

Astronomy and Astrophysics–AST

870 Astronomical Instrumentation and Data Analysis
Fall of odd years. 3(3-0) P:NM: (AST 801)
Theory and techniques of astronomical data acquisition and analysis.

899 Master's Thesis Research
Fall, Spring, Summer. 1 to 6 credits. A student may earn a maximum of 24 credits in all enrollments for this course. R: Open only to graduate students in Astronomy and Astrophysics.
MS Thesis Research

999 Doctoral Dissertation Research
Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to doctoral students in Astronomy and Astrophysics.
Doctoral dissertation research.

AUDIOLOGY AND SPEECH SCIENCES ASC

Department of Audiology and Speech Sciences College of Communication Arts and Sciences

113 Oral Communication Principles and Skills
Fall, Spring, Summer. 3(2-2)
Study, development and enhancement of oral communication skills including speech, voice, language and listening.

203 Introduction to Communication Sciences and Disorders
Fall, Spring. 3(3-0) Not open to students with credit in ASC 403.
Survey of research and practice regarding speech, hearing and language disorders in children and adults.

214 Anatomy and Physiology of the Speech and Hearing Mechanism
Fall. 4(3-2) P:M: (ASC 203 or concurrently)
Structural and functional analyses of the central and peripheral auditory mechanisms, and of the respiratory, phonatory, and articulatory mechanisms for speech.

232 Descriptive Phonetics
Fall. 2(1-2)
Principles of speech production. Transcription of speech using the International Phonetic Alphabet.

255 Speech and Hearing Sciences
Spring. 5(4-2) P:M: (ASC 214 and ASC 232 or concurrently) P:NM: One ISP course and completion of the University Mathematics requirement.
Application of the scientific method to the studies of audition, speech perception and speech production.

333 Oral Language Development
Fall, Spring. 3(3-0) P:M: (PSY 101) and (LIN 401 or ENG 302 or LIN 200) R: Not open to freshmen.
Development of receptive and expressive aspects of child language.

344 Evaluation Procedures in Audiology
Fall. 4(3-2) P:M: (ASC 255) and completion of Tier I writing requirement. R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences.

Classification of hearing disorders. Behavioral and electrophysiological measurement of hearing, including subjective and objective testing procedures.

364 Evaluation Procedures in Speech-Language Pathology
Fall. 4(3-2) P:M: (ASC 255 and ASC 333) and completion of Tier I writing requirement. R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences.

Evaluation procedures in speech-language pathology, test procedures, evaluation of results, and report writing.

394 Guidelines for Clinical Practice
Fall, Spring, Summer. 2(2-0) P:M: (ASC 344 and ASC 364) R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences.

Policies and practices operative in speech and hearing clinics. Interviewing techniques. Behavioral observation and data collection. Behavior management. Counseling. Session plan and report writing.

433 Language Dialect Differences in Applied Contexts
Spring. 3(3-0) P:M: (ASC 364)

Regional, ethnic, and cultural characteristics of American English. Comparison of speech-language differences and disorders.

443 Aural Rehabilitation
Spring. 3(3-0) P:M: (ASC 344) R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences.

Fundamental aspects of auditory rehabilitation, including individual and group amplification systems, auditory training, speechreading, and counseling with children and adults.

463 Intervention Procedures in Speech-Language Pathology
Spring. 3(3-0) P:M: (ASC 364) R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences.

Intervention procedures for individuals with developmental and acquired communication disorders.

473 Phonological Disorders in Children
Spring. 3(3-0) P:M: (ASC 463 or concurrently)

Phonological theory, speech perception and production, nature of normal/abnormal phonological development. Preparing assessment and treatment plans, applying treatment principles to different populations and cultural groups. Practice with narrow phonetic transcription of speech and phonological process analysis.

483 School-Based Communication Disorders Programs
Spring. 3(3-0) P:M: (ASC 463 or concurrently) and (ASC 394 or concurrently) R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences.

Administrative and regulatory aspects of school-based programs for persons with communication disorders.

490 Independent Study
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Approval of department.

Individualized student activities in human communication sciences and disorders.

