

Communication Sciences and Disorders (CS&D) 863: Implantable Protheses (3 credits)

University of Wisconsin-Madison
Department of Communicative Disorders
Fall Semester, 2019

Location: Goodnight Hall 412 & UWSP Distance Login

Professor Ruth Litovsky
Email: litovsky@waisman.wisc.edu
Office Phone: 262-5045

Lectures: 2:30-4:00pm Wednesday

How do I get help outside of class?

- 1) **Canvas: download material.** Prepare for class, do your reading, review material, prepare for quizzes and exams.
- 2) I can meet with students before or after class; please contact me by email for an appointment.

I have 2 offices on campus. Depending on when we meet. Check in with me about location:

- 1) 378 Goodnight Hall
- 2) 521 Waisman Center, Office Phone 262-5045

Most important:

- I'm delighted to be your teacher this semester. This material is fascinating, and hope you will enjoy learning about the world we hear in.
- Let's build a community of learning and listening, where all students' voices are heard.
- Please feel free to ask any questions at any time.
- Come to class prepared.
- Leave social media out of the classroom and engage with what the class has to offer.

Readings:

Required texts:

- a. Jace Wolfe (2014). Programming Cochlear Implants (Core Clinical Concepts in Audiology). Plural Publishing.
- b. Rene Gifford (2013). Cochlear Implant Patient Assessment: Evaluation of Candidacy, Performance, and Outcomes. Plural Publishing.

Additional Readings (book chapters and original research articles) can be found on Canvas

What else is on Canvas.wisc.edu?

Syllabus, lecture notes, assignments and answer keys, news and general updates

Log in using the following:

Username: your NetID

password: your NetID password

Course Description:

- This is a 2 credit graduate course, which is offered by the Department of Communicative Sciences and Disorders. It is typically taken by students in the AuD program during their 3rd year. The 2 credits are accomplished by attending 100 minutes of lecture per week. Students typically spend 2-3 hours outside of class per credit hour reading, preparing for lecture, studying for exams and quizzes. In addition, students spend numerous hours outside of class researching their topic and preparing the presentation.

Learning Outcomes: Understand basic terminology, concepts, theories, and recent studies pertaining to implantable auditory prostheses.

1. Students will know what are auditory implants?
2. Understand history, background, development of internal and external components.
3. Understand patient candidacy and outcomes.
4. Attain knowledge and basic background in programming philosophy and overview.
5. Learn basics regarding use of objective measures.
6. Choose a topics in the field and study that topic in preparation for a professional presentation

Course Policies:

- Class attendance is mandatory, unless students provide a reasonable explanation for missing class. Students are asked to provide the professor with advanced notice of planned absences via email. Students are required to make up material presented during missed class periods.
- If you observe religious holidays that conflict with course activities and wish to reschedule assignments or tests that may conflict with such an observance, please notify the instructor no later than two weeks after the beginning of the semester.

Policies that ensure courtesy to other students:

- **Students are here to learn. Please be respectful of this. Avoid side conversations during class. It's not only disruptive to other students, but to the instructor as well.**
- **If you own a mobile phone make sure it's turned off before class.**
 - Do NOT use text messaging, IM, email, social networking, etc., during class.
 - If you must do so, please leave the room first.
- **Laptop computer or electronic pads may be used during class to take notes.**

Accommodation: If you are a student with a documented disability and wish to discuss academic accommodations to complete reading or written assignments, examinations, quizzes, or oral reports, you must contact the instructor within the first two weeks of the semester to discuss your needs. Please have the McBurney Resource Center email documentation to me as per their newer practice, if you have been granted such documents. For further information please visit: <https://mcburney.wisc.edu/>

Academic Integrity:

- **Students must adhere to the rules and regulations as stated on the UW Madison website (see <http://students.wisc.edu/doso/acadintegrity.html>).**
- **Academic honesty and integrity are fundamental to the mission of higher education and of the university of Wisconsin system.**
- **There is zero tolerance for academic misconduct.**

Grading: Grading is based on performance on 2 exams, 3 quizzes and 1 presentation.

The total number of points that can be earned equal 400

The final grade will consist of the percentage of points out of 400, as follows:

UW Madison

A = 94-100%, **AB** = 89-93%, **B** = 84-88%, **BC** = 79-83%, **C** = 70-78%, **D** = 60-69%, **F** = 59% or less.

UW Stevens Point

A = 94-100, **A-** = 91-93, **B+** = 89-89, **B** = 84-88, **B-** = 81-83, **C+** = 79-80, **C** = 70-78, **D** = 60-69, **F** = 59 or less.

