

## AUD 811 Hearing Disorders

(Line #: 51971)

Spring 2011

(3 credit hours)

Class Meetings: Thursdays, 9:00-11:45; Dole 3048

Class Instructors: Tiffany A. Johnson, Ph.D., CCC-A  
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Office Hours: *after* class or by appointment

### **Course Description**

This course provides a study of disorders of the auditory system including anatomical, physiological, perceptual, and audiological manifestations of pathologies affecting hearing.

### **Course Objectives/Learner Outcomes**

The goal of this course is to increase the student's knowledge of a range of disorders affecting the auditory system, the typical treatment options available, and expected outcomes on a battery of widely used audiometric testing procedures. Particular attention will be paid to patient symptoms, appropriate interpretation of these symptoms, choice and interpretation of tests, and criteria for medical referral.

### **ASHA Certification Standards:**

This course is designed to cover the following KASA categories required for certification in audiology: B2, B4, B8, B10, B16; C1, C2, C3, C4, C6; D1, D2, D3, D4, D5, D6, D7, D8, D11, D12, D13, D14, D16; E1, E3, E4, E6.

### **Course Materials**

#### *Required Materials:*

1. Northern, J.L., Ed., (1996). Hearing Disorders (3<sup>rd</sup> Ed.), Boston: Allyn and Bacon.
2. Additional recommended readings will be available electronically through Blackboard. You will need Adobe Acrobat Reader to access these files.

#### *On-line Resources:*

1. Blackboard course website at <http://courseware.ku.edu>

### **Assignments**

#### 1. *Disorder Case Presentations and Handout Preparation*

You will sign up to present **3** disorder cases over the course of the semester. The information for these cases is found on a CD that was put together as a joint effort of the American Academy of Audiology and the Veteran's Administration. The CD includes actual cases for many of the disorders we will cover in this class. In your presentation, you should include the case history information, results of the various diagnostic tests, discussion of which tests are necessary for the case, and a summary of and recommendations for the case. You should be prepared to answer

questions regarding the case. You also should identify a recent (last 5 years or so) paper in the archival literature that provides additional, recent information regarding the case (either from a medical or audiologic perspective). An electronic copy of the paper should be submitted to Dr. Johnson so that she can make it available to your classmates. During your presentation, you should indicate what is valuable in the paper you selected (e.g., it provides a useful summary of the disorder, it describes a new diagnostic approach, it describes a new treatment, etc.). Finally, you should prepare a handout that includes a summary of the information you present in class, including an audiogram. In your handout, you also should list web references that are useful (and accurate) for the disorder covered in the case.

Your grade will be determined by the completeness and accuracy of the information you present in class along with the completeness, clarity, and accuracy of your handout. You can review the CD in Dr. Johnson's lab (3084 Dole) or in Dr. Widen's lab in Miller. Instructions for accessing these labs will be reviewed in class.

## 2. Disorders Paper

You will be assigned 1 disorder on which to write a paper. The paper should be short (approximately 5 pages, double-spaced). In your paper, you should develop a summary of the disorder that includes information about the disorder, presenting symptoms, lists of other conditions considered in the differential diagnosis, description of how the specific diagnosis is made, and a review of treatment options. You should consider *both an audiology and a medical* perspective. You are expected to use primary references in your paper and should use the APA style for referencing. No website references or references to your class notes/lecture materials (i.e. personal communication) are allowed. If you find good websites, you should include a separate list in the references where you list the URLs for websites with good information regarding the disorder. However, these websites cannot serve as reference material for the paper; they will be listed for future reference purposes only.

On the due date you should turn in 1 hard copy and one electronic copy of the paper. The hard copy will be graded and returned to you. I will then compile the papers into a book that will be distributed to the class at the end of the semester. Because this will become a reference for future use by you and your classmates, if serious factual errors are present in your paper, you will be asked to revise it to correct the factual errors prior to your paper being included in the book. A rubric for grading this assignment will be distributed in class.

- **Paper Due: 5/5**

## 3. Observation of Ear Surgery

You are required to observe one ear surgery during the course of the semester. This observation can take place with either Dr. Hinrich Staecker at KUMC or with Dr. Bradley Thedinger at one of several sites in the KC metro area. A one-page (double spaced), summary report is due by class time on **May 5**. Please see the handout "Surgery Observation Assignment" for additional details, including contacts for scheduling.

