Overview

This course is designed to provide the student with an understanding of the structure and function of the balance system and the evaluation and diagnosis of vestibular dysfunction. We will study the anatomy and physiology of the vestibular system, consider links among several sensory systems that enable us to maintain our orientation and posture, and learn about ways of evaluating those systems. Students will develop basic skills associated with evaluation and treatment of patients with balance disorders. The course is organized around lectures, demonstrations and practical laboratory exercises during which participants will practice evaluation techniques.

Learning outcomes: Participants will be able to describe
1. The anatomy & physiology of the vestibular system
2. Contributions of visual, somatosensory & vestibular systems to maintenance of orientation
3. Symptoms of common vestibular disorders
4. The procedures involved in electronystagmography
5. The principles and methods employed in dynamic posturography & rotary chair stimulation
6. The principles and methods employed in Vestibular Evoked Myogenic Responses (VEMP)
7. The principles and methods employed in Video Head Impulse Testing (vHIT)
8. Intervention strategies

Participants completing the laboratory exercises will be able to conduct a basic electronystagmography examination on a cooperating adult volunteer.

Textbook:

Tentative Lecture Schedule

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings (Chapters)</th>
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<tbody>
<tr>
<td>Jan 14</td>
<td>Introduction and course overview</td>
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<tr>
<td>Jan 21-26</td>
<td>Anatomy and physiology of the vestibular system</td>
<td>1 &amp; 2</td>
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<td>J 28-Feb 02</td>
<td>Integration of sensory &amp; motor systems</td>
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Feb 04-09  History and symptoms of vestibular disorders, informal tests  6-8
Feb 11-16  The vestibular lab - technical aspects
Feb 18-23  The test battery - Oculomotor, positioning, positional, caloric 9-11
F 25-Mar 02  BPPV & Spontaneous nystagmus 11, 26
Mar 04 (W)  Positional tests  11
Mar 09 (M)  **Exam 1**
Mar 11  Test outcomes overview
**Mar 16-18**  **Spring Break NO CLASS**
Mar 23-25  Caloric Evaluation 12, 13
M 30-Ap 01  Posturography, rotary chair 14, 15, 17, 19
Apr 06-08  Unilateral vestibular loss, Complete vestibular loss
Apr 13-15  Problems of Nonvestibular origin 29, 30
Apr 20-22  Vestibular dx & management in the aging population
Apr 27-29  Peeking at the otolithic system VEMP 21
May 05  vHIT & Review  16

**FINAL EXAMINATION Wednesday May 13th, 8:00 to 10:00**

**Examinations**

There will be two examinations. The first examination will be held on **Monday, March 9th**. The final examination will be held **Wednesday May 13th, 8:00 to 10:00**.

**Grading:** The first examination will have a value of 50 points. The second examination will have a value of 100 points.

Course letter grades will be assigned as follows:

A = 90% of high score
B = 80-89% of high score
C = 70-79% of high score
D = 60-69% of high score
E = < 60%

If you are having difficulty with the material or are concerned about your progress, then PLEASE see me. I’m happy to work with you to find learning methods to reinforce the material. **Don’t WAIT!!**

Students will have the opportunity to “shadow” audiologists and other therapists for a day at St. Jo Balance clinic. This will be arranged as the semester progresses. We will also take a “field trip” to Mayo Scottsdale to see the vestibular research facilities there. This will be later in the semester. We may need to schedule this trip during spring break.
SLHS 588Q Laboratory Exercises

The overall laboratory task will be to complete 6 vestibular examinations. Five will be VNGs, one will combine VEMPs and vHIT. For VNGs you will record (a) calibration, (b) gaze, (c) optokinetic, (d) smooth pursuit, (e) saccade measurements. In addition, the examination must include tests for spontaneous and position influenced nystagmus, Dix-Hallpike and bithermal caloric tests. In one of the five tests, substitute "ice" water stimulation for regular calorics. Each test should be accompanied by a narrative description of the test outcomes (ie. a report as if to a referring agency)

Lab Grading: Each evaluation required for laboratory performance will have a value of 10 points, for a total of 60. The lab grade is separate from your course grade.

The first three evaluations will be due on April 9th, the last two will be due on Friday, May 8th at 5 PM. Late submissions will not be accepted.

Past experience has suggested that it would be wise to practice portions of the VNG examination as soon as information is obtained about the procedure(s) and outcomes. The software is fairly friendly and you are encouraged to start working with the equipment as soon as you can. When you feel you have all of the pieces together, then schedule your subjects for the full exam.

Attendance Policy: This is a graduate course, you are expected to attend class sessions. If you are unable to attend class, then you must notify the instructors. If you miss class material, then it is your responsibility to obtain the information from your classmates.

• All holidays or special events observed by organized religions will be honored for those students who show affiliation with that particular religion.
• Absences pre-approved by the UA Dean of Students (or Dean’s designee) will be honored

Classroom Behavior: Please turn off all cell phones and pagers. If you MUST take a call, please step out of the room.

• Plagiarism within the Student Code of Academic Integrity: http://deanofstudents.arizona.edu/codeofacademicintegrity
• Threatening behavior by students: http://policy.web.arizona.edu/threatening-behavior-students

Academic Integrity: Course participants are expected to adhere to the University Of Arizona Code Of Academic Integrity. Requirements of the code may be found at: http://deanofstudents.arizona.edu/codeofacademicintegrity

Disabled students must register with Disability Resources and be identified to the course instructor through the University’s online process in order to use reasonable accommodations.
The information contained in this course syllabus, other than the grade and absence policies, may be subject to change with reasonable advanced notice.