders is designed for students with professional interests in early child development and disorders. The curriculum offers a strong foundation in the normative path of physical, cognitive and social development with specialized training in diagnostic and intervention techniques needed to work with disorders of early childhood. The professional plan of study is designed for students interested in a career in the delivery of services to young children who show developmental delays and disorders and their families. This program will be of special interest to students wishing to work with infants and young children and their families in early childhood intervention programs and other professional settings, including schools, hospitals, and medical clinics. Classroom training is combined with practical experience in a variety of clinical and educational settings. Students graduating from the program qualify to work as Early Intervention Specialists. A research plan of study is also available which focuses on the development of skills necessary to conduct research in child development. The research plan requires a directed project and thesis.

Facilities

The principal sites for the academic and research activities of the The Human Development and Early Childhood Disorders program are located on the main campus in Richardson and at the UTD/Callier Center for Communication Disorders on the campus of the UT Southwestern Medical Center at Dallas and Callier-Richardson on the Richardson campus. Facilities at the main campus include research and observational laboratories, and laboratories dedicated to infant assessment. The Toddler Playgroup program meets weekly in an early childhood classroom in the Student Union and provides on-campus fieldwork opportunities with toddlers with special needs and their parents. The Callier Center operates a laboratory preschool as well as a number of other educational and clinical programs serving young children. These facilities, and others throughout the Metroplex, provide essential educational, clinical, and research environments for training in Human Development and Early Childhood Disorders.

Admission Requirements

The University's general admission requirements are discussed on page 13.

The Human Development and Early Childhood Disorders program is designed for students with backgrounds in psychology, special education, early childhood education, and communication disorders. Students from other disciplines are also encouraged to apply.

Admission to the Human Development and Early Childhood Disorders program is based on a review of the applicant's GPA, GRE scores, letters of recommendation, and narrative description of interests and career goals. In general, a combined Verbal and Quantitative score on the GRE of at least 1000 is advisable based on our experience with student success in the program. However, there is no minimum cut-off score for admission nor does a score of at least 1000 assure admission to the program.

Degree Requirements

The University's general degree requirements are discussed on page 18.

The two plans of study have a common core of courses. In the professional track there is additional coursework and experience in applied settings designed to prepare students to work with children and their families. The emphasis in the research track is in developing expertise in conducting research in the field of human development and early childhood disorders. A required research project is facilitated by close work with a research mentor from the faculty.

Students are advised that participation in off-campus practicum and internship requires a criminal background check. Students excluded from off-campus sites for any reason may be unable to complete all degree requirements. Students are responsible for the cost of criminal background checks.

The Master of Science program requires a minimum of 48 semester hours. Specific degree requirements follow.

Professional Plan of Study
Required Core Courses (24 hours)
HDCD 5311 The Developing Child: Infants and Toddlers
HDCD 5312 Atypical Development
HDCD 5315 Assessment Theory
HDCD 5316 Developmental Assessment
HDCD 5320 Service Coordination of Community Resources
HDCD 5330 Intervention Paradigms
HDCD 6310 Parent Education
HDCD 6320 The Developing Child: Preschool Years

Practicum (3 hours)
HDCD 7V20 Practicum in Early Childhood Disorders

Internship (6 hours)
HDCD 7V20 Internship in Early Childhood Disorders

Electives (15 hours)
HCS 6350 Social Development
HCS 6331 Cognitive Development

HCS 6358 Affective Development
HDCD 6360 Behavioral Management
HDCD 6370 Infant Intervention
HDCD 6395 Medical and Biobehavioral Factors in ECD
HDCD 7350 Seminar: Early Childhood Disorders
COMD 6307 Language Acquisition
COMD 7362 Seminar in Autism
HCS 6326 Infant Perception
HCS 7376 Child Psychopathology
HDCD 7V98 Independent Study
HDCD 8V80 Independent Research

Research Plan of Study
Required Core Courses (18 hours)
HDCD 5311 The Developing Child: Infants and Toddlers
HDCD 5312 Atypical Development
HDCD 5315 Assessment Theory
HCS 6331 Cognitive Development
HCS 6350 Social Development
COMD 6307 Language Acquisition

Research Methods Core (6 hours)
HCS 6312 Research Methods in Human Development and Communication Sciences - Part I
HCS 6313 Research Methods in Human Development and Communication Sciences - Part II

Elective Coursework (18 hours)
Directed Project (6 hours)
HDCD 7610 Directed Project

Teacher Certification Early Childhood – 4th Grade
Required of post-baccalaureate students seeking Early Childhood-4th grade Teacher Certification

HDCD 5301 Child Development
HDCD 5302 Educational Psychology
HDCD 5303 Exceptional Children
HDCD 5304 Cognitive Development

Course Descriptions

HDCD 5301 Child Development (3 semester hours) Introduction to psychological theory and research on physical, cognitive, social, and emotional development from birth to adolescence. Cannot be used to satisfy degree requirements for HDCD, ACN, and COMD programs. (3-0) Y

HDCD 5302 Educational Psychology (3 semester hours) This course introduces the psychological theories and research underlying various teaching strategies and provides a framework for understanding student cognitive and motivational development. Emphasis will be on applications in actual teaching behavior. This course assumes an introductory background in child development. (3-0) S

HDCD 5303 Exceptional Children (3 semester hours) Introduction to the characteristics of exceptional children and their education, including children with disabilities (learning, emotional/behavioral, communication and physical) as well as those who are gifted. The causes and assessment of exceptionality are examined, along with educational and social policy considerations. This course assumes an introductory background in child development. (3-0) Y

HDCD 5304 (HCS 6331) Cognitive Development (3 semester hours) A contrast of Piagetian, behaviorist, and information-processing approaches to the development of cognitive processes during childhood. This course assumes an introductory background in child development. Cannot be used to satisfy degree requirements for HDCD, ACN, and COMD programs. (3-0) Y

HDCD 5311 The Developing Child: Infants and Toddlers (3 semester hours) Relevant developmental theories and processes as well as skills acquired in motor, sensory-perceptual, cognitive, and social domains from the prenatal period through two years of age. (3-0) Y

HDCD 5312 (HCS 6356) Atypical Development (3 semester hours) Disorders of development from conception to age three, emphasizing etiology, diagnosis and treatment. Impact of delays in the acquisition and integration of various developmental skills as they relate to specific disorders of personality and socialization, sensory and motor skills, and language and cognition. (3-0) Y

HDCD 5315 Assessment Theory (3 semester hours) Latest developments in the field of infant/toddler assessment, including behavioral observation, contextual multi-faceted assessment, and inclusion of the family. Traditional psychometrics and assessment tools/techniques. Pre- or corequisite: HDCD 5311. (3-0) Y

