Descriptions — Arts and Letters of Courses

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 276, 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. 1 credit. May revolve for a maximum of 2 credits. Grade of 2.0 or better in both ASC 301 and ASC 373, satisfactory completion of a speech, language, and hearing screening/evaluation at the MSU Speech and Hearing Clinic.
Therapeutic experience in speech and language pathology.

476. Speech Language Pathology: Intervention Procedures
Fall, Winter, Spring. 4(4-0) ASC 373 or approval of department.
Intervention procedures in speech-language pathology.

477. Methods in Public School Speech and Hearing Therapy
Fall, Winter. 4(3-2) ASC 201, ASC 373. 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 237, 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 revolve for a maximum of 12 credits. Approval of department.

801. Phonological Disorders
Spring, 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.

ASTRONOMY AND ASTROPHYSICS
See Physics and Astronomy.

AUDIOLOGY AND SPEECH SCIENCES
ASC 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. 3(3-0)
Speech, hearing and language disorders in adults and children.

222. Oral Language Development
Fall, Winter, Spring, Summer. 3(3-0)
Emergence and 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 237.
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. Speech-Language Pathology: Evaluation Procedures
Fall, Winter, Spring. 5(4-2) ASC 201 and ASC 277 or approval of department.
Evaluation procedures in speech-language pathology.

833. Specialized Clinical Audiology
A. Differential Audiology
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 medico-legal problems.

D. Advanced Audiological Evaluation
Winter. 4(3-2)
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 audimetry, language assessment, and case studies as aids to the differential diagnosis of auditory disorders in children; habilitative procedures for the acoustically handicapped child.

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

G. Auditory Habilitation of the Hearing Impaired
Summer. 4(4-0) ASC 460; ASC 833B 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 854 or approval of department.
Electroencephalographic and brain stem audiometry, electrocochleography, electrocardiac audimetry, respiration audimetry, psychoacoustic audiometry, impedance audiometry and electrovestibulography.

I. Amplification Systems for the Hearing Impaired
Winter. 4(3-2) ASC 833B.
Form, function and clinical application of group and personal amplification systems for the hearing impaired.

J. Tinnitus and Vestibular Disorders
Spring. 3(2-2) ASC 833I or approval of department.
Anatomy, physiology, evaluation, interpretation and management of tinnitus.

840. Language Theories and Disorders
Summer. 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
Winter. 4(4-0) ASC 876
Neuropathology, symptomatology, and speech and language habilitation and rehabilitation of individuals with aphasia.

B. Apraxia and Dysarthria
Spring. 4(4-0) ASC 878
Neuropathology, symptomatology, and speech and language habilitation and rehabilitation of individuals with apraxia and dysarthria, including those with cerebral palsy.

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

D. Stuttering
Winter. 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/or palatal cleft, glossectomy, jaw resection, denial 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 those 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
Spring. 4(4-0) Approval of department.
Treatment of developmental language delays and disorders with emphasis on children functioning at or above the four-year-old level in language behavior; preadolescent and adolescent language disorders are included.

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

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

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 6 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 6 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.

876. Communication Disorders: Neuroanatomy-Neurophysiology
Fall. 4(3-2) Approval of department.
Neuroanatomical and neurophysiological correlates of speech, language, and hearing.

599. Master’s Thesis Research
Fall, Winter, Spring, Summer. Variable credit.
Approval of department.

940. Seminar in Audiology and Speech Sciences
Fall, Winter, Spring. 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. May reenroll for a maximum of 24 credits.
Special projects in audiology and speech sciences.

999. Doctoral Dissertation Research
Fall, Winter, Spring, Summer. Variable credit.
Approval of department.

BIOCHEMISTRY

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

100. Lectures in Biochemistry
Spring. 3(1-0) Biochemistry majors; others by approval of department.
An introduction to modern biochemistry using an historical approach.

200. Introduction to Biochemistry
Winter, Summer. 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.

210. General Biology
Fall, Spring. 4(4-2) Not open to students with credit in LBS 141. Interdepartmental with the Biological Science Program and the departments of Microbiology and Public Health, and Physiology. Administered by Biological Science Program.
Principles of biological organization: scientific method, biochemistry, cell biology, and evolution.

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 152, CEM 262, one year organic chemistry with laboratory; MTH 113, BCH 451 or BCH 401 with approval of department.
Enzymes (proteins), lipids, and cell organelles.

405. Biochemistry Laboratory
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. 3(4-0) Credit may not be earned in both BCH 401 and BCH 451. One year organic chemistry or CEM 342.
A comprehensive survey of biochemistry, with emphasis on protein structure and function, enzymology, and bioenergetics.

452. Biochemistry II
Winter. 3(4-0) BCH 451.
Continuation of BCH 451, with emphasis on intermediary metabolism.

453. Biochemistry III
Spring. 3(4-0) BCH 452.
Continuation of BCH 452, with emphasis on the replication and expression of genetic information.

470. Biological Membranes
(1DC 470) 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 transduction and surface functions of differentiated cell membranes and membranous organelles are compared. A brief discussion of the 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.