



CS&D 858 section 001 Syllabus *(Subject to changes following discussion with students)*

Physiological Assessment in Audiology I

Department of Communication Sciences and Disorders

Physiological Assessment in Audiology I

CS&D 858 001 (2 Credits)

2024 Spring

Description

Study of physiological measures used by audiologists in threshold and diagnostic evaluations, including Auditory Brainstem Responses and Otoacoustic emissions. Enroll Info: Grad st, cons inst, Com Dis 850, 851, 852, 853, 858, 859, con reg in 861

Prerequisite(s)

Graduate/professional standing

Enrolment in CS&D858 and CS&D859

Instruction Mode

In person

Department: Communication Sciences & Disorders

College: Letters and Science

Canvas Course URL: <https://canvas.wisc.edu/courses/381960>

2024 Spring Class

Term Start Date: 22 Jan 2024

Last Class Date: 29 April 2024

Term End Date: 10 May 2024

Location and Schedule: GNH Distance Room: Monday's 3:20 P.M. to 5:00 PM.

CRN: 252004073

Instructor : G. Nike Gnanateja, Ph.D.

- Office: 462 Goodnight Hall
- Email: gurindapalli@wisc.edu

Office Hours

- **Wednesdays 4:00 PM to 6:00 PM**

Instructor's Preferred Contact

1. **Slack:** <https://csd-classes.slack.com/archives/C06DQDQL5QX>. (I Recommend installing the app)
2. **Email:** gurindapalli@wisc.edu

Reader/Grader: Jenny Lucke

Email: jlucke@wisc.edu

Methods of communication:

I will communicate with everyone on *slack*. This is the most preferred mode of communication. If you cannot reach me on slack, you can contact me via email.

How the Credit Hours are Met (2 Credits)

The credit standard for this course is met by an expectation of a total of ~1 hr 40 mins classroom engagement, and a minimum of 4 hours of out of class student work each week for approximately fifteen weeks (<https://kb.wisc.edu/apir/page.php?id=110511>). The outside of class student engagement includes but is not limited to reading, studying, hands-on experiences, examinations, and other learning activities.

GRADING AND COURSE MATERIALS

Course Website, Learning Management System and Instructional Tools: Canvas

Chapters and readings will be provided on canvas.

Recommended Textbooks for Readings

- Durrant, J. D., Fowler, C. G., & Ferraro, J. A. (2020). Basic Concepts of Clinical Electrophysiology in Audiology. (electronic versions available at both Madison and Stevens point libraries)
- Katz, J., Chasin, M., English, K., Hood L., & Tillery, K. (Eds.). (2015). *Handbook of Clinical Audiology*, 7th Ed.(chapters will be provided on Canvas)
- Robinette, M., & Glatke, T. (Eds). (2007). *Otoacoustic Emissions: Clinical Applications, 3rd ed.* Thieme Medical Publishers. (Chapters will be provided on Canvas)
- Silman, S., & Silverman, A. (1991). *Auditory Diagnosis: Principles and Applications*. Academic Press. (chapter will be provided)

Instructor Objectives:

1. Provide organized, clear content and maximize learning efficiency
2. Come to class prepared to answer your questions to the best of my ability. Many times that may include asking questions back to you to help lead you to understand the topic without directly answering your questions.
3. Be available during lab to address questions/concerns.
4. Provide a safe space for students to work outside their comfort zone, to make mistakes and learn from them.