HDCD 5316 Developmental Assessment (3 semester hours) Play-based and family assessment protocols. Diagnostic classification through differential diagnosis decision-making. Emphasis on interpretation and integration of diagnostic information. Prerequisites: HDCD 5311, 5315. (3-0) Y

HDCD 5320 Service Coordination of Community Resources (3 semester hours) Policies and procedures pertinent to service coordination of community resources in early intervention and family-centered practices that help families become more independent. (3-0) Y

HDCD 5330 Intervention Paradigms (3 semester hours) Historical, theoretical, political, and research bases for approaches to early intervention with at-risk and handicapped infants, toddlers, and preschoolers and their families. Insights gained from research on effectiveness of early intervention. (3-0) Y

HDCD 6310 Parent Education (3 semester hours) Skills needed by professionals to assess parents' strengths, resources and needs as well as to assist parents in understanding and promoting their children's development and adjustment. Includes effective communication techniques, basic counseling skills, and strategies to enhance parental effectiveness within the family and community. (3-0) Y

HDCD 6320 The Developing Child: Toddler and Preschool Years (Two to Five Years) (3 semester hours) Relevant developmental theories and processes as well as skills acquired in motor, sensory-perceptual, cognitive, and social domains from 2 to 5 years Prerequisite: HDCD 5311. (3-0) Y

HDCD 6360 Behavior Management (3 semester hours) Observational methodology in behavioral assessment and a review of principles and procedures of behavior change from social learning and applied behavior analysis perspectives. Particular attention will be given to the design, implementation, and evaluation of behavioral interventions with children and families. (3-0) Y

HDCD 6370 Infant Intervention (3 semester hours) Methods and procedures for facilitating development of high risk or handicapped infants through relationship-based intervention. Reviews the contributions and perspectives of various early intervention disciplines. Students design infant intervention programs. (3-0) Y

HDCD 6380 Precursors to Development of Literacy (3 semester hours) The acquisition of linguistic skills antecedent to early reading and the problems of acquisition of reading during early school years. Prerequisite: HDCD 6320. (3-0) R

HDCD 6395 Medical and Biobehavioral Factors in Early Childhood Disorders (3 semester hours) The normal functioning of organ systems and the most common malformations, dysfunctions, and diseases. Effects of these disorders on the child and family are studied. (3-0) Y

HDCD 6V81 Special Topics in Human Development and Early Childhood Disorders (1-9 semester hours) Topics vary from semester to semester. May be repeated for credit as topics vary. ([1-9]-0) R

HDCD 7V20 Practicum/Internship in Early Childhood Disorders (3 or 6 semester hours)(P/F grading) Supervised participation in early intervention settings, including professional activities such as assessment, intervention, service coordination and interdisciplinary teaming. Weekly seminars address reflective practice as a tool for professional growth, ethical decision making in real situations, and professional use of self. Taken for 3 hours credit coincident with practicum placement and for 6 hours credit coincident with internship placement. Prerequisite: Consent of instructor. May be repeated for credit. (3-0 or 6-0) S

HDCD 7350 Advanced Seminar in Early Childhood Disorders (3 semester hours) Selected topics will vary from semester to semester. Pass/Fail only. May be repeated for credit. (3-0) Y

HDCD 7V98 Independent Study (1-6 semester hours) Individualized program of study which may include reading, research, and/or other designated activities. May be repeated for credit. ([1-6]-0) S

HDCD 8V80 Independent Research (1-6 semester hours) Individualized program of study which includes research and/or other designated activities. ([1-6]-0) S

Doctoral Programs in Cognition and Neuroscience, Communication Sciences and Disorders, Psychological Sciences

http://bbs.utdallas.edu/

Faculty

Professors: Hervé Abdi, Peter F. Assmann, James C. Bartlett, Thomas G.R. Bower, Duane Buhrmester, Thomas Campbell, Sandra Chapman, J. Michael Coleman, Christine Dollaghan, W. Jay Dowling, George M. Gerken (emeritus), Richard Golden, John Hart, Susan W. Jerger, Aage R. Møller, Bert S. Moore, George Moushegian (emeritus), Alice J. O'Toole, Margaret T. Owen, Ross J. Roeser, Allen L. Rupert (emeritus), John W. Santrock, Robert D. Stillman, Linda Thibodeau, Emily Tobey, Hanna Ulatowska, Anne van Kleeck, Marion Underwood

Associate Professors: Lawrence J. Cauller, William F. Katz, Michael Kilgard, Teresa Nezworski, Pamela Rollins, Melanie Spence, Lucien T. Thompson,

Assistant Professors: Marco Atzori, Shayla Holub, Daniel Krawczyk, Christa McIntyre, Mandy Maguire, Candace Mills

Distinguished Scholar in Residence: James Jerger

Objectives

The School of Behavioral and Brain Sciences offers doctoral programs in Cognition and Neuroscience, Communication Sciences and Disorders, and Psychological Sciences. Each provides preparation in basic and applied aspects of behavioral and brain sciences. The faculty consists of specialists in developmental psychology, cognitive science, neuroscience, and communication sciences and disorders. Students may specialize in these areas or pursue study across areas as in the study of language development, aging, auditory and visual perception, and behavioral and neural plasticity. Core and specialized courses provide the foundation for a wide spectrum of doctoral research in laboratories, schools, and clinics.

Cognition and Neuroscience

The doctoral program in Cognition and Neuroscience provides opportunities for disciplinary and interdisciplinary study in the fields of cognitive science and neuroscience. The extensive laboratory resources of the School of Behavioral and Brain Sciences offer students numerous options for research in cellular and systems neuroscience, cognition and perception, and computational modeling of perceptual and neural processes. The doctoral programs in Psychological Sciences and Communication Sciences and Disorders provide additional opportunities for coursework and research experience. For students with interests in cognitive neuroscience, the facilities of the U.T. Southwestern Medical School including its brain imaging facilities are available for basic and clinical research.

Psychological Sciences

The doctoral program in Psychological Sciences provides opportunities for intensive graduate study in

developmental and cognitive psychology. The program also offers strong interdisciplinary linkages to other areas within the School of Behavioral and Brain Sciences, including cognitive science, behavioral neuroscience, and communication sciences and disorders. The primary goal of the program is to prepare research investigators for academic and applied settings. Students work closely with one or more faculty members in a collegial apprenticeship type of relationship. Although there is a core curriculum that all students fulfill, the program is flexible enough to allow students to individually tailor their studies in creative ways. The opportunities for collaborative research with faculty, as well as a rich array of colloquia and brown-bag seminars, provide a stimulating environment for scholarly development.

