AUDIOLOGY AND SPEECH SCIENCES

Audiology and Speech Sciences — Descriptions of Courses

College of Communication Arts and Sciences

108. Voice and Articulation
Fall, Winter, Spring, Summer. 3(4-0)
The study and development of the skills of voice and articulation.

201. Introduction to Communication Disorders
Fall, Winter, Spring. 3(3-0)
Speech, hearing, and language disorders in adults and children.

222. Oral Language Development
Fall, Winter, Spring, Summer. 3(3-0)
Emergent development of receptive and expressive aspects of oral language of the child.

227. Physics for Audiology and Speech Sciences
Fall, Spring. 4(4-0) MTH 108. Not open to students with credit in PHY 227. Interdepartmental with and administered by Physics. Introductory physics for Audiology and Speech Sciences majors: kinematics, Newton's Law, conservation of energy and momentum, waves and vibrations, sound propagation, resonance, speech production.

274. Structures and Functions of Speech and Hearing Mechanisms
Fall, Winter. 5(4-2) ASC 108 or approval of department.
Peripheral and central auditory mechanisms and the respiratory, phonatory and articulatory mechanisms for speech.

276. Descriptive Phonetics
Winter, Spring. 3(3-0) ASC 274 or approval of department.
Detailed description of the principles that underlie the production of speech sounds.

277. Speech Science
Fall, Spring. 3(3-0) ASC 274, ASC 276.
Scientific bases of voice communication with special reference to the acoustic aspect of production.

373. Clinical Procedures in Speech Pathology and Audiology
Winter, Spring. 4(4-0) 2.00 grade-point average in ASC 201 and ASC 277 or approval of department.
Principles underlie the clinical interview and client relationships essential to diagnosis and therapy. Procedures in obtaining, recording, and evaluating test results and therapeutic methods.

444. Oral Language of Urban Areas
Winter, Summer. 3(3-0)
Concentration in the characteristics of language and human communication as these relate to studies and practices of those involved in urban affairs.

445. Communication Disorders: Social and Emotional Components
Spring. 3(3-0) Juniors.
Analysis and management of the social and emotional components of speech, language, and hearing problems.

454. Introduction to Audiology
Fall, Spring. 5(4-2) ASC 278, ASC 277.
Fundamental aspects of normal hearing; hearing disorders, hearing tests.

460. Aural Rehabilitation
Winter, Summer. 5(5-0) ASC 454 or approval of instructor.
Fundamental aspects of hearing aids, auditory training, and speechreading for the hearing-impaired person.

470. Communication Disorders
Spring, Summer. 3(3-0) Juniors. Not open to Audiology and Speech Sciences majors.
An overview of communication disorders, the professions of speech and language pathology and audiology and their relationships to allied professions.

474. Clinical Practicum in Speech and Language Pathology
Fall, Winter, Spring, Summer. 5(4-2) ASC 474 or approval of department.
Test procedures and analysis; supervised clinical experience in language and speech evaluations and report writing.

477. Methods in Public School Speech and Hearing Therapy
Fall, Winter. 4(3-2) ASC 201, ASC 277. Must be taken prior to term of student teaching.
Administration and organization, procedures and materials in public school speech and hearing therapy.

480. Basic Laboratory in Experimental Audiology
Fall, Spring. 3(1-4) MTH 108, PHY 227, ASC 454. Juniors.
Contemporary experimental procedures in basic audiological research. Projects include systematic exercises in equipment use, calibration, psychophysical methods, and data analysis.

499. Independent Study
Fall, Winter, Spring, Summer. 1 to 6 credits. May enroll for a maximum of 12 credits. Approval of department.

501. Phonological Disorders
Winter. 4(4-0) Approval of department.
Advanced study of normal aspects and correlates of phonological development: traditional and contemporary intervention issues, and issues related to research in phonological disorders.

533. Specialized Clinical Audiology
A. Differential Audiometry
Fall. 4(3-2)
Pure tone audiometric tests as an aid to the otologist in evaluating the pathology of hearing loss: including the development of norms. Consideration of nonorganic loss.
B. Speech Audiology
Fall. 4(3-2)
Evaluation of speech and speech-like signals: detection, discrimination and recognition.

C. Industrial Audiology
Spring. 4(4-0)
Evaluation of the role of the audiologist in industry emphasizing identification procedures, damage-risk criteria, measurement and control of noise, conservation procedures, and medicolegal problems.

D. Advanced Audiological Evaluation
Winter. 4(4-0)
Theory, administration and evaluation of selected tests of the peripheral and central auditory system.