Course Units

Unit 1: Introduction to Electrophysiology and Auditory Evoked Potentials

Unit 2: Recording Principles for AEPs

Unit 3: Recording and Interpreting the ABR: Normal Aspects/Pathological Aspects/Infants

Unit 4: Recording and Interpreting the ECoChG

Unit 5: Special ABR tests

Unit 6: Recording and Interpreting OAEs: Origins and Recording Methods/Normal Aspects/Pathological Aspects

Unit 7: Clinical Correlation: OAE and ABR data in case studies

Outcomes

1. Describe the anatomy and physiology of the cochlea and auditory nervous system with respect to physiological assessment
2. Describe how the cochlea and auditory neurons generate electrical responses
3. Describe how to record and interpret an Electrocochleogram
4. Describe how to record and interpret an Auditory Brainstem Response
5. Differentiate between normal and pathological ABR responses
6. Explain the signals, methods, and principles used for recording AEPs
7. Describe how the cochlea creates otoacoustic emissions
8. Describe how to record and interpret otoacoustic emissions
9. Describe the inclusion of the tests learned in the course in a clinical test battery with appropriate decision making skills
10. Integrate the information from behavioral and physiological responses to determine the status of the auditory system in a patient.

SCHEDULE (*Subject to change*) – *The schedule will be flexible to adapt to the students' pace of learning*

Date	Unit	Assignment/Quiz for the week
01/22	Course logistics, review, survey	Survey- Not included for grade
01/29	Brief Refresher to Auditory anatomy physiology and Unit 1: Introduction to Electrophysiology and Auditory Evoked Potentials	Quiz 1
02/05	Unit 2: Recording Principles for AEPs	Quiz 2
02/12	Unit 3: Recording and Interpreting the ABR Normal Aspects/Pathological Aspects/Infants	Quiz 3
02/19	Unit 3: Recording and Interpreting the ABR Normal Aspects/Pathological Aspects/Infants (Video lessons)	Quiz 4
02/26	Unit 3: Recording and Interpreting the ABR Normal Aspects/Pathological Aspects/Infants	Quiz 5
03/04	Unit 4: Recording and Interpreting the ECoChG	Quiz 6
03/11	Unit 5: Special ABR tests	Quiz 7
03/18		
03/25	Spring Break	ABR Assignment
04/01	Unit 6: Recording and Interpreting OAEs: Origins and Recording Methods/Normal Aspects/Pathological Aspects	Quiz 8
04/08	Unit 6: Recording and Interpreting OAEs: Origins and Recording Methods/Normal Aspects/Pathological Aspects	Quiz 9
04/15	Unit 6: Recording and Interpreting OAEs: Origins and Recording Methods/Normal Aspects/Pathological Aspects	OAE assignment
04/22	Unit 7: Clinical Correlation: OAE and ABR data in case studies	Exam
04/29	Unit 7: Clinical Correlation: OAE and ABR data in case studies	

*****AAA will be on 4/17-4/20 this year.**

Grading

Quizzes	Exam	Class Participation	Case Discussions	Assignments	Professionalism	Total
40%	10%	20%	10%	10%	10%	100%

Quizzes 6, 9, and the Exam will be cumulative and used to assess the KASA competencies. Students should get a grade B or higher in quiz 6, 9, and Exam each to satisfy KASA competencies. 5% will be deducted for each late submission without prior approval from the instructor.

The questions from previous units may spill over to ensure long-term retention. Each quiz can be attempted ~ 3 times (additional attempts may be given based on quiz difficulty). The best grade across attempts will be considered as the final grade for the quiz. All quizzes, exams, and assignments should be performed by students independently.

Quizzes

Quizzes will be posted at 12PM on the Tuesdays of every quiz week and are due at 8 AM the following Monday morning. The quizzes are designed to assess engagement with the reading materials and class lectures. The time per quiz will vary depending on the quiz difficulty. Quiz 6 and 9 will be cumulative and designed to assess KASA competencies. Students need to score a grade of B or higher on both quizzes 6 & 9 to satisfy the KASA competencies. The grades across all the quizzes will be averaged to get a total quiz grade. **All quizzes will be online** and proctored using HONORLOCK. Each quiz can be attempted ~ 3 times (additional attempts may be given based on quiz difficulty). Instructor and reader grader will be available to provide feedback about quizzes and pointers to improve performance on the next attempt

Exam

The Exam will be posted at 12PM on Tuesday 04/23. The exam will be cumulative and will involve questions about decision making for the choice of physiological tests across a wide range of case scenarios, and important foundations for the physiological tests relevant for clinical practice. **The exam will be online** and proctored using HONORLOCK. The exam will be cumulative and designed to assess KASA competencies. Students' need to score a B or higher in Exam to satisfy KASA competencies.