Communication Sciences and Disorders

The doctoral program in Communication Sciences and Disorders provides opportunities for graduate study and research in the areas of speech, language, and hearing science and in the disorders which affect speech, language, and hearing. Students have available a wealth of research opportunities in laboratories, clinics, and schools, both on-campus and in the community. Close liaison with the U.T Southwestern Medical Center provides patient access and numerous opportunities for research in medical settings. Coursework and research options within the doctoral programs in Psychological Sciences and Cognition and Neuroscience allow students to pursue interdisciplinary study in areas such as brain imaging, child language, plasticity and recovery, and aging.

Facilities

The offices and research facilities of the School of Behavioral and Brain Sciences are located on the Richardson campus and at the UTD/Callier Center for Communication Disorders on the campus of the UT Southwestern Medical Center at Dallas. Facilities on the Richardson campus include teaching and research laboratories for neuroscience, facilities for the study of child development, and laboratories supporting research in the cognitive sciences. Callier-Richardson also located on the Richardson campus provides speech-language pathology and audiology services to the community and serves as a research and training site for students.

The School of Behavioral and Brain Sciences supports three research centers: The Advanced Hearing Research Center; the Center for Brain Health; and the Center for Brain, Behavior, and Cognition. These centers provide research opportunities for doctoral students in cochlear implants, auditory neuroscience, brain plasticity, and neuroimaging.

Admission Requirements

The University's general admission requirements are discussed on page 13.

Admission to a doctoral program is based on a review of the applicant's GPA, GRE scores, letters of recommendation, and narrative description of research interests and career goals. The admissions committee weighs heavily the match between the applicant's research interests and the research areas available to students in the school. For information about faculty research interests, see our web pages at bbs.utdallas.edu. The GRE score is included in the evaluation of the applicant's record. In general, combined verbal and quantitative scores on the GRE of at least 1000 are advisable based on our experience with student success in the program and most scores are substantially higher. However, there is no minimum cutoff score nor does a score above 1000 assure admission to the program.

Many courses in the graduate programs in Audiology, Applied Cognition and Neuroscience, Communication Disorders, and Human Development and Early Childhood Disorders complement doctoral coursework and, upon a student's admission to the Ph.D. program, can be applied toward the degree. Students should consult with the program office to determine which graduate courses can be applied to the Ph.D.

Combining the M.S. and Ph.D. Programs

Students seeking clinical certification (CCC) in speech-language pathology in addition to the Ph.D. may combine their masters and doctoral program. An individualized plan of study allows students to earn the M.S. degree in Communication Disorders while meeting requirements for the Ph.D. degree. In addition, students may choose to combine Ph.D. study with master's work in Human Development and Early Childhood Disorders, Applied Cognition and Neuroscience, or with the clinical doctorate in Audiology.

Degree Requirements

The University's general degree requirements are discussed on page 18.

COGNITION AND NEUROSCIENCE (Ph.D.)

Doctoral Proseminar (6 SCH)
HCS 6302 Issues in Behavioral and Brain Sciences I
HCS 6303 Issues in Behavioral and Brain Sciences II
Research Methods (6 SCH minimum)
HCS 6312 Research Methods in Behavioral and Brain Sciences – Part I
HCS 6313 Research Methods in Behavioral and Brain Sciences – Part II
or
HCS 6351 Alternative Statistical Data Analysis
Cognition and Neuroscience Core Courses (6 SCH minimum). Students must take a minimum of one Cognition Core and one Neuroscience Core, choosing from those listed below.
1. Cognition
HCS 6330 Cognitive Science
HCS 6395 Cognitive Psychology
2. Neuroscience
HCS 6346 Systems Neuroscience
HCS 7344 Functional Neuroanatomy
Advanced Electives (9 SCH minimum). In addition to completing the 6 SCH core requirement, students will take a minimum of 9 SCH of advanced electives. Any HCS course may count as an advanced elective. This includes core courses (see above), though no course can be counted both as a core and an advanced elective for any single student. Advanced electives are selected by students with the concurrence of their research advisors based on the students' research foci. Depending on a student's background and the requirements of his or her dissertation research, additional advanced electives beyond the 9 SCH minimum will be necessary. Possible research foci and advanced elective courses are listed below.

Research Focus
Cellular Neuroscience
HCS 6340 Cellular Neuroscience
HCS 7347 Seminar in Synaptic Physiology
HCS 7348 Seminar in Cortical Connections
Cognitive Aging
HCS 7367 Aging and Cognition
HCS 7351 Aging and the Nervous System
HCS 6333 Memory
Speech/Language Processing
HCS 6367 Speech Perception
HCS 7367 Speech Perception Lab
HCS 7349 Text comprehension Seminar

COMMUNICATION SCIENCES AND DISORDERS (Ph.D.)

Doctoral Proseminar (6 SCH)
HCS 6302 Issues in Behavioral and Brain Sciences I
HCS 6303 Issues in Behavioral and Brain Sciences II
Research Methods (9 SCH minimum)
HCS 6312 Research Methods in Behavioral and Brain Sciences – Part I
HCS 6313 Research Methods in Behavioral and Brain Sciences – Part II
Approved Advanced Research Methods/Statistics course
Core (6 SCR minimum) Students must complete a minimum of 6 semester credit hours of approved COMD or AUD prefixed courses. Courses meeting this requirement will vary depending on the student's research interests. The requirement may be waived for students holding a graduate degree in the field of speech-language pathology or audiology. Students lacking an adequate foundation in communication sciences may be required to complete more than the 6 SCH minimum of Core coursework.

Communication Sciences and Disorders (3 SCH minimum) All students must complete a minimum of 3 SCH of doctoral coursework offered through the Ph.D. program in Communication Sciences and Disorders.
Supplemental Coursework (12 SCH minimum) All students must complete an additional minimum of 12 SCH's of doctoral level courses and seminars. Courses may be selected from doctoral level coursework offered through the Ph.D. programs in Communication Sciences and Disorders or, with advisor approval, from the doctoral coursework offered through the Ph.D. programs in Cognition and Neuroscience and Psychological Sciences.

PSYCHOLOGICAL SCIENCES (Ph.D.)