## 4. Case Presentation

Over the course of the semester, select one diagnostic case to present in class. The case should be selected from among the clinical experiences you are enrolled in for this semester and can

include those seen at your observation sites, in the Cleft Palate Clinic, or from one of your practicum experiences. In the oral presentation, include referral information, chief complaint, symptoms, pertinent history, audiologic findings (including an audiogram – maintain confidentiality!), results for other diagnostic tests, conclusions (including etiology, if known), and recommendations.

Note that in preparing this case report you should not in any way inconvenience or otherwise burden the clinical staff at any of the clinics or practicum sites for which you may be drawing your case information. This means that you should keep this assignment in mind from the start of the semester. If you see a case you think might be interesting to present, make notes of the required details on the day you see it. Do not expect help in recreating the case weeks or months after the client/patient was seen. If I get reports of complaints from clinic sites regarding this assignment, the student involved will have his or her grade lowered by as much as 2 letter grades for this assignment.

The presentations will be given in class on **May 12**. A copy of your PowerPoint slides (or other presentation materials) should be handed in on this day.

### **Audio or Video Taping Lecture**

Course materials prepared by the instructor, together with the content of all lectures and review sessions presented by the instructor are the property of the instructor. Video and audio recording of lectures and review sessions without the consent of the instructor is prohibited. On request, the instructor will usually grant permission for students to audio tape lectures, on the condition that these audio tapes are only used as a study aid by the individual making the recording. Unless explicit permission is obtained from the instructor, recordings of lectures and review sessions may not be modified and must not be transferred or transmitted to any other person, whether or not that individual is enrolled in the course.

### **Academic Misconduct**

Students are expected to observe all University guidelines pertaining to academic misconduct. As stated in the University Senate Rules and Regulations (2.6.1):

“Academic misconduct by a student shall include, but not be limited to, disruption of classes; threatening an instructor or fellow student in an academic setting; giving or receiving of unauthorized aid on examinations or in the preparation of notebooks, themes, reports or other assignments; knowingly misrepresenting the source of any academic work; unauthorized changing of grades; unauthorized use of University approvals or forging of signatures; falsification of research results; plagiarizing of another’s work; violation of regulations or ethical codes for treatment of human and animal subjects; or otherwise acting dishonestly in research.” Academic misconduct will not be tolerated and will be dealt with in accordance with all University rules and regulations.

**Non-Academic Misconduct**

The scope and content of the material included in this course are defined by the instructor in consultation with the responsible academic unit. While the orderly exchange of ideas, including questions and discussions prompted by lectures, discussion sessions and laboratories, is viewed as a normal part of the educational environment, the instructor has the right to limit the scope and duration of these interactions. Students who engage in disruptive behavior, including persistent refusal to observe boundaries defined by the instructor regarding inappropriate talking, discussions, and questions in the classroom or laboratory may be subject to discipline for non-academic misconduct for disruption of teaching or academic misconduct, as defined in the Code of Student Rights and Responsibilities (CSRR), Article 22, Section C, and the University Senate Rules and Regulations, Section 2.4.6. Article 22 of CSRR also defines potential sanctions for these types of infractions.

**Accommodations**

The staff of Services for Students with Disabilities (SSD), 135 Strong, 785-864-2620 (v/tty), coordinates accommodations and services for KU courses. If you have a disability for which you may request accommodation in KU classes and have not contacted them, please do so as soon as possible. Please also notify the instructor in writing (e-mail is acceptable) within one week of receiving this syllabus so that appropriate accommodations for this course can be discussed.

If a scheduled exam, lab exercise, or quiz is in conflict with a mandated religious observance, you must notify the instructor in writing (e-mail is acceptable) within one week of receiving this syllabus so that an alternative arrangement can be made in advance of the scheduled requirement.

**Grading**

Grades will be based on points earned on the following:

Exam 1	20%
Exam 2	20%
Final Cumulative Exam	25%
Disorder Case Presentation 1	5%
Disorder Case Presentation 2	5%
Disorder Case Presentation 3	5%
Disorder Paper	10%
Surgery Observation	5%
Case Presentation	5%

The final grade for the course will be based on the following:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
<60%	F

These grade boundaries may be adjusted slightly depending on the distribution of final scores.