Class Participation

Class participation is vital for this course. The instructor will engage the students in class discussion, ask pop-questions etc to ensure efficient transmission of information. Class discussion and answering also ensures that the students think deeply about the course material and ensures long term retention. Further doctoral-level class discussions and participation engages in developing newer and creative ideas and fosters a nurturing environment for higher learning.

- Be proactive
- Ask questions about course content, clarifications, and deeper questions related to content. Questions demonstrate willingness to learn and critically think about the content
- Answer questions. While accuracy is important, attempting to answer is very important. Attempting to answer demonstrates deep thinking about the subject.
- Instructor will serve as provocateur and moderate class discussions.
- Discussion among students in silos is discouraged. Any discussions should involve the whole class unless the instructor is organizing break-out group discussions.
- Be independent and not rely on notes when answering questions. This encourages independent thinking and better retention.
- Involve in class discussions even if the information provided is new
- Students will start with 0 points. The number will slowly start to increase until a maximum of 20. The number will be dynamically increased and decreased (can be seen in the gradebook every week). This is to incentivize continuous engagement throughout the course.

Asking questions about course structure, quizzes/exam, schedule etc, do not count towards class participation.

Students will start with 0 points. The number will slowly start to increase to a maximum of 10. The number will be dynamically increased and decreased (can be seen in the gradebook every week). This is to incentivize continuous engagement throughout the course.

Case Discussions

Each student will be provided with cases and each student must make a brief case presentation for 10 minutes (5 minutes presentation + 5minutes discussion). The students must provoke and moderate the discussion. The cases will be assigned to students in the week following spring break. Student discussion will be counted towards class participation.

Assignments

Students will complete two writing assignments (5 pts each). Write a paper about each subject below in 4 pages, 12pt, Times New Roman, Single Line Spacing, 1-inch margins.

1. How have the Auditory Brainstem Responses Impacted Hearing Healthcare - How are they relevant for the profession of Audiology?
2. How have the Otoacoustic Emissions Impacted Hearing Healthcare - How are they relevant for the profession of Audiology?

Rubric will be provided 2 weeks before the due date. This is to encourage creative and out of box thinking that is not limited by the rubric.

Students are always encouraged to reach out to the instructor and discuss ideas for the assignments. Feel free to discuss your assignment plans with the instructor during office hours or other mutually agreed upon times. Two attempts will be provided per submission. Feedback will be provided after the first submission

Professionalism

All students will begin the semester with 10 professionalism points (10% of grade). These points may be maintained by attending class, refraining from using social media or other apps (except slack for class) in class or on Zoom, and by being considerate of classmates and instructor. Class meets only once a week and lectures will go beyond the course material posted. You may be tested on discussions that took place exclusively in class, so it is in your best interest to attend every lecture. Unless there is a documented emergency, one professionalism point will be deducted for each class absence.

Within the first week of the course, please look at the schedule and identify any days on which you need to miss lecture or lab (e.g., interview, religious observance, university-sanctioned event) and notify the instructor in writing as early as possible. When possible, alternative arrangements for completing assignments/quizzes will be made.

In lectures, attendance will be assessed through various means, including sign-in sheets, participation in online polls, and/or completion of practice quizzes and activities. In the event of a recorded lecture, you are responsible to view the lecture in the class.

