Learner Outcomes
This course covers advanced clinical and experimental methods for evaluation of the peripheral and central auditory systems, including procedural considerations and interpretation of test results. After completing this course, you will be able to:

1. Demonstrate the ability to administer, interpret, and report the results of advanced audiological evaluations that incorporate advanced immittance measures, otoacoustic emissions testing, auditory processing evaluations, tinnitus evaluations, and tests of non-organic hearing loss
2. Demonstrate knowledge of the underlying physiological mechanisms contributing to auditory disorders and the ability to communicate this information to patients and other professionals in everyday language
3. Consider cultural and ethnicity considerations in interpretation of test results
4. Critically evaluate new research that aims to improve diagnosis and management of auditory disorders

ASHA Certification Standards (KASA)
A1, A2, A4, A5, A7, A8, A12, A13, A14, A17, B1, B2, B8, C1, C2, C3, C4, C12, C13, C14, C15, D1, E22, E24,

REQUIRED READINGS


Learning Assessments
1. **On-line Quizzes**: Students will complete 8 quizzes on the course ELMS site that cover lecture content and readings from the textbook and articles. These quizzes are “open-book” in that students have access to the text while taking the quiz. The students will have one week to complete the quiz. The quizzes are timed – but you will have 4 hours to complete it. Once you’ve started the quiz, you must finish it – you can’t go back to it later. The quizzes can be used as a study guide for the midterm and final as many multiple choice questions come from the on-line quizzes and Kahoots.
2. **Practical Lab Exercises and Reports:** Students will complete practical lab assignments using appropriate assessment tools and will submit a report for each lab. See the course ELMS site for more specific information on these assignments. Please submit all assignments in electronic format online by midnight on the due date. Although you may consult your textbooks and other resources, including your classmates, as you work on each lab, please make sure your write-up is your own. Please contact me as soon as possible if you have difficulties with or questions about a particular lab assignment, so that they can be resolved in plenty of time for you to complete the lab by the due date, and so that you have a better understanding the relevant concepts prior to exams. If there are any equipment problems or malfunctions, the due dates will be extended. The labs will cover the following topics:

<table>
<thead>
<tr>
<th>Date Assigned</th>
<th>Topic</th>
<th>Date Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>February 2</td>
<td>OAEs Anatomy &amp; physiology, classification, instrumentation, calibration</td>
<td>February 9</td>
</tr>
<tr>
<td>February 9</td>
<td>OAEs Clinical measurement, protocols, analyses</td>
<td>February 16</td>
</tr>
<tr>
<td>February 16</td>
<td>OAEs Clinical applications and efferent measurement</td>
<td>February 23</td>
</tr>
<tr>
<td>February 23</td>
<td>Advanced immittance</td>
<td>March 2</td>
</tr>
<tr>
<td>March 16</td>
<td>Non-organic hearing loss, APD neural mechanisms</td>
<td>April 6</td>
</tr>
<tr>
<td>April 13</td>
<td>APD evaluation and management</td>
<td>April 20</td>
</tr>
</tbody>
</table>

**Article Reviews:** Student will choose one article from the syllabus and will prepare and present powerpoint slides that summarize the article’s introduction, method, results (review each figure), and discussion. In addition, students will critique the article, suggest ways to improve the research, propose a new research question, and engage the class with at least one question. The presentation should not exceed 15 minutes. A grading rubric will be posted on ELMS.

<table>
<thead>
<tr>
<th>Article</th>
<th>Date</th>
<th>Student</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abdala &amp; Keefe, 2016</td>
<td>Feb 16</td>
<td>Maddie</td>
</tr>
<tr>
<td>Cedars et al. 2018</td>
<td>March 2</td>
<td>Rebecca</td>
</tr>
<tr>
<td>Konrad et al 2017</td>
<td>Feb 23</td>
<td>Allie</td>
</tr>
<tr>
<td>Moncrieff, et al. 2018</td>
<td>March 30</td>
<td>Peyton</td>
</tr>
<tr>
<td>Sugasawa et al., 2013</td>
<td>March 16</td>
<td>Erin</td>
</tr>
<tr>
<td>Durmaz et al., 2009</td>
<td>April 6</td>
<td>Kendell</td>
</tr>
<tr>
<td></td>
<td>April 13</td>
<td>Rachel</td>
</tr>
</tbody>
</table>
## Course Schedule

