

**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: (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: (ASC 214 and ASC 232 or concurrently) 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: (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: (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: (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: (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.
- 403. Communication Sciences and Disorders**  
*Fall. 3(3-0) R: Not open to freshmen or sophomores. Not open to students in the Department of Audiology and Speech Sciences. Not open to students with credit in ASC 203.*  
Research and practice regarding communication disorders and the professions of speech-language pathology and audiology.
- 433. Language Dialect Differences in Applied Contexts**  
*Spring. 3(3-0) P: (PSY 101) and (LIN 200 or LIN 401 or ENG 302) R: Not open to freshmen or sophomores.*  
Regional, ethnic, and cultural characteristics of American English. Comparison of speech-language differences and disorders.
- 443. Aural Rehabilitation**  
*Spring. 3(3-0) P: (ASC 344) 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: (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.
- 483. School-Based Communication Disorders Programs**  
*Spring. 3(3-0) P: (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: (ASC 394 and ASC 463) 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: 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: 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(3-0) R: Open only to graduate students in 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: 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: 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.

## Descriptions—Audiology and Speech Sciences of Courses

**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: 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. Hearing Assessment**  
Fall. 3(3-0) R: Open only to graduate students in Audiology and Speech Sciences.

Clinical evaluation of hearing. Pure tone and speech audiometry. Immittance testing.

**843B. Differential Diagnostic Audiology**  
Spring. 3(3-0) P: ASC 843A. R: Open only to graduate students in Audiology and Speech Sciences.

Tests of peripheral and central auditory function for differential diagnosis of hearing impairment.

**843C. Hearing Amplification and Rehabilitation**

Spring. 3(3-0) P: ASC 843A. R: Open only to graduate students in Audiology and Speech Sciences.

Clinical management of the hearing impaired. Amplification and other forms of aural rehabilitation.

**843D. Electrophysiologic Assessment**  
Fall. 3(3-0) P: ASC 813 or concurrently. R: Open only to graduate students in Audiology and Speech Sciences.

Theory and methods of electrophysiologic testing of the auditory and vestibular systems.

**843E. Special Populations in Audiology**  
Summer. 3(3-0) P: ASC 843C. R: Open only to graduate students in Audiology and Speech Sciences.

Audiologic considerations and evaluative procedures for infant, pediatric, mentally-impaired, multiply-handicapped, and geriatric populations.

**843F. Hearing Conservation**  
Fall. 3(3-0) P: ASC 833, ASC 843A, or approval of department. R: Open only to graduate students in Audiology and Speech Sciences.

Hearing conservation programs in occupational, educational, and community settings. The role of the audiologist.

**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.

**914A. Speech Production and Perception I**

Fall of even years. 4(3-2) P: 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: 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: 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.

## BIOCHEMISTRY BCH

### Department of Biochemistry College of Human Medicine College of Natural Science College of Osteopathic Medicine

**100. Current Issues in Biochemistry**  
Spring. 1(1-0) R: Open only to freshmen or sophomores. Not open to students with credit in BCH 101.

Contemporary biochemistry: its impact on environmental, medical, and social sciences.

**101. Frontiers in Biochemistry**  
Fall. 1(1-0) R: Open only to freshmen or sophomores. Not open to students with credit in BCH 100.

Description of topics in biochemistry research.

**200. Introduction to Biochemistry**  
Fall. 4(4-0) P: (CEM 143) Not open to students with credit in BCH 401 or BCH 461.

Basic structures of major classes of biologically important molecules and metabolic activities of major importance in living organisms.

**401. Basic Biochemistry**  
Fall, Spring. 4(4-0) P: (CEM 252 or CEM 352) R: Not open to students in the Biochemistry or in the Biochemistry/Biotechnology major. Not open to students with credit in BCH 200 or BCH 461.

Structure and function of major biomolecules, metabolism, and regulation. Examples emphasize the mammalian organism.

**461. Biochemistry I**  
Fall. 3(4-0) P: (CEM 252 or CEM 352) and (BS 110) and (MTH 124 or MTH 132 or MTH 152H or LBS 118) and (BS 111L or LBS 145 or LBS 158H or LBS 159H) Not open to students with credit in BCH 200 or BCH 401.

Protein structure and function, enzymology, bioenergetics, and intermediary metabolism.

**462. Biochemistry II**  
Spring. 3(4-0) P: (BCH 461)  
Continuation of BCH 461 with emphasis on metabolic regulation and nucleic acid structure, replication and protein synthesis.

**471. Biochemistry Laboratory (W)**  
Spring. 3(0-9) P: (BCH 401 or BCH 461) and (BS 110 and CEM 262 and CEM 356 and CSE 101) and (MTH 124 or MTH 132 or MTH 152H or LBS 118) and (BS 111L or LBS 145 or LBS 158H or LBS 159H) and completion of Tier I writing requirement.

Biochemical methods and principles used in the study of enzymes (proteins), carbohydrates, lipids, and cell organelles.

**472. Biochemistry Laboratory**  
Fall. 3(0-9) P: (BCH 462) and (CEM 262) R: Open only to Biochemistry or Biochemistry/Biotechnology majors or approval of department.

Methods of molecular biology and the underlying principles on which these methods are based.

**490. Biochemistry Research**  
Fall, Spring, Summer. 1 to 4 credits. A student may earn a maximum of 8 credits in all enrollments for this course. R: Total credits in BCH 490 and BCH 499 may not exceed 8. Approval of department.

Participation in laboratory or library research projects.