E. Pediatric Audiology
Fall. 4(4-0)
Evaluative procedures including play audiometry, language assessment, and case studies as aids to the differential diagnosis of auditory disorders in children; rehabilitative procedures for the acoustically handicapped child.

F. Geriatric Audiology
Summer. 4(4-0) ASC 460 or approval of department.
Causes and descriptions of hearing loss associated with aging; audiologic evaluation and rehabilitation of older people with emphasis on amplification needs.

G. Auditory Habilitation of the Hearing Impaired
Spring. 4(4-0) ASC 460; ASC 533B or approval of department.
Communication skills development, early identification, differential diagnosis, personal and classroom amplification systems, methodological controversies and public laws affecting education of the hearing impaired.

H. Electrophysiologic Methods of Auditory Assessment
Spring. 4(3-2) ASC 564 or approval of department.
Electroencephalographic and brain stem audiometry, electroencephalography, electrocardiographic audiometry, respiration audiometry, electrodermal audiometry, impedance audiometry and electroneurodiagnostic procedures.

I. Amplification Systems for the Hearing Impaired
Winter. 4(4-2) ASC 533B.
Form, function and clinical application of group and personal amplification systems for the hearing impaired.

J. Tinnitus and Vestibular Disorders
Spring. 3(3-2) ASC 5331 or approval of department.
Anatomy, physiology, evaluation, interpretation and management of tinnitus.

840. Language Theories and Disorders
Spring. 4(4-0) Previous course work in language development.
Advanced study of child language research emphasizing an applied psycholinguistic approach to child language disorders.

841. Evaluation and Treatment of Speech and Language Disorders
A. Aphasia
Fall. 4(4-0)
Neuropathology, symptomatology, and speech and language habilitation and rehabilitation of individuals with aphasia.

B. Apraxia and Dysarthria
Spring. 4(4-0)
Neuropathology, symptomatology, and speech and language habilitation and rehabilitation of individuals with apraxia and dysarthria, including those with cerebral palsy.
Descriptions — Audiology and Speech Sciences
of Courses

C. Voice Disorders
Winter. 4(4-0)
Etiology, symptomatology, diagnosis, and treatment of voice disorders including the specific communication problems of the laryngectomized.

D. Stuttering
Fall. 4(4-0)
History, symptomatology, development, evaluation, and theories of stuttering. Focus is to facilitate clinical involvement with stutterers.

E. Orofacial Anomalies
Spring. 4(4-0)
Etiology, symptomatology, diagnosis, and treatment of various orofacial anomalies including lip and oral cleft, glottic, jaw resection, dental anomalies, and tongue thrust.

F. Delayed Language Assessment
Fall. 4(4-0)
Evaluative techniques including audiometry, psychometry, and case history as aids to the differential evaluation of delayed language development.

G. Language Intervention: Early Stages
Winter. 4(4-0) Approval of department.
Language intervention for children functioning at or below a four-year-old level in their language behavior; mental retardation, autism, and other developmental delays associated with severe language impairments.

H. Language Intervention: Later Stages
Summer. 4(4-0) Approval of department.
Treatment of developmental language delays and disorders with emphasis upon children functioning at or above the four-year-old level in language behavior; preschool and adolescent language disorders are included.

842. Augmentative and Alternative Communication Systems
Summer. 4(4-0) Approval of department.
Historical perspective and philosophy of augmentative/alternative communication systems. Aided and unaided non-speech communication systems. Assessment, selection, and intervention procedures.

843. Transfer and Maintenance of Speech Behaviors
Spring. 4(4-0)
Various clinical procedures; assisting others in transferring these behaviors outside the clinical environment.

Summer. 4(4-0) Approval of department.
Evaluation and analysis of various theories of speech perception and their implications for speech and language pathologists, audiologists, and speech and hearing scientists.

854. Psychophysics and Theories of Audition
Fall. 4(4-0) Approval of instructor.
Nature of auditory stimuli and the results of psychophysical experimentation in audition.

875A. Clinical Practicum in Speech and Language Pathology
Fall. Winter. Spring. Summer. 1 credit. May reenroll for a maximum of 8 credits. ASC 474 and satisfactory completion of a speech, language, and hearing screening/evaluation at the MSU Speech and Hearing Clinic. Directed diagnostic, therapeutic, and prognostic experience in speech and language pathology.