## AUD 811 Spring 2011 Topic Outline and Schedule

Date	Topic	Readings
1/27	<p><b>Introduction to Course</b></p> <p><b>The Otologic Evaluation</b></p> <p><b>Clinical Decision Theory</b></p> <p><b>Diagnostic Audiology:</b></p> <ul style="list-style-type: none"> <li>• Principles of Acoustic Immittance</li> <li>• Multifrequency Audiometry</li> <li>• Wideband Reflectance</li> </ul>	<ul style="list-style-type: none"> <li>• Review Material <ul style="list-style-type: none"> <li>○ Ch. 1 &amp; 2 provide a review of anatomy and physiology of the peripheral auditory system. I assume that you are familiar with these topics and will not review them here.</li> <li>○ Ch. 4 &amp; 5 provide a review of diagnostic audiology you may wish to consult them, or better yet, your Diagnostic Aud. material from last semester.</li> </ul> </li> <li>• Otologic Evaluation <ul style="list-style-type: none"> <li>○ Ch. 3, 7, 8</li> </ul> </li> <li>• Multifrequency Tympanometry: <ul style="list-style-type: none"> <li>○ Hunter and Margolis (1992)</li> <li>○ Margolis et al. (2003)</li> </ul> </li> <li>• Wideband Reflectance <ul style="list-style-type: none"> <li>○ Feeney et al. (2003)</li> </ul> </li> </ul>
2/3	<p><b>Pinna &amp; Ear Canal:</b></p> <ul style="list-style-type: none"> <li>• Normal Pinna and Ear Canal Variants</li> <li>• Abnormal Pinna Variants and Lesions</li> <li>• Congenital Defects of Pinna and Ear Canal</li> <li>• Disorders of the Ear Canal</li> </ul> <p><b>Introduction to Library Services (Guest speaker: Judith Emde)</b></p>	<ul style="list-style-type: none"> <li>• Pinna &amp; Ear Canal <ul style="list-style-type: none"> <li>○ pp. 189-190</li> <li>○ Relevant sections Ch. 7</li> <li>○ Roeser and Roland (1992)</li> </ul> </li> </ul>
2/10	<p><b>Tympanic Membrane/Middle Ear:</b></p> <ul style="list-style-type: none"> <li>• Normal Tympanic Membrane/Middle Ear Characteristics</li> <li>• Middle Ear Disorders <ul style="list-style-type: none"> <li>○ Otitis Media</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Tympanic Membrane/Middle Ear <ul style="list-style-type: none"> <li>○ Relevant sections Ch. 7</li> <li>○ AAP Guidelines for Acute Otitis Media</li> <li>○ AAP Guidelines for Otitis Media with Effusion</li> <li>○ Ch. 9 – Otitis Media but less current than the AAP Guidelines</li> </ul> </li> </ul>

