

Hearing and Speech Department
Aud 818 - Vestibular System and Disorders
Fall, 2011

Time: 8:30 a.m. to 11:20 a.m.
Place: 3rd Floor Miller Building, Room 3001
Instructors: Mark E. Chertoff, Ph.D and Teresa Kennalley, Au.D.
Office Hours: by appointment.

Course Description

Study of the anatomy and physiology of the normal vestibular system and clinical procedures used for the diagnosing of vestibular disorders.

Course Objectives/Learning Outcomes

- 1) Anatomy and physiology of the peripheral vestibular/central system
- 2) Diagnostic test procedures and interpretation
- 3) Overview of vestibular disorders
- 4) Treatment and rehabilitation

ASHA Standards

Students enrolled in this class will acquire knowledge and skills associated with the following ASHA standards for certification in Audiology: B.2, B.16, D.1, D.9, D.11, D.12, D.13, D.14, D.17.

Course Format and Requirements

This course is divided into 2 sections. Section 1 is basic anatomy and physiology of the vestibular system. Section 1 will be graded on 3 quizzes (25 pts each) and an exam (75 points) (total 150 pts). Section 2 is the clinical application of vestibular testing and rehabilitation. Section 2 will be graded on quizzes (60 points), lab assignments (80 points), observation of clinical vestibular testing (60 points) and a final exam (100 points) (total 300 points)

Observation instructions: 30 points each – Complete an observation and write up at two of the three listed sites

Observe one evaluation of a dizzy patient to include VNG and rotary chair, in the ENT department at KUMC. You will be responsible to schedule your observation time with ENT audiology. You will complete the observation review and reflection and submit it in the drop box within one week of the observation.

Observe one evaluation of a dizzy patient with Sam Bittel, AuD. at Audiology Associates. You are responsible to schedule your time. Times are to be arranged with Dr. Bittel. You will complete the observation review and reflection and submit it in the drop box within one week of the observation.

Observation of the evaluation of one dizzy patient at the Otologic Center. You are responsible to schedule your time with Sandra Brown. You will complete the observation review and reflection and submit it in the drop box within one week of the observation.

Lab assignments – 20 points each - Use the provided reporting format, found under the lab assignments in ANGEL

VNG – complete a VNG on a classmate utilizing the equipment in the department.

BPPV – Complete Chapter 5 Vestibular Learning Manual questions page 42-44

Rotary Chair – Complete a rotary chair lab in ENT dept.

Posturography – Complete your lab at Mid West Ear Institute.

Grades are assigned as: $\geq 90-100\%$ = A, $80-89\%$ = B, $70-79\%$ = C, $60-69\%$ = D, $\leq 59\%$ = F.

Textbooks required:

Jacobson and Shepard. Balance function assessment and management. 2008. Plural Publishing, San Diego.

http://www.pluralpublishing.com/publication_bfaam.htm

Myers, Vestibular Learning Manual. 2011. Plural Publishing, San Diego

http://www.pluralpublishing.com/publication_vlm.htm

Required Readings

Baird, R., Desmadryl, G., Fernandez, C., and Goldberg, J. The vestibular nerve of the chinchilla II. Relation between Afferent Response Properties and Peripheral Innervation Patterns in the Semicircular Canals. J. Neurophysiology, 1988, 60, No 1. 182-203.

Raphan, Th, Matsuo, V., and Cohen, B. Velocity storage in the vestibulo-ocular reflex arc (VOR). Exp. Brain Res. 1979; 35: 229-248

Uchino, Y., Stao, H., Sasaki, M., Imagawa, M., Ikegami, H., Isu, N., and Graf, W., Sacculocollic Reflex arcs in cats. J. Neruophys. 1997; 77, 3003-3012.

Other Readings if so fascinated...

Goldberg, J. M. and Fernandez, C. Physiology of peripheral neurons innervating semicircular canals of the squirrel monkey. I. Resting discharge and response to constant angular accelerations. J. Neurophysiology, 1971; 34: 635-659.

Goldberg, J. M. and Fernandez, C. Physiology of peripheral neurons innervating otolith organs of the squirrel monkey. I. Response to static tilts and to long-duration centrifugal force. J. Neurophysiology, 1976; 39: 970-984.

Skavenski, A., and Robinson D. Role of abducens neurons in vestibuloocular reflex. J. of Neurophysiology 1973; 36:724-737.

Learning assistance, academic performance enhancement, and psychological services at KUMC are free, confidential, and available at Student Counseling & Educational Support Services by calling 913-588-6580 or visiting G116 Student Center.

Any student in this course who needs an accommodation because of a disability in order to complete the course requirements should contact the instructor or the Equal Opportunity / Disability Specialist (913-588-7813, TDD 913-588-7963) as soon as possible.

Vestibular System and Disorders Topic Outline 2011	
8/24	Chapter 1, quiz 1
8/31	Chapter 2, quiz 2
9/7	Chapter 3, quiz 3
9/14	Chapters 4, 5 hand out exam
9/ 21	Overview of vestibular testing Case history Bedside physical examination Readings: Book Ch. 4-5, Chapter 9 Vestibular Learning Manual, If you are interested- additional materials posted on Angel LAB 1 – complete VNG test protocol on one of your classmates, complete write up as directed and submit to drop box – to be completed before 10/19, schedule with instructor
9/28	ENG/VNG test parameters and applications Eye movements, Ocular motor testing, Readings: Book Chapter 7, Chapter 4 Vestibular Learning Manual <i>Quiz 1 – complete online prior to next class</i>
10/5	ENG/VNG caloric testing Readings Book Chapter 10, 11, Chapter 7 and 8 in Vestibular Learning Manual
10/12	ENG/VNG Positional testing Chapter 8 to page 179, Chapter 6 in Vestibular Learning Manual <i>Quiz 2 complete online prior to next class</i>
10/19	ENG/VNG Benign paroxysmal positioning vertigo – assessment and treatment Guest speaker – Sam Bittel, AuD. Readings: Book Chapter 8 page 179-193, Chapter 5 in Vestibular Learning Manual <i>Quiz 3 complete online prior to next class</i> LAB 2 – Complete Vestibular Learning Manual questions on page 42-44 and submit to the dropbox as an attachment
10/26	Computerized Dynamic Posturography VEMP Readings: Book Chapter 15-16, and Chapter 14 and 17 in Vestibular Learning Manual LAB 3 – Complete posturography hands on lab at Mid-West Ear Institute
11/2	Rotary Chair, guest speaker – Sandy Prentiss, M.A. – PhD student Autorotation Readings Vestibular Learning Manual chapters 10 – 14 Lab 4 - Complete rotary chair hands on lab in ENT department – <i>Quiz 4 complete online prior to next class</i>
11/9	Medical Diagnosis and medical/surgical management of the dizzy patient – Guest Lecture by Hinrich Staecker, M.D. Readings Book Chapter 21-23

11/16	Balance assessment interpretation – putting together all the pieces Readings: Book Chapter 27, Chapter 18 Vestibular Learning Manual <i>Quiz 5 complete online prior to next class</i>
11/23	No Class – Thanksgiving Break
11/30	Vestibular rehabilitation – beyond Canalith repositioning maneuvers overview of theories Readings: Book Chapter 25-26 <i>Quiz 6 complete online prior to next class</i>
12/7	Vestibular rehabilitation Vestibular rehabilitation therapy hands on lab during class time Review for final All course assignments must be completed and submitted by December 7
12/13	Finals week