Doctoral Proseminar (6 SCH)
HCS 6302 Issues in Behavioral and Brain Sciences I
HCS 6303 Issues in Behavioral and Brain Sciences II
Research Methods (6 SCH minimum)
HCS 6312 Research Methods in Behavioral and Brain Sciences – Part I
HCS 6313 Research Methods in Behavioral and Brain Sciences – Part II
Psychological Science Core Courses (12 SCH minimum). Students will declare a major in Developmental Psychology, Cognition, or Social/Personality Psychology. Students must take four core courses from those listed below. Two of these courses must be selected from the major area, and the four courses must be selected from at least two of the four areas listed.
1. Developmental Psychology
HCS 6350 Social Development
HCS 6331 Cognitive Development
HCS 6368 Language Development
2. Cognition
HCS 6395 Cognitive Psychology
HCS 6330 Cognitive Science
HCS 6333 Memory
3. Social/Personality Psychology
HCS 6371 Social Psychology
HCS 6327 Personality
4. Neuroscience
HCS 6346 Systems Neuroscience
HCS 7344 Functional Neuroanatomy
Advanced Electives (12 SCH minimum). After completing the 12 SCH core requirement, students will take an additional 12 SCH of advanced electives. Any core course (see above) may count as an advanced elective (though it cannot count both as a core course and as an elective). One of these 3-hour elective courses must be an advanced research methods course. Students will declare a major in Developmental Psychology, Cognition, or Social/Personality Development and will take a minimum of four courses (cores and electives) in the major area. Students may enroll in other advanced electives from the other doctoral course offerings available in the School, including courses in language and communication. Additional advanced electives are available each semester.

INDIVIDUALIZED DEGREE PLANS

The option of creating an individualized degree plan is available to students whose interests cut across the three degree areas. One such plan offers a focus in Child Language Development and Disorders. This focus allows students to take advantage of unique interdisciplinary research opportunities in the School's demonstration programs for infants, toddlers, and preschool children. Individualized plans should be drafted in consultation with the student's research advisor and require the approval of the Graduate Studies Committee.

ADDITIONAL REQUIREMENTS

All students must complete the Qualifying Project/Qualifying Paper requirements of the Ph.D. degree sought. The successful defense of a written dissertation completes the requirements for the degree.

Course Descriptions

Proseminars

HCS 6302 Issues in Behavioral and Brain Sciences - Part I (3 semester hours) Doctoral proseminar on current theory and research in Cognition and Neuroscience, Communication Sciences and Disorders, and Psychological Sciences. Pass/Fail only. (Open only to HCS doctoral students) (3-0) Y

HCS 6303 Issues in Behavioral and Brain Sciences - Part II (3 semester hours) Continuation of the doctoral proseminar on current theory and research in Cognition and Neuroscience, Communication Sciences and Disorders, and Psychological Sciences. Pass/Fail only. (Open only to HCS doctoral students) (3-0) Y

Research Methods Courses

HCS 6312 (ACN 6312) Research Methods in Behavioral and Brain Sciences - Part I (3 semester hours) Applying, understanding, and interpreting various statistical techniques in behavioral science context. Participants have the opportunity to learn appropriate statistical details for basic descriptive and inferential statistics, the interrelationships among techniques, and computer skills required for data analyses. Students without the necessary background knowledge of basic statistics and experimental design will be required to take PSY 3392 before registering for HCS 6312. (3-0) Y

HCS 6313 (ACN 6313) Research Methods in Behavioral and Brain Sciences - Part II (3 semester hours) Topics in general linear modeling including regression analysis correlation, simple analysis of variance, factorial analysis of variance, analysis of covariance, between and within subject designs, and multiple regression. Prerequisite: HCS 6312 or consent of instructor. (3-0) Y

HCS 6314 Instrumentation (3 semester hours) Basic principles of electricity, signal processing, instrumentation, and laboratory safety. (3-0) R

HCS 6315 Grant Writing for Researchers (3 semester hours) Identifying funding sources appropriate to research needs, formulating a research plan, generating specific aims and a methodological design to address those aims, presentation of preliminary results to show the feasibility of the proposed work, and use of appropriate reference citations. Prerequisite: Permission of instructor. (3-0) Y

HCS 6351 (ACN 6351) Alternative Statistical Data Analysis (3 semester hours) Alternative statistical data analysis techniques that complement the classical general linear modeling approach. (3-0) Y

HCS 6390 Evaluation Research Methods in Behavioral and Brain Sciences (3 semester hours) A review of research methods used in evaluation research, with consideration given to public, private, and nonprofit programs. Issues to be addressed include research design, appropriate performance standards, measurement and selection of indicators, sampling, data collection, and data analysis. (3-0) Y

HCS 6399 Research Ethics and Scientific Integrity (3 semester hours) An interactive, intensive course designed to cover critical issues related to human subjects, animal welfare, research design, accountability of scientific actions and fraud. Course designed for individuals intending research careers in academia or industry. (3-0) Y

HCS 6V91 Evaluation Research (3-6 semester hours) Individual or group project in evaluation research performed for a public or private organization. Students must have a faculty sponsor who supervises the research project. Students normally enroll for two consecutive semesters. The first semester culminates in the completion of a formal evaluation research proposal; the second ends with a final research report and presentation based on the completed evaluation research. Students must also participate in a weekly seminar on topics in evaluation research, featuring faculty and student presentations, guest speakers, and group discussion. Permission of the Program Coordinator and a faculty sponsor are required. May be repeated for a total of six semester credit hours. (Same as POEC 6V91.) ([3-6]-0) Y

HCS 7310 Advanced Research Methods (3 semester hours) Advanced methods of inquiry and analysis unique to either Cognition and Neuroscience, Communication Sciences and Disorders, or Psychological Sciences. Prerequisite: HCS 6313. (May be repeated for credit.) (3-0) Y

HCS 7312 Applied Research Design (3 semester hours) Formal principles of research design, how to apply these principles to published work and original investigations. (3-0) R

HCS 7314 Research Methods in Behavioral and Brain Sciences—Part III (3 semester hours) Applying, understanding, and interpreting various advanced multivariate statistical techniques in brain and behavioral science contexts. Includes principle component analyses, simple and multiple correspondence analyses, partial least square regression, discriminant analyses, and structural equation modeling. (3-0) R

Cognition and Neuroscience

HCS 5314 (ACN 5314) Cognitive and Neural Modeling Lab (3 semester hours) Auto-associative, associative, competitive learning, recurrent, and back-propagation artificial neural network architectures in a "hands-on" microcomputer laboratory environment using special simulation software. Applications to perceptual, cognitive, computational, and neuroscience modeling problems. Prerequisites: Linear Algebra and Computer Programming Experience is recommended but not required. (3-0) T

HCS 6310 Fundamentals of Functional Brain Imaging (3 semester hours) This course covers topics such as principles of tracer techniques, neuroimaging instrumentation, safety issues, brain physiology (perfusion, metabolism, and receptor function), image processing and analysis, fundamentals of SPECT, PET and fMRI, and critical evaluation of the functional neuroimaging literature. (3-0) Y

HCS 6330 (ACN 6330) Cognitive Science (3 semester hours) Cognitive, computational, and neural processing approaches to understanding perception, memory, thought, language and emotion. (3-0) Y

HCS 6332 (ACN 6332) Perception (3 semester hours) Psychophysical, neurophysiological, and computational foundations of sensation and perception. Basic senses of vision, audition, chemoreception, and tactile processing, with emphasis on understanding the processes that take us from neurons to perception and action. (3-0) T