Exams: Two exams will be given during the semester. Each one is worth up to 100 points (200 points total).

Quizzes: 2 quizzes will be given during the semester, each one worth 50 points (100 points total). Quizzes are intended to help students stay organized and focused on the material, and will assist students in anticipating material that will show up on the exams. They will be graded and returned to students through Canvas.

Essay: 1 essays will be required (50 points)

Students will view a video related to CIs and deafness, and are asked to write a 3 page thoughtful piece, and to submit via Dropbox.

'Between sound and silence' - Are the patients in the movie clip deaf, hearing impaired, or neither?

Presentation: 1 presentation at the end of the semester per student (50 points).

Presentation:

During the last 3 weeks of the semester, students will give a 15-minute presentation. Each presentation will be based on a topic that the instructor approves in advance. The presentations are intended to focus on novel findings and outcomes with new programming or coding strategies in patients who use one of the following:

- 1) bone-anchored hearing aids,
- 2) middle ear implants,
- 3) cochlear implants
- 4) hybrid (cochlear implant + hearing aid)
- 5) single sided deafness (cochlear implant + normal ear)
- 6) brainstem implants.

****Websites you should spend time exploring:***

<http://www.cochlearamericas.com/>

<http://www.advancedbionics.com/us/en/home.html>

Course Format:

Lectures, participation in discussion, presenting at the end of the semester. Students are responsible for all material covered in class and for all reading assignments. Students are encouraged to ask questions and participate in class discussion.

COURSE SCHEDULE

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| <p><u>Course Meeting Dates</u></p> <p>9/4, 9/11, 9/18, 9/25, 10/2, 10/9, 10/16, 10/23, 10/30, 11/6, 11/13, 11/20, [No class 11/28 – Thanksgiving], 12/4, 12/11</p> <p>Also mark your calendars for: 10/23 5-9pm in the evening – temporal bone lab in UW hospital</p> <ul style="list-style-type: none"> • Exam 1: Take-home during the week of 10/30 • Exam 2: Take-home during finals week |
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| Date | Topics Covered | Readings |
|--------------------------------------|---|---|
| Anytime in first 4 weeks of semester | Between Sound and Silence: https://www.nytimes.com/2018/08/07/opinion/deafness-cochlear-implants.html | Assignment: Write a ~3 page essay. Are the patients in the movie deaf, hearing impaired, or neither? Thoughts about treatment with CIs, future possibilities. |
| 9/4 | - Impact of deafness on the auditory system - Overview of CIs - Hair Cell Regeneration | Butler and Lomber (2013) Svirsky (2017) article in Physics Today Rubel et al. (2013) |
| 9/11 | - History of CIs - Electrical stimulation complications - Basics in CIs | Wilson and Dorman (2008) Jeppesen and Faber (2013) **W and S (2014), Ch. 1-2 |
| 9/18 | - BAHA, Middle ear implants, - SSD Auditory Brainstem Implants | <i>Niparko et al. 2013</i> |
| 9/25 | - Candidacy and Outcomes | Niparko studies (Eisenberg et. al.) Holden et al (2013), outcome adults Gaylor (2013) JAMA Meta analysis |
| 10/2 | - Bimodal fittings Sara Misurelli, PhD, AuD | Lenarz et al (2014) Hybrid Gantz et al. (2016) Hybrid |
| 10/9 | Presentation on pediatric evaluation, candidacy and mapping. Melanie Buhr-Lawler, AuD CCC | <i>See Canvas</i> |
| 10/16 | Presentation on surgical approaches Joseph Roche, MD | |
| 10/23 | EVENING – SPECIAL CLASS | <i>Chapter by Francis on ‘Anatomy of the</i> |

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|-------|---|-----------------------|
| | Temporal bone lab. 5-9pm UW Clinical Sciences Center K4/745 CSC | <i>temporal bone'</i> |
| 10/23 | Presentation by Cochlear rep. Courtney Wallace | See Canvas |
| 10/30 | Presentation by Med-EI rep. Susan Trouba | See Canvas |
| 11/6 | Presentation by Advanced Bionics rep. Melanie Vanden Heuvel | See Canvas |
| 11/13 | Presentation on candidacy, evaluation and programming of older adults. Jennifer Ploch, AuD CCC - | See Canvas |
| 11/20 | Student Presentations | See Canvas |
| 11/28 | No Class – take home assignment | |
| 12/4 | Student Presentations | See Canvas |
| 12/11 | Student Presentations | See Canvas |