Grading Scale:

All grades will be awarded based upon the percentage score earned. Because UW – Madison and UW – Stevens Point have different grading scales, grades will be assigned based upon the home campus of the student using the table below:

UW – SP Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	F
Percentage	100-93	92.9-90	89.9-88	87.9-82	81.9-80	79.9-78	77.9-72	71.9-70	69.9-68	67.9-60	<60
UW – Madison Letter Grade	A	A-B		B	B-C		C		D		F

KASA/CFCC REQUIREMENTS

The following table shows the CFCC standards that are covered in this course and indicates how they are assessed.

A passing grade is a B or better. If a student fails to complete any of the tasks listed below with a passing grade, they will work with the course instructor to either redo the task or complete an additional task to demonstrate competency with this task. If a student is not able to complete the task, then an improvement plan will be initiated to remediate the skill in question. See the Au.D student handbook section on improvement plans for further details.

KASA Standard	How the standard is assessed	Course or Lab
IIA. Foundations of Practice		
• A5. Calibration and use of instrumentation according to manufacturers’ specifications and accepted standards	Quiz 6, 9 and Exam.	858
		859
• A7. Applications and limitations of specific audiologic assessments and interventions in the context of overall client/patient management	Quiz 6, 9 and Exam.	
• A14. Assessment of diagnostic efficiency and efficacy through the use of quantitative data (e.g., number of tests, standardized test results) and qualitative data (e.g. standardized outcome measures, client/patient reported measures).	Quiz 6, 9 and Exam.	858
IIB. Prevention and Screening		
• B3. Participating in programs designed to reduce the effects of noise exposure and agents that are toxic to the auditory and vestibular systems.	Quiz 6, 9 and Exam.	858
• B8. Performing developmentally, culturally, and linguistically appropriate hearing screening	Quiz 6, 9 and Exam.	858

procedures across the life span.		
• B14. Evaluating the success of screening and prevention programs using performance measures (i.e., test sensitivity, specificity, and positive predictive value)	Quiz 6, 9 and Exam.	858
IIC. Audiologic Evaluation		
• C1. Gathering, reviewing, and evaluating information from referral sources to facilitate assessment, planning, and identification of potential etiologic factors	Quiz 6, 9 and Exam.	858
• C4. Identifying, describing, and differentiating among disorders of the peripheral and central auditory systems and the vestibular system.	Quiz 6, 9 and Exam.	858
• C11. Selecting, performing, and interpreting physiologic and electrophysiologic test procedures, including electrocochleography, auditory brainstem response with frequency-specific air and bone conduction threshold testing, and click stimuli for neural diagnostic purposes.	Quiz 6 and Exam.	858
• C12. Selecting, performing, and interpreting otoacoustic emissions testing.	Quiz 9 and Exam.	858
• C13. Selecting, performing, and interpreting tests for nonorganic hearing loss	Quiz 9 and Exam.	858
• C15. Selecting, performing, and interpreting tests to evaluate central auditory processing disorder.	Quiz 6, 9 and Exam.	858

Exam Proctoring

Exams and quizzes will be proctored on canvas using HONORLOCK. Students are expected to follow the rules of the quizzes and exams and maintain the highest standards of academic integrity.

Privacy of Student Records and the Usage of Audio Recorded Lectures

<https://registrar.wisc.edu/ferpa/>

See information about privacy of student records and the usage of audio-recorded lectures.

Usage of Audio Recorded Lectures Statement

Lecture materials and recordings are protected intellectual property at UW- Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

Other Course Information

ADDITIONAL COURSE INFORMATION AND ACADEMIC POLICIES

- Follow up-to-date UW-Madison prescribed policies for COVID and other contagious disorders

GENERAL COURSE POLICIES (How to succeed in this course)

Graduate school is a great time to continue refining professional skills that will serve you throughout your career.