HCS 6333 (ACN 6333) Memory (3 semester hours) Research and theory on the acquisition, representation and retrieval of information by the mind/brain. Includes information processing and neuropsychological perspectives. (3-0) T

HCS 6334 (ACN 6334) Attention (3 semester hours) Theory and evidence on the study of attention especially in human vision and audition. Includes perceptual learning, information processing, and neuropsychological approaches. (3-0) T

HCS 6335 Seminar in Auditory Cortical Processing (3 semester hours) Basic principles of neural information processing with special emphasis on the central nervous system processes underlying hearing and speech perception. (3-0) T

HCS 6336 Principles of Developmental Neuroscience (3 semester hours) Molecular and cellular events underlying neuronal differentiation, axon guidance, synapse formation, neurotrophic factors, and neural death, with special emphasis on activity-dependent plasticity and its role in generating and maintaining the extraordinary precision of connections found in the nervous system. (3-0) T

HCS 6337 Seminar in Neural Plasticity and Behavior (3 semester hours) Critical readings from the interfaces between the behavioral neurosciences, biophysics, and biochemistry. Neural mechanisms of learning and memory and of plasticity compensating for peripheral or central nervous system damage are among the topics discussed. (3-0) T

HCS 6340 (ACN 6340) Cellular Neuroscience (3 semester hours) Basic neural biology and physiology and principles of synaptic transmission. (3-0) Y

HCS 6344 Electrophysiology (3 semester hours) Patch-clamp, sharp electrode and extracellular recording techniques are examined in detail, including multi- and single-unit recording, evoked and event-related potentials including recording techniques, and applications of these techniques. Prerequisite: HCS 6346 or consent of instructor. (3-0) T

HCS 6346 (ACN 6346) Systems Neuroscience (3 semester hours) Integrative systems level study of the nervous system. Aspects of neural mechanisms and circuitry underlying regulation of motor behaviors, sensory and perceptual processing, biological homeostasis, and higher cognitive functions. (3-0) Y

HCS 6347 (ACN 6347) Intelligent Systems Analysis (3 semester hours) Mathematical tools for investigating the asymptotic behavior of both deterministic and stochastic nonlinear dynamical systems for the purposes of building computational models in the fields of neuroscience, psychology, and artificial intelligence. Topics include: artificial neural network architectures, Lyapunov stability theory, nonlinear optimization theory, stochastic approximation theory, and the Gibbs Sampler. Prerequisites: HCS 6348 (or equivalent) or consent of instructor. (3-0) T

HCS 6348 (ACN 6348) Neural Net Mathematics (3 semester hours) Vector calculus and vector calculus-based probability theory with artificial neural network modeling applications. Intended to provide mathematics preparation for HCS 6347 and HCS 6349. Prerequisites: Either: (1) Linear algebra, multivariable calculus, STAT 5351, and HCS 5314, or (2) consent of instructor. (3-0) T

HCS 6349 (ACN 6349) Intelligent Systems Design (3 semester hours) Mathematical tools for the design and evaluation of artificially intelligent deterministic and stochastic nonlinear dynamical systems for the purposes of building computational models in the fields of neuroscience, psychology, and artificial intelligence. Topics include: (1) Markov Random Field probability representations, and (2) asymptotic mathematical statistical theory for: parameter estimation, model selection, and hypothesis testing. Prerequisites: HCS 6347 or consent of instructor. (3-0) T

HCS 6372 Pathophysiology of Disorders of the Nervous System (3 semester hours) The pathophysiology of disorders such as movement disorders and pain is discussed with emphasis on the role of neural plasticity in causing symptoms and signs. (3-0) Y

HCS 6373 (ACN 6373) Intraoperative Neurophysiological Monitoring I (3 semester hours) The anatomical and physiological basis for the use of electrophysiological techniques in intraoperative neurophysiologic monitoring and in diagnosis of disorders affecting the nervous system. (3-0) Y

HCS 6374 (ACN 6374) Intraoperative Neurophysiological Monitoring Part II (3 semester hours) The use of recordings of neuro-electric brain potentials and their interpretation for diagnostic purposes and for intraoperative monitoring. Prerequisite: HCS 6373 (ACN 6373) (3-0) Y

HCS 7315 Statistical Analysis of Brain Imaging Data (3 semester hours) Covers analysis of brain imaging data obtained from diverse techniques such as PET, SPECT, fMRI, or EEG. Includes "standard analyses" with packages such as SPM02 or AFNI as well as pattern analyses approaches (e.g., partial least squares regression, correspondence, discriminant, and principal component analyses). (3-0) R

HCS 7322 (ACN 7322) Computational Models of Language Understanding (3 semester hours) Probabilistic methods for natural language understanding. Use of the MATLAB computer language for instantiating specific knowledge-based computational theories of natural language understanding . Prerequisites: Computer Programming Experience is recommended but not required. (3-0) T

HCS 7329 Functional Brain Imaging Practica (3 semester hours) This course applies learned skills to short research projects in a small group format. Projects include: 1) acquisition of new data in SPECT, PET or fMRI in association with ongoing funded research sponsored by various faculty at UTSW or UTD; 2) mentored analysis of existing data sets from these sources; and 3) experimental design projects in which more advanced trainees will develop a full experimental protocol, including informed consent procedures, acquisition parameters and data analysis plans. All projects are reviewed in a biweekly group meeting to facilitate learning across groups. (3-0) Y

HCS 7330 Advanced Functional Brain Imaging (3 semester hours) This course explores more in-depth topics such as neuroimaging detection systems, clinical applications of functional neuroimaging, experimental design, statistical techniques in image analysis and reviews of pertinent literature using functional brain imaging to illuminate various cognitive and perceptual processes, such as language, memory, hearing and vision. (3-0) Y

HCS 7333 (ACN 7335)Computational Neuroscience (3 semester hours) Construction of biologically realistic simulations of neurons and small neural circuits using state-of-the-art simulation software. Students will construct simulations that shed light on the neural basis of higher functions such as visual contrast enhancement, perceptual oscillation, sensory localization, and motor pattern generation. (3-0) R

HCS 7343(ACN 7343) Neuropharmacology (3 semester hours) Biology of neurotransmission in the central nervous system. Includes ionotropic and metabotropic coupling of all known classes of receptors to both their cellular and systemic effects. Clinical efficacy, side effects, and other issues related to drug use and abuse are covered. Prerequisite: HCS 6340 or HCS 6346. (3-0) T

HCS 7344 (ACN 7344) Functional Human Neuroanatomy (3 semester hours) Function of each major brain system as related to the organization and synaptic connections of their principal nuclei. Function of each system related to the neurological disorders associated with disease or lesions at specific locations. (3-0) T