494 Clinical Practicum in Communication Disorders
Fall, Spring, Summer. 2 credits. A student may earn a maximum of 4 credits in all enrollments for this course. P:M: (394 and 463) P:NM: A minimum of 25 hours of approved clinical observation. R: Open only to juniors or seniors in the Department of Audiology and Speech Sciences. Approval of department.

Supervised clinical experiences, working with individuals who have speech, language and/or hearing disorders.

803 Research Methods in Communication Sciences and Disorders
Fall. 3(3-0) R: Open only to graduate students in Audiology and Speech Sciences.

Hypothesis generation, experimental design, data collection, data analysis and presentation.

813 Neuroanatomy and Neurophysiology of Speech, Language, and Hearing
Fall. 3(3-0) R: Open only to graduate students in Audiology and Speech Sciences.

Structural and functional descriptions of the nervous system as it relates to communication sciences and disorders.

823A Acquired Language Disorders
Spring. 3(3-0) P:NM: (ASC 813 or concurrently) R: Open only to graduate students in Audiology and Speech Sciences.

Neuropathology, symptomatology, and speech-language rehabilitation of individuals with aphasia and related disorders.

823B Motor Speech Disorders
Fall. 3(3-0) P:NM: (ASC 813 or concurrently) R: Open only to graduate students in Audiology and Speech Sciences.

Neuropathology, symptomatology, and speech-language habilitation and rehabilitation of individuals with motor speech disorders.

823C Voice Disorders
Summer. 3(3-0) R: Open only to graduate students in Audiology and Speech Sciences.

Etiology, symptomatology, diagnosis, and treatment of voice disorders in children and adults.

823D Fluency Disorders
Fall. 3(3-0) R: Open only to graduate students in Audiology and Speech Sciences.

History, theories, symptomatology, diagnosis, and treatment of fluency disorders in children and adults.

823E Assessment of Childhood Language Disorders
Fall. 3(2-2) R: Open only to graduate students in the Department of Audiology and Speech Sciences.

Evaluation of language disorders of preschool, school-aged, and adolescent populations.