875B. Clinical Practicum in Audiology
Fall. Winter. Spring. Summer. 1 credit. May reenroll for a maximum of 8 credits. ASC 454 and satisfactory completion of a speech, language, and hearing screening/evaluation at the MSU Speech and Hearing Clinic. Directed diagnostic, therapeutic and prognostic experience in audiology in various clinical settings.

875C. Communication Disorders: Neuroanatomy-Neurophysiology
Fall. 4(2-0) Approval of department.
Neuroanatomical and neurophysiological correlates of speech, language, and hearing.

889. Master's Thesis Research
Fall. Winter. Spring. Summer. 4(4-0) Variable credit. Approval of department.

940. Seminar in Audiology and Speech Sciences
Fall. Winter. Spring. Summer. 4(4-0) May reenroll for a maximum of 16 credits.

990. Special Problems in Audiology and Speech Sciences
Fall. Winter. Spring. Summer. 1 to 6 credits. Special projects in audiology and speech sciences.

999. Doctoral Dissertation Research

BIOCHEMISTRY BCH

College of Agriculture and Natural Resources
College of Human Medicine
College of Natural Science
College of Osteopathic Medicine

100. Lectures in Biochemistry
Spring. 1(1-0) Biochemistry majors; others by approval of department.
An introduction to modern biochemistry using an historical approach.

200. Introduction to Biochemistry
Winter. Spring. 5(5-0) Credit may not be earned in both BCH 200 and BCH 401. General chemistry; one term organic chemistry. Not acceptable for a B.S. degree in biochemistry. Survey of biochemistry emphasizing the major metabolic activities of living organisms.

401. Basic Biochemistry
Fall. Spring. 5(5-0) Credit may not be earned in both BCH 200 and BCH 401. One year organic chemistry or CEM 242; not open to biochemistry majors.
A one-term presentation of biochemistry emphasizing structure and function of major biomolecules, metabolism and regulation. Examples used for illustrative purposes will emphasize the mammalian organism.

404. Biochemistry Laboratory
Winter. 3(0-9) CEM 163, one year organic chemistry with laboratory, MTH 113 or approval of department, BCH 401 or BCH 451. Enzymes (proteins), lipids, and cell organelles.

405. Biochemistry Laboratory
Fall. Spring. 3(0-9) BCH 453 or concurrently undergraduate biochemistry majors or approval of department. Modern biochemical techniques to study nucleic acid structure and function.

451. Biochemistry I
Fall. Spring. 3(3-0) Credit may not be earned in both BCH 401 and BCH 451. One year organic chemistry or CEM 242.
A comprehensive survey of biochemistry, with emphasis on protein structure and function, enzymes, and bioenergetics.

452. Biochemistry II
Winter. 3(3-0) BCH 451.
Continuation of BCH 451, with emphasis on intermediary metabolism.

453. Biochemistry III
Spring. 3(3-0) BCH 452.
Continuation of BCH 452, with emphasis on the replication and expression of genetic information.

480. Principles of Biochemical Methods
Winter. 3(3-0) One year of physical chemistry or CEM 355 concurrently. BCH 453 or BCH 401.
Principles of biochemical methods with emphasis on electrophoresis, chromatography, immunological techniques, sedimentation, diffusion, viscosity, radiochemistry, and absorption and emission spectroscopy.

470. Biological Membranes
(1DC) Spring. 3(3-0) BCH 401.
Interdepartmental with the departments of Microbiology and Public Health, and Physiology.Administered by the Department of Physiology.
The chemistry, physics and mathematics of the permeability, energy transductions and surface functions of differentiated cell membranes and membranous organelles are compared. A brief discussion of theoretical and experimental models is included.

499. Research
Fall. Winter. Spring. Summer. 1 to 4 credits. May reenroll for a maximum of 12 credits. Undergraduates; approval of department.
Participation in research projects.

501. Medical Biochemistry
Fall. 3(3-0) Open only to students in the professional programs in the College of Human Medicine and the College of Osteopathic Medicine.
Basic biochemical principles and terminology of importance in medical biology.

502. Medical Biochemistry
Winter. 3(3-0) BCH 501 or approval of department.
A continuation of BCH 501.

511. Medical Biochemistry I
Winter. 4(4-0) One year of organic chemistry. Open only to students in the professional programs in the College of Human Medicine and the College of Osteopathic Medicine.
Basic biochemical principles and terminology with emphasis on metabolism and function of biomolecules of importance in medical biology.

512. Medical Biochemistry II
Spring. 4(4-0) BCH 511.
Basic biochemical principles and processes pertinent to specific areas of human pathophysiology.