HCS 7345 (ACN 7345) Neuroanatomy Laboratory (3 semester hours) Laboratory experience with neural tracing techniques employed in neuroscience research. Prerequisite: HCS 7344 or consent of instructor. (3-0) T

HCS 7349 Text Comprehension Seminar (3 semester hours) Current readings in the field of text comprehension and memory. May be repeated for credit with instructor's permission. (3-0) R

HCS 7351 Aging and the Nervous System (3 semester hours) Critical evaluation of research and theory concerning the impact of aging on neuronal function. Cognitive dysfunctions, dementias, and underlying neuropathologies, as well as neurophysiological and neurochemical changes that accompany normal aging. (3-0) R

HCS 7372 Seminar in Cognition and Neuroscience (3 semester hours) Selected topics and current research in cognition and neuroscience. (May be repeated for credit.) (3-0) R

HCS 7378 (ACN 7378) Advanced Neurophysiology Methods (3 semester hours) Hands-on experience with deeply anesthetized and reduced in vitro brain slice or dissociated cell preparations widely used in neuroscientific research. Satisfies the Measurement and Evaluation (Master's) or advanced Methods (Doctoral) requirement. Prerequisite: HCS 6340 or HCS 6346 and consent of instructor. (3-0)R

Communication Sciences and Disorders

HCS 6367 Speech Perception (3 semester hours) Current topics and theories in speech perception. Topics include the acoustic correlates of speech sounds and the problem of invariance, the perception of speech under adverse conditions, the effects of hearing impairment, and models of speech perception. (3-0) T

HCS 6368 Language Development (3 semester hours) Advanced study of normal oral language development. Focus on research in child language and recent theories of language acquisition. Prerequisite: Consent of instructor. (3-0) Y

HCS 6369 Brain Mechanisms in Hearing (3 semester hours) Neuroanatomical and neurophysiological bases of stimulus processing in the auditory neuraxis. (3-0) R

HCS 6379 Neurological Basis of Language Development (3 semester hours) Study of the developing brain and how it relates to the acquisition and development of language throughout the lifespan. (3-0) R

HCS 6391 Seminar on Preliteracy Development (3 semester hours) Selected topics and current research in preliteracy development (May be repeated for credit). (3-0) R

HCS 6392 Seminar in Theories of Language Acquisition (3 semester hours) A survey and critical exploration of current theories of language acquisition and more general theories of cognitive development that have been applied to language development. (3-0) R

HCS 7339 Psycholinguistics (3 semester hours) Classic and current research in psycholinguistics. Includes concepts from linguistics, the biological bases of speech and language processing, and child language acquisition. Hands-on exercises include labs on speech perception, language acquisition, and language comprehension. (3-0) R

HCS 7352 Seminar in Language Impairments in Children (3 semester hours) Advanced study of language impairments in children emphasizing research issues related to these diverse clinical populations. Topics may include SLI, SCI, SELD, deafness, autistic spectrum disorders among others. May be repeated for credit. Prerequisites: COMD 6307 or HCS 6368 and COMD 7378 or consent of instructor. (3-0) T

HCS 7367 (ACN 7367) Speech Perception Laboratory (3 semester hours) Introduction to the field of speech processing by computer, with primary application to research techniques in the study of speech perception. (0-9) T

HCS 7368 Speech Production Development (3 semester hours) Foundations of speech production development including anatomic, physiologic, acoustic, and psycholinguistic bases. (3-0) R

HCS 7V71 Seminar in Communication Sciences and Disorders (1-6 semester hours) Selected topics and current research in communication sciences and Disorders. (May be repeated for credit.) ([1-6]-0) R

HCS 7379 Current Research in Autism (3 semester hours) Advanced seminar addressing current issues in the field of autism; topics vary and may include various theoretical approaches to autism, diagnosis and assessment of children with autism, and affective reciprocity in both typically developing children and children with autism. (May be repeated for credit with consent of the instructor.) (3-0) R

Psychological Sciences

HCS 6326 Infant Perception (3 semester hours) Research, theoretical issues, and experimental paradigms in infant perception, including topics such as face and speech perception. (3-0) R

HCS 6327 Personality (3 semester hours) Survey of cognitive, analytic, and learning theory approaches to study of personality. Emphasis on intensive exploration of selected concepts and related research (3-0) R

HCS 6331 (HDCD 5304) Cognitive Development (3 semester hours) Survey of cognitive development theories and research in a variety of domains including perception, memory, language, and problem solving. (3-0) Y

HCS 6350 Social Development (3 semester hours) Foundations of social and personality development. Includes survey of psychodynamic, social learning, behavior genetic, family systems, and social-cognitive approaches to the study of attachment, parenting, aggression, peer relationships, sex typing, and other contemporary issues. (3-0) Y

HCS 6352 Individual Factors in Human Development (3 semester hours) Contemporary theory and research in personality and social psychology. (3-0) R

HCS 6354 Social Cognition (3 semester hours) The influence of cognition as a determinant of social behavior with particular focus on social perception, attributions, and attitudes. (3-0) R

HCS 6356 (HDCD 5312) Atypical Development (3 semester hours) Disorders of development from conception to age three, emphasizing etiology symptoms, diagnosis and treatment. Impact of delays in the acquisition and integration of various developmental skills as they relate to specific disorders of sensory and motor skills, language and cognition, and personality and socialization. (3-0) Y

HCS 6358 Affective Development (3 semester hours) Theory and research on emotions and emotional development. Includes perspectives on the links between emotions, socialization and behavior, and marital and family processes and emotion regulation. (3-0) R

HCS 6375 Development of Social Cognition (3 semester hours) Combines methods from developmental, social, and cognitive psychology to examine how children and adults perceive and interpret information in their social worlds. Explores social cognition from infancy (e.g., imitation, joint attention) through childhood (e.g., perspective taking, theory of mind) and adulthood (e.g., social judgments, biases). R

HCS 6376 Social Psychology (3 semester hours) Overview of the social bases of behavior. Topics include social cognition and self justification, biases in judgment, attitudes and persuasion, conformity, compliance, and group dynamics, prejudice and stereotyping, interpersonal attraction and relationships, aggression and altruism, cultural diversity, and applications relevant to these aspects of the human experience. Special attention to research paradigms of interest to students developing their own empirical work. Y

HCS 6395 (ACN 6395) Cognitive Psychology (3 semester hours) Theory and research on perception, learning, thinking, psycholinguistics, and memory. (3-0) Y

HCS 7331 Relationships and Development (3 semester hours) Theory and research on relationship processes involved in development. Topics include parent-child and parent-adolescent relations, sibling relations, peer and friendship relations, romantic relationships, and marital/couple relations. Linkages among relationships are also emphasized. (3-0) R