Date	Topic	Readings
2/17	<b>Tympanic Membrane/Middle Ear: (cont.)</b> <ul style="list-style-type: none"> <li>• Middle Ear Disorders (cont.) <ul style="list-style-type: none"> <li>○ Otitis Media (cont.)</li> <li>○ Cholesteatoma</li> </ul> </li> <li>• Tympanic Membrane Disorders</li> </ul>	<ul style="list-style-type: none"> <li>• Tympanic Membrane/Middle Ear <ul style="list-style-type: none"> <li>○ Relevant sections Ch. 7</li> </ul> </li> </ul>
2/24	<b>Tympanic Membrane/Middle Ear: (cont.)</b> <ul style="list-style-type: none"> <li>• Otosclerosis, Ossicular Disorders, &amp; Fibro-osseous lesions</li> <li>• Glomus tumors</li> </ul> <p>-----End Exam 1 Material-----</p>	<ul style="list-style-type: none"> <li>• Otosclerosis: Ch. 10</li> <li>• Glomus tumors: pp. 69, 104, 124</li> </ul>
3/3	<b>EXAM 1</b>	
3/10	<b>Middle/Inner Ear Disorders</b> <ul style="list-style-type: none"> <li>• Temporal Bone Fractures</li> </ul> <b>Inner Ear/Cochlear Disorders</b> <ul style="list-style-type: none"> <li>• Congenital Disorders <ul style="list-style-type: none"> <li>○ Nonsyndromic Hereditary</li> <li>○ Congenital malformations</li> <li>○ Infectious agents</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Temporal-bone fractures: p. 103</li> <li>• Nonsyndromic Hereditary <ul style="list-style-type: none"> <li>○ McGuirt &amp; Smith (1999)</li> </ul> </li> </ul>
3/17	<b>Inner Ear/Cochlear Disorders (cont.)</b> <ul style="list-style-type: none"> <li>• Meniere's Disease</li> <li>• Noise Induced Hearing Loss</li> </ul>	<ul style="list-style-type: none"> <li>• Meniere's Disease <ul style="list-style-type: none"> <li>○ Ch. 12</li> <li>○ Gates (2005) – a more recent look at Meniere's Disease</li> </ul> </li> <li>• Noise Induced Hearing Loss <ul style="list-style-type: none"> <li>○ Ch. 13</li> <li>○ Lonsbury-Martin &amp; Martin (2007)</li> </ul> </li> </ul>
3/24	<b>Spring Break – NO CLASS</b>	
3/31	<b>Inner Ear/Cochlear Disorders (cont.)</b> <ul style="list-style-type: none"> <li>• Ototoxicity</li> <li>• Other Miscellaneous Inner Ear/Cochlear Disorders <ul style="list-style-type: none"> <li>○ Idiopathic Sudden SNHL</li> <li>○ Autoimmune Inner Ear Disease</li> <li>○ Infectious agents</li> <li>○ Perilymph Fistula</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Ototoxicity <ul style="list-style-type: none"> <li>○ Ch. 11</li> <li>○ ASHA (1994) Guidelines</li> </ul> </li> <li>• Other Misc. Disorders <ul style="list-style-type: none"> <li>○ Otosyphillis – mentioned Ch. 12 (p. 169)</li> <li>○ Fistula – mentioned Ch. 5 (p. 69)</li> </ul> </li> </ul>

Date	Topic	Readings
4/7	<ul style="list-style-type: none"> <li>• Other Miscellaneous Inner Ear/Cochlear Disorders (cont.)</li> </ul> <p>-----End Exam 2 Material-----</p> <p><b>Presbycusis</b></p>	<ul style="list-style-type: none"> <li>• Presbycusis               <ul style="list-style-type: none"> <li>○ Ch. 15</li> </ul> </li> </ul>
4/14	<b>EXAM 2</b>	
4/21	<p><b>Tinnitus</b></p> <p><b>Retrocochlear &amp; Central Disorders</b></p> <ul style="list-style-type: none"> <li>• Facial Nerve Disorders</li> <li>• Acoustic Tumors</li> </ul>	<ul style="list-style-type: none"> <li>• Tinnitus               <ul style="list-style-type: none"> <li>○ Ch. 23</li> </ul> </li> <li>• Facial Nerve Disorders               <ul style="list-style-type: none"> <li>○ Roehm, Rubenstein, &amp; Gantz (2007)</li> </ul> </li> <li>• Acoustic Tumors               <ul style="list-style-type: none"> <li>○ Ch. 16</li> <li>○ Relevant section of Ch. 5, 7, 8</li> <li>○ Muto (1994)</li> </ul> </li> </ul>
4/28	<p><b>Retrocochlear &amp; Central Disorders (cont.)</b></p> <ul style="list-style-type: none"> <li>• Auditory Neuropathy/Auditory Dys-Synchrony</li> </ul>	<ul style="list-style-type: none"> <li>• Auditory Neuropathy/Auditory Dys-Synchrony               <ul style="list-style-type: none"> <li>○ Rance (2005)</li> </ul> </li> </ul>
5/5	<p><b>Retrocochlear &amp; Central Disorders (cont.)</b></p> <ul style="list-style-type: none"> <li>• Central Auditory Disorders</li> </ul> <p><b>***Surgery Observation Report Due</b></p> <p><b>***Disorder Paper Due</b></p>	<ul style="list-style-type: none"> <li>• Central Auditory Disorders               <ul style="list-style-type: none"> <li>○ Ch. 17</li> </ul> </li> <li>• Stach chapter (Ch. 17) in <i>Audiology: Diagnosis 2<sup>nd</sup> Ed.</i>; Edited by Roeser, Valente, Hosford-Dunn</li> <li>• Additional readings on Blackboard</li> </ul>
5/12	<b>Wrap-Up and Case Presentations</b>	
5/19	<b>Final Exam 9:00-11:45AM</b>	