- Arrive to class on time
- Bring a willingness to learn and be fully present (avoid doing other things during class)
- Avoid talking amongst yourselves during the class unless instructed to engage in group discussion by the instructor
- Share your own experiences
- Treat others with respect when they are sharing
- Do not video or audio record without instructor permission
- Engage with the course material through quizzes and reach out to the instructor and reader-grader for improve understanding of the course material
- Written work must be your best work. Proof-read before submitting work to check for any errors (e.g., spelling, grammar, punctuation, etc.).
- Points will be deducted for inadequate work. Reach out to the instructor for improvement.
- Turn assignments in on time. Late assignments will attract a penalty unless adequate prior arrangements are made.
- Questions or concerns about course activities, policies, assignments (or anything else) should be referred to the instructor.
- ***Reach out to the instructor on slack or during office hours to clarify concepts***
- Read additional readings beyond what is taught in the course and think deeply about course contents and whenever possible engage the clinical supervisors in constructive discussion about the clinical applicability of the contents learned in the course.
- ***Adapt flexibility in learning. Flexibility in thinking about concepts in the course instead of just memorizing is vital for comprehensive understanding of the course.***

STUDENTS' RULES, RIGHTS & RESPONSIBILITIES

See: <https://guide.wisc.edu/undergraduate/#rulesrightsandresponsibilitiestext>

COURSE EVALUATIONS

UW-Madison uses a digital course evaluation survey tool called [AEFIS](#). For this course, you will receive an official email two weeks prior to the end of the semester, notifying you that your course evaluation is available. In the email you will receive a link to log into the course evaluation with your NetID. Evaluations are anonymous. Your participation is an integral component of this course, and your feedback is important to me. I strongly encourage you to participate in the course evaluation.

ACADEMIC CALENDAR & RELIGIOUS OBSERVANCES

See: <https://secfac.wisc.edu/academic-calendar/#religious-observances>

ACADEMIC INTEGRITY STATEMENT

By virtue of enrollment, each student agrees to uphold the high academic standards of the University of Wisconsin-Madison; academic misconduct is behavior that negatively impacts the integrity of the institution. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these previously listed acts are examples of misconduct which may result in disciplinary action. Examples of disciplinary action include, but is not limited to, failure on the assignment/course, written reprimand, disciplinary probation, suspension, or expulsion.

ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES STATEMENT

The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy ([UW-855](#)) require the university to provide reasonable accommodations to students with disabilities to access and participate in its academic programs and educational services. Faculty and students share responsibility in the accommodation process. Students are expected to inform faculty [me] of their need for instructional accommodations during the beginning of the semester, or as soon as possible after being approved for accommodations. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to provide reasonable instructional and course-related accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA. (See: [McBurney Disability Resource Center](#))

DIVERSITY & INCLUSION STATEMENT

Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.

Usage of Lecture Materials

Lecture materials and recordings for CS&D 858 are protected intellectual property at UW-Madison. Students in this course may use the materials and recordings for their personal use related to participation in this class. Students may also take notes solely for their personal use. If a lecture is not already recorded, you are not authorized to record my lectures without my permission unless you are considered by the university to be a qualified student with a disability requiring accommodation. [Regent Policy Document 4-1] Students may not copy or have lecture materials and recordings outside of class, including posting on internet sites or selling to commercial entities. Students are also prohibited from providing or selling their personal notes to anyone else or being paid for taking notes by any person or commercial firm without the instructor's express written permission. Unauthorized use of these copyrighted lecture materials and recordings constitutes copyright infringement and may be addressed under the university's policies, UWS Chapters 14 and 17, governing student academic and non-academic misconduct.

Course Evaluations

Students will be provided with an opportunity to evaluate this course and your learning experience. Student participation is an integral component of this course, and your feedback is important to me. I strongly encourage you to participate in the course evaluation.

Digital Course Evaluation (AEFIS)

UW-Madison uses an online course evaluation survey tool, AEFIS. In most instances, you will receive an official email two weeks prior to the end of the semester when your course evaluation is available. You will receive a link to log into the course evaluation with your NetID where you can complete the evaluation and submit it, anonymously. Your participation is an integral component of this course, and your feedback is important to me. I strongly encourage you to participate in the course evaluation.