HCS 7332 Adult Psychopathology (3 semester hours) Theory and research on the origins, classification, and treatment of psychological disorders of adulthood, with consideration of whether these disturbances exist on continua with normal behavior. Critical examination of diagnoses, with an emphasis on how scientific research can guide our understanding of etiology and treatment (3-0) R

HCS 7355 Seminar in Psychological Sciences (1-6 semester hours) Selected topics of current research in social or cognitive development. (May be repeated for credit.) ([1-6]-0) R

HCS 7374 Peer Relationships and Interpersonal Competence (3 semester hours) Theory and research on children's and adolescents' peer groups, friendships, and romantic relationships, as well as the social skills that are called for in these relationships. (3-0) R

HCS 7376 Child Psychopathology (3 semester hours) Major classes of childhood psychopathology manifested during infancy through adolescence. Normal personality development as a basis for identifying psychopathology. Issues of etiology, diagnosis, prognosis and social policy. (3-0) Y

Other Courses

HCS 7380 Practicum in Communication Sciences (3 semester hours) Supervised research or practice-based activities in applied contexts or evaluation and therapeutic management of communication disorders. Weekly conference may be required. Pass/Fail only. (May be repeated for credit) (3-0) S

HCS 7V98 Directed Individual Study in Behavioral and Brain Sciences (1-9 semester hours) Individualized program of study which may include reading, research, implementation of clinical strategies, and/or other designated activities. (May be repeated for credit) (0-3/0-27) S

HCS 8V50 Doctoral Readings and Research Seminar (1-6 semester hours) Seminar for advanced doctoral students on current issues and research in Behavioral and Brain Sciences. (May be repeated for credit) ([1-6]-0) S

HCS 8V80 Research in Behavioral and Brain Sciences (1-9 semester hours) Supervised research and readings. (May be repeated for credit.) (0-9/0-27) S

HCS 8V99 Dissertation (3-9 semester hours) (May be repeated for credit.) (0-9/0-27) S

Doctor of Audiology Program

http://bbs.utdallas.edu/

Faculty

Professors: Peter F. Assmann, George M. Gerken (emeritus), Susan W. Jerger, Aage R. Møller, Karen Prager, Ross J. Roeser, Robert D. Stillman, Linda Thibodeau, Emily Tobey

Associate Professors: Michael Kilgard, Lucien T. Thompson

Clinical Faculty: Carolyn Musket, Jackie Clark, Carol Cokely, Lee Wilson

Distinguished Scholar in Residence: James F. Jerger

Objectives

The Doctor of Audiology (Au.D.) degree offers broad-based professional preparation in audiology within an environment supporting an active program of clinical services and research. Students receive comprehensive exposure to clinical methods and procedures in communication disorders and to the scientific foundations from which clinical approaches are derived. Practical experience is available in a variety of clinical, educational, and medical settings.

Facilities

The principal site for the academic, clinical, and research activities of the Doctor of Audiology program is the U.T. Dallas Callier Center for Communication Disorders, which is adjacent to The University of Texas Southwestern Medical Center. Courses and practicum are also offered at U.T. Dallas Callier Richardson on the Main Campus of the University. The U.T. Dallas Callier Advanced Hearing Research Center provides specialized clinical and research facilities for the program. These facilities, and others throughout the Metroplex, offer the educational, clinical, research, and medical environments essential for an interdisciplinary program in audiology.

Admission Requirements

The University's general admission requirements are discussed on page 13.

Admission to the Doctor of Audiology Program is based on a review of the applicant's GPA, GRE scores, letters of recommendation, and narrative description of research interests and career goals. The GRE score is included in the evaluation of the applicant's record. In general, students admitted to the program have a combined Verbal and Quantitative score on the GRE of at least 1100. However, there is no minimum cut-off score for admission nor does a score of at least 1000 assure admission to the program.

Degree Requirements

The University's general degree requirements are discussed on page 18.

The Doctor of Audiology (Au.D.) degree requires 121 semester hours. Students completing the Au.D. degree meet the academic and clinical practicum requirements for the Certificate of Clinical Competence offered by the American Speech-Language-Hearing Association, and Texas State licensure requirements for audiology. Specific degree requirements follow.

Required Courses (121 hours)
Foundation (25 Semester Hours)
AUD 6V20 Laboratory Procedures in Audiology and Hearing Science (taken 4 times)
AUD 6303 Hearing Science
AUD 6305 Anatomy and Physiology of Audition
AUD 6306 Speech Science
AUD 6310 Advanced Clinical Audiology
AUD 6311 Diagnostic Audiology
AUD 6316 Audiologic Rehabilitation for Adults
AUD 6318 Pediatric Audiology

Doctoral Core (24 Semester Hours)
AUD 6348 Counseling for Communication Disorders Professionals
AUD 6352 Medical Audiology
AUD 7321 Theories of Amplification
AUD 7324 Seminar in Cochlear Implants and Technology for Persons with Hearing Impairments
AUD 7326 Aural Habilitation of Children with Hearing Impairments
AUD 7327 Evaluation and Fitting/Amplification Systems
AUD 7353 Clinical Electrophysiology
HCS 6312 Research Methods in Human Development and Communication Sciences – Part I

Advanced (24 Semester Hours)
AUD 7310 Professional Issues in Audiology
AUD 7328 Hearing Conservation

AUD 7351 Physiologic Assessment of Vestibular and Auditory System
AUD 7371 Doctoral Seminar in Audiology (taken 3 times)
AUD 7340 Auditory Processing Disorders
HCS 6314 Instrumentation

Experiential (48 Semester Hours)
HCS 7380 Practicum in Human Development and Communication Sciences (24 semester hours)
AUD 8V80 Individual Research in Audiology (6 semester hours)
AUD 8V97 Doctoral Internship in Audiology (18 semester hours)

Out-of-Field Students

Students entering the program who lack undergraduate preparation in communication disorders are required to take a specified 6-12 semester hour sequence of preparatory courses. These courses may be taken at The University of Texas at Dallas and may be enrolled in concurrently with some graduate courses.

Students are advised that participation in off-campus practicum and internship requires a criminal background check. Students excluded from off-campus sites for any reason may be unable to complete all degree requirements. Students are responsible for the cost of criminal background checks.