- 823F Language Intervention: Early Stages**
 Spring. 3(3-0) P:NM: (ASC 823E) or approval of department. R: Open only to graduate students in Audiology and Speech Sciences.
 Principles of intervention in language disorders for children functioning at or below preschool levels, regardless of chronological age.
- 823G Language Intervention: Later Stages**
 Summer. 3(3-0) P:NM: (ASC 823E) or approval of department. R: Open only to graduate students in Audiology and Speech Sciences.
 Principles of intervention in language disorders for school-age children and adolescents functioning above preschool levels.
- 823I Cognitive-Communicative Disorders**
 Spring. 3(3-0) P:M: (ASC 813 and ASC 823A and ASC 823B)
 Neurophysiological, speech-language, cognitive, neuropsychological, and social/emotional rehabilitation associated with traumatic brain injury, dementia, and right hemisphere neurological disorders.
- 823J Medical Aspects of Speech-Language Pathology**
 Fall. 3(2-2) P:M: (ASC 813 and ASC 823C) C: ASC 823B concurrently.
 Introduction to assessment, intervention, and management of persons with laryngectomy, tracheostomy, ventilator-dependence, and cleft lip and palate. Intensive study of the clinical procedures and instrumentation employed by speech-language pathologists who practice in medical settings.
- 823K Assessment and Treatment of Dysphagia**
 Summer. 3(3-0) P:M: (ASC 813) RB: (ASC 823A and ASC 823C)
 Introduction to assessment, intervention, and management of persons with swallowing disorders.
- 823L Counseling in Communication Disorders**
 Summer. 3(3-0) P:M: (ASC 364 or ASC 344)
 Overview of counseling issues related to communication disorders.
- 823X Augmentative Communication**
 Fall. 3(3-0) R: Open only to graduate students in Audiology and Speech Sciences.
 History and philosophy of augmentative communication. Assessment, system selection, and intervention considerations for aided and unaided systems. Topics include synthesized voice output and micro-processor-based systems.
- 833 Auditory Psychophysics**
 Spring. 3(3-0) P:NM: (ASC 803 or concurrently) R: Open only to graduate students in Audiology and Speech Sciences.
 Psychophysical theory and methods as applied to the study of hearing phenomena.
- 843A Diagnostic Audiology I**
 Fall. 3(3-0) RB: (ASC 344 and ASC 443) R: Open only to graduate students in Audiology and Speech Sciences.
 Behavioral audiologic assessment of the peripheral and central auditory system.
- 843B Diagnostic Audiology II**
 Spring. 3(3-0) P:M: (ASC 843A) RB: (ASC 843A)
 Electrophysiologic audiologic assessment of the peripheral and central auditory system.
- 843C Hearing Amplification I**
 Fall. 3(3-0)
 Historical and contemporary overview of personal amplification for individuals with hearing impairment. Emphasis on theoretical and clinical strategies for evaluating and fitting contemporary hearing aids.
- 843E Pediatric Audiology**
 Summer. 3(3-0) P:M: (ASC 843A and ASC 843B)
 Audiologic diagnostic procedures for the pediatric population. Includes the impact of disabilities other than hearing loss.
- 843F Advanced Rehabilitative Audiology**
 Fall. 3(2-2) P:M: (ASC 443) RB: (ASC 894A or ASC 894B) R: Open only to graduate students in Audiology and Speech Sciences.
 Impact of hearing impairment on communication processes. History of and current practices in intervention for children and adults who have hearing impairment.
- 843G Medical Aspects of Audiology**
 Fall. 3(3-0) R: Open only to graduate students in the Department of Audiology and Speech Sciences.
 Nature and bases of hearing impairment, and management principles from a medical perspective.
- 843I Hearing Amplification II**
 Spring. 3(3-0)
 Advanced theoretical and clinical strategies for evaluating and fitting contemporary hearing aids. Assistive listening devices, classroom amplification, hearing aid dispensing, and contemporary clinical and research issues in amplification.
- 843J Manual Communication for Clinical Settings**
 Summer. 3(3-0) P:M: (ASC 344)
 Introduction to the use of manually coded English sign systems and Pidgin Sign English in diagnostic and treatment sessions.
- 890 Independent Study**
 Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Open only to M.A. students in Audiology and Speech Sciences. Approval of department.
 Individualized study under faculty direction.
- 894A Clinical Practicum in Speech-Language Pathology**
 Fall, Spring, Summer. 1 credit. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Audiology and Speech Sciences. Approval of department.
 Supervised clinical experience in the management of clients with speech-language disorders.
- 894B Clinical Practicum in Audiology**
 Fall, Spring, Summer. 1 credit. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Audiology and Speech Sciences. Approval of department.
 Supervised clinical experience in the management of clients with hearing disorders.
- 899 Master's Thesis Research**
 Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 6 credits in all enrollments for this course. R: Open only to graduate students in Audiology and Speech Sciences. Approval of department.
 Master's thesis research.
- 914A Speech Production and Perception I**
 Fall of even years. 4(3-2) P:NM: (ASC 803 or concurrently) R: Open only to graduate students in Audiology and Speech Sciences.
 Classroom and laboratory study of issues regarding speech production and perception.
- 914B Speech Production and Perception II**
 Spring of odd years. 4(3-2) P:NM: (ASC 914A) R: Open only to graduate students in Audiology and Speech Sciences.
 Further classroom and laboratory study of issues regarding speech production and perception.
- 990 Independent Study**
 Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 16 credits in all enrollments for this course. R: Open only to Ph.D. students. Approval of department.
 Individualized study under faculty direction.
- 991 Special Topics in Communication Sciences and Disorders**
 Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to graduate students in Audiology and Speech Sciences.
 Topics vary.
- 992 Seminar in Communication Sciences and Disorders**
 Fall, Spring, Summer. 3(3-0) A student may earn a maximum of 12 credits in all enrollments for this course. R: Open only to graduate students in Audiology and Speech Sciences.
 Topics vary.
- 994 Research Practicum in Communication Sciences and Disorders**
 Fall, Spring, Summer. 1 credit. A student may earn a maximum of 12 credits in all enrollments for this course. P:NM: (ASC 803 or concurrently) R: Approval of department.
 Individual research under faculty supervision.
- 999 Doctoral Dissertation Research**
 Fall, Spring, Summer. 1 to 24 credits. A student may earn a maximum of 99 credits in all enrollments for this course. R: Open only to Ph.D. students in Audiology and Speech Sciences. Approval of department.
 Doctoral dissertation research.