**Module 1 – Otoacoustic Emissions**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Readings</th>
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</thead>
</table>
| January 26 | Introduction; Class expectations; Otoacoustic emissions: Overview, Anatomy & Physiology | 1. Dhar and Hall, Text, Chapters 1 and 2  
| February 2 | Otoacoustic Emissions: Classification, instrumentation, calibration    | 1. Dhar and Hall, Text, Chapters 3 and 4  
2. Katz, Text, Chapter 19, 357-364  
| February 9 | Otoacoustic Emissions: Clinical measurement, protocols, and analyses   | 1. Dhar and Hall, Text, Chapters 5 and 6  
2. Katz, Text, Chapter 19, 364-372  
| February 16| Otoacoustic Emissions: Clinical applications and Efferent measurement  | 1. Dhar and Hall, Text, Chapters 7-9  

**Module 2 – Advanced Impittance Measures**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Readings</th>
</tr>
</thead>
</table>
| February 23| Multi-frequency tympanometry; Wideband reflectance intro              | 1. Katz, Text, Chapter 9, pp 149-161  
### Module 3 – Non-organic hearing loss and Auditory Processing Disorder

**March 9**

**Midterm**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>References</th>
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</table>

**March 23**

**Spring Break**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>References</th>
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</thead>
</table>
| March 30 | APD screening and evaluation                                         | 1. Katz Handbook, Chapter 29  

**April 6**

**APD differential diagnosis**

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<tr>
<th>Date</th>
<th>Topic</th>
<th>References</th>
</tr>
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</table>
| April 13 | APD management                                                        | 1. Katz Handbook, Chapter 29  

### Module 4 – Tinnitus

**April 20**

**Tinnitus neural mechanisms**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>References</th>
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</thead>
</table>

Please visit [http://apps.gradschool.umd.edu/Catalog/policy.php?the-academic-record](http://apps.gradschool.umd.edu/Catalog/policy.php?the-academic-record) for the Graduate School’s full list of campus-wide policies and follow up with me if you have questions.

### Make-up Exams/Assignments

If you are aware ahead of time that you will be absent on the day of an exam, you may schedule a make-up exam provided that (1) you have an approved University Acceptance (e.g., religious observance) and (2) I am notified in writing within the first two weeks of the semester. Assignments are expected to be submitted by the dates indicated on the syllabus or in advance of the due date if you anticipate being absent from class on the due date. You should inform me that you will be absent ahead of time to make arrangements to submit the assignment.

When the reason for an absence on the day of an exam or assignment is not foreseeable, you **must inform me as soon as possible**. Please make every effort to contact me by phone or by email prior to class if you will be absent due to illness or other emergency. Campus Senate policy requires students who are absent due to illness/injury to furnish documentary support to the instructor. You must provide written documentation verifying your illness/injury on the day that you return to class. You will not be allowed to turn in missed assignments or make up exams if you have not provided this documentation. In addition, if it...
is found that you have falsified the documentation provided, you will be referred to the University’s Student Conduct Office.

Make-up exams will be scheduled at a time that is mutually agreeable to both the instructor and the student. Assignments are due immediately by electronic submission if possible or upon the student’s return to school. All missed exams and assignments not turned in will result in a grade of zero for that exam/assignment.

Problems/Questions
Please do not hesitate to make an appointment to speak with me if you are having difficulty with the material or with an assignment, if you have questions about how something was graded, or if you have other problems or issues related to the course you wish to discuss. Email is an excellent way to reach me outside of course meetings.

Names/Pronouns and Self Identifications

The University of Maryland recognizes the importance of a diverse student body, and we are committed to fostering equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity. Visit trans.umd.edu to learn more.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose (e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for all of your fellow Terps.
Get Some Help!

You are expected to take personal responsibility for your own learning. This includes acknowledging when your performance does not match your goals and doing something about it. Everyone can benefit from some expert guidance on time management, note taking, and exam preparation, so I encourage you to consider visiting http://ter.ps/learn and schedule an appointment with an academic coach. Sharpen your communication skills (and improve your grade) by visiting http://ter.ps/writing and schedule an appointment with the campus Writing Center. Finally, if you just need someone to talk to, visit http://www.counseling.umd.edu.

Everything is free because you have already paid for it, and everyone needs help… all you have to do is ask for it.