Course Descriptions

AUD 6V20 Laboratory Procedures in Audiology and Hearing Science (1-9 semester hours) Application in structured laboratories of principles taught in diagnostic audiology, rehabilitation audiology, amplification, cochlear implant and electrophysiology courses. To be taken with AUD 6310, AUD 6311, AUD 6316, AUD 7321, AUD 7326, AUD 7327 and AUD 7353. (May be repeated for credit.) (0-[1-9])Y

AUD 6303 Hearing Science (3 semester hours) Basic acoustics and psychoacoustics. (3-0)Y

AUD 6305 Anatomy and Physiology of Audition (3 semester hours) Structure and function of the auditory system including external, middle, and inner ear, and central auditory mechanisms. (3-0)Y

AUD 6306 Speech Science (3 semester hours) The physical properties of speech and the perceptual, cognitive and neural processes that intervene between the production and perception of speech in everyday speech communication. (3-0)Y

AUD 6310 Advanced Clinical Audiology (3 semester hours) Instrumentation and calibration standards for audiology practice. The development and application of standard diagnostic audiological procedures. Administration and interpretation of standard audiometric tests. (3-0) Y

AUD 6311 Diagnostic Audiology (3 semester hours) The development and application of advanced diagnostic procedures for audiological diagnosis including behavioral and electrophysiological measures (ABR and OAE). Administration and interpretation of diagnostic audiological tests. (3-0)Y

AUD 6316 Audiologic Rehabilitation for Adults (3 semester hours) Evaluation and remediation of impairment, disability and handicap associated with hearing loss. Emphasis on hearing aid orientation and benefit, assistive technology, coping skills, communication strategies, speech reading and advocacy for older adults with hearing loss. (3-0)Y

AUD 6318 Pediatric Audiology (3 semester hours) Etiological, medical and genetic considerations relevant to exceptional populations. Emphasis on current diagnostic options with infants and young children, including those having mental retardation or multiple disabilities. (3-0)Y

AUD 6348 (COMD 6348) Counseling for Communication Disorders Professionals (3 semester hours) Psychological aspects of communication disorders in the context of the family system. Basic counseling and problem-solving skills to use as an adjunct to roles as communication disorders professionals. Emphasis on helping students to gain comfort and skill in coping with their clients' emotions and giving their clients constructive feedback. (3-0)Y

AUD 6352 Medical Audiology (3 semester hours) Etiology and pathology of auditory/vestibular disorders and diagnostic and treatment procedures. (3-0)Y

AUD 7310 Professional Issues in Audiology (3 semester hours). Ethics and professional issues in various practice settings, including multicultural considerations, licensure, certification, outcome measures, liability, malpractice, and practice management. (3-0)Y

AUD 7351 Physiologic Assessment of Vestibular and Auditory Systems (3 semester hours) Anatomy, physiology and pathophysiology of the vestibular, oculomotor and related systems used for maintaining equilibrium and balance. Procedures used for diagnostic assessment of the vestibular system and medical and non-medical treatments for vestibular disorders. (2-0) Y

AUD 7321 Theories of Amplification (3 semester hours) Principles underlying soundfield acoustics and calibration, earmold acoustics, speech perception in hearing impaired persons, and fitting methods. (3-0)Y

AUD 7324 (COMD 7324) Seminar in Cochlear Implants and Technology for Persons with Hearing Impairments (3 semester hours) Prosthetic alternatives available for individuals with profound hearing impairments. Topics include speech perception in children and adults, signal processing, aural rehabilitation techniques, prosthetic devices such as cochlear implants and techniques for using such devices. (3-0)Y

AUD 7326 Aural Habilitation of Children with Hearing Impairments (3 semester hours) Issues in selection and fitting of amplification and FM systems for children, rationale and methods of auditory training, optimizing the auditory environment, communication options, and family-centered intervention. (3-0)Y

AUD 7327 Evaluation and Fitting of Amplification Systems (3 semester hours) Advanced study of analog and digital technology in amplification systems including: programmable hearing aids, compression characteristics, noise reduction, and speech enhancement strategies. (3-0)Y

AUD 7328 Hearing Conservation (3 semester hours) Identification and prevention of hearing loss in children and adults through screening programs. Includes school, community, and industrial-based hearing conservation programs, noise measurement techniques, and hearing protection. (3-0)Y

AUD 7340 Auditory Processing Disorders (3 semester hours) Auditory processing disorders with respect to underlying etiologies and behavioral and electrophysiologic procedures for diagnosis and therapeutic management.(3-0)Y

AUD 7353 Clinical Electrophysiology (3 semester hours) Evoked and event-related potentials including recording techniques, neurophysiological mechanisms, and applications to clinical populations. (3-0)Y

AUD 7371 Doctoral Seminar in Audiology (3 semester hours) Selected topics and current research in audiology and hearing science. (May be repeated for credit.) (3-0)Y

AUD 7V80 Doctoral Practicum in Audiology (1-9 semester hours) Supervised doctoral level experience in assessment and habilitation/rehabilitation of hearing impairment. (May be repeated for credit.) ([1-9]-0) S

AUD 8V80 Individual Research in Audiology (1-9 semester hours) Independent research project to fulfill the Doctor of Audiology research requirement. (May be repeated for credit.) ([1-9]-0) S

AUD 7V82 Special Topics in Hearing Science and Audiology (1-9 semester hours) Selected topics and current research in Hearing Science and Audiology. Topics will vary from semester to semester. (May be repeated for credit.) ([1-9-0]) R

AUD 8V97 Doctoral Internship in Audiology (1-9 semester hours) Intensive, full-time, clinical audiology practicum in a work setting that provides exposure to a diverse clinical population and a wide breadth of audiologic services. Completed during the fourth year of the Au.D. Program. (May be repeated for credit.)([1-9]-0) S

Certificate in Evaluation Research

A graduate-level certificate program in Evaluation Research is offered jointly by the Schools of Social Sciences and Behavioral and Brain Sciences. Students who complete this program will have an opportunity to gain competencies in the design and implementation of program evaluations in fields such as education, health care, human services, criminal justice, and economic development. The Certificate in Evaluation Research program may be incorporated into graduate degree programs in the Schools of Social Sciences or Behavioral and Brain Sciences, or may be taken on its own by nondegree seeking students. Students in the Evaluation Research certificate program are normally expected to have completed undergraduate courses in social statistics and research design; students lacking appropriate preparation may be asked to take needed courses prior to admission to the program.

In order to receive the certificate, students must successfully complete four required courses and one guided elective, complete an evaluation research project including a final report, and participate in a weekly evaluation research seminar. The courses in the School of Social Sciences leading to the Certificate in Evaluation Research are POEC 5313 Descriptive and Inferential Statistics for the Social Sciences, POEC 6352 Evaluation Research Methods in the Social Sciences, POEC 6V91 Evaluation Research (six credit hours), and an additional course to be chosen from a list of guided electives available from the Social Sciences graduate advising office, for a total of 15 semester credit hours. With permission of the Evaluation Research program coordinator, students may substitute appropriate courses from the School of Behavioral and Brain Sciences or prior coursework taken at other institutions. Students interested in applying for admission to the Certificate in Evaluation Research program should consult the graduate advising office in the School of Social Sciences or the School of Behavioral and Brain Sciences.