

University of Florida
College of Public Health & Health Professions Syllabus
Course Title: SPA 0001 - Introduction to Cochlear Implants

Credits: 3 Credit hours

Format: Face-to-face

Pre-requisites: None required

Academic term: Spring

Meeting times: Tuesday 12:50 pm - 3:50 pm



Instructor: Hollea Ryan, Au.D., Ph.D., CCC-A
Room Number: HPNP G111
Course Time: Tuesdays, Period 6-8 (12:50 PM to 3:50 PM)
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Office Hours: Mondays virtually (<https://ufl.zoom.us/j/8048190176>)
Thursdays, 2PM – 3PM or by appointment - TBD

Teacher Assistant: Melanie Orr, 2nd Year Au.D. Student

TA Email Address: orr.melanie@ufl.edu

TA Phone number: 321-506-9867

Preferred Course

Communications: Email

Course description

This course for first-year Au.D. students covers cochlear implants, including candidacy, programming strategies, outcomes, and new technologies. It equips future audiologists with essential knowledge and practical skills for treating patients with hearing loss. The course aims to enhance clinical practice and improve patient outcomes through comprehensive, hands-on learning.

Relation to Program Outcomes

This course aligns with CCC-A Standard IV by addressing critical areas such as the impact of hearing loss on communication and psychological functioning (A7), understanding diverse patient characteristics (A9), and applying psychometric and psychoacoustic principles (A11, A12). It also covers the measurement of electric stimuli (A14), integration of assistive technology (A15), and research methodologies, including experimental design and statistical analysis (A18). By providing this foundational knowledge of cochlear implants, the course ensures students obtain vital skills for effective patient care and advanced technology use, satisfying program requirements and preparing students for clinical practice and research.

Course Objectives

The SPA 0001 students will demonstrate clinical skills in the areas of:

Recognizing baseline parts and pieces of a cochlear implant COMPREHENSION BLOOMS

Recognizing operations of how a cochlear implantation uses electrodes to send “sound” signals to the patient’s brain COMPREHENSION BLOOMS

Differentiating highlights of how cochlear implant programming uses different software techniques so that the best programming for the patient will be chosen ANALYSIS BLOOMS

Justifying different signal coding strategies and why one may be chosen over the other for patient’s best fit ANALYSIS BLOOMS

Legitimizes differing patient candidacy situations and why they may fit for a cochlear implant
ANALYSIS BLOOMS

Distinguishing advantages of cochlear implants so that students may determine how this could affect a patient
ANALYSIS BLOOMS

Distinguishing obstacles of cochlear implants so that students may determine how this could affect a patient
ANALYSIS BLOOMS

Determine, discuss, and magnify other implantable devices for a patient that may be a candidate for options aside from cochlear implants (auditory brainstem implants)
ANALYSIS BLOOMS

Examines possible cochlear implant outcomes and how this would affect a patient
ANALYSIS BLOOMS

Conducting a real-life clinical by participating in cochlear implant focused real life patient scenario such as a CI evaluation appointment to use a treatment plan for the patient and what the best option is for them
SYNTHESIS BLOOMS

Instructional Method

Weekly lectures, readings, typed out weekly summaries of the previous lecture, student group games and presentations, and instructional resources in the form of research journals, videos and more provided in Canvas. Students will meet learner needs by implementing these instructional methods throughout the course to successfully engulf what a cochlear implant is, how it works, and how students as future clinicians may use this knowledge by translating it to clinic and be cognizant of how this information and cochlear implant plan for patients affects them during cochlear implant appointments as well as out in the real world.

Course Materials and Technology

Textbook: Wolfe, J. (2018). Cochlear Implants: Audiological management and considerations for implantable hearing devices. San Diego, CA: Plural Pub

Weekly Course Schedule

Week	Dates	Agenda	Assignments
1	1/7/25	Introduction to Course (Names and favorite memory with friends) Review of Anatomy and Physiology of CI - (Ch 3)	
2	1/14/25	Basic Operation and History of CI	Week 1 summary

		Technology - (Ch 1)	
3	1/21/25	<p>Physics & Electronics of CIs - (Ch 2)</p> <p>Headbands activity with CI parts, pieces, & history - (Ch 1 & 2)</p> <p>Student survey & peer review handouts</p>	<p>Week 2 summary</p> <p>Student survey & peer review handouts due</p>
4	1/28/25	<p>CI Candidacy / Outcome - (Ch 4, 5, & 6)</p> <p>Blue tabs 1 – The Deaf Community: pg. 35-42</p> <p>2 – Stigma: pg. 123-131</p>	Week 3 summary
5	2/4/25	<p>Time to work on skit project in class</p> <p>Blue tabs 1 – Candidacy Evaluation: pg. 12-24</p> <p>2 – Options in Implant Devices: pg. 25-40</p> <p>Orange tabs 1 – Surgical stage: pg. 41-48</p>	Week 4 summary
6	2/11/25	<p>Basic Terminology of CI Programming - (Ch 7)</p> <p>Factor Affecting Outcomes - (Ch 21 & 22)</p> <p>Benefits and limitations of CIs</p> <p>Review for Midterm</p>	Week 5 summary
7	2/18/25	Midterm Exam	Week 6 summary
8	2/25/25	<p>Midterm Exam Review</p> <p>CI Signal Coding Strategies - (Ch 8 & 9)</p>	

9	3/4/25	<p>CI Signal Coding Strategies Continued - (Ch 10 & 11)</p> <p>Blue tabs 1 – Dara’s Story: pg. 68-71</p> <hr/> <p>2 – Jackie’s Story: pg. 102-106</p> <hr/> <p>3 – Ryan’s Story: pg. 234-243</p>	Week 8 summary
10	3/11/25	<p>Group project clinical skit presentation day</p> <p>Students will fill out peer review handouts during classmates’ presentations and surveys after all have presented</p>	<p>Week 9 summary</p> <p>Group project clinical skit presentations due</p> <p>Student presentation peer review handouts & surveys due</p>
11	3/18/25	No Class Spring Break Week	
12	3/25/25	<p>Bimodal vs Bilateral vs Hybrid – (Ch 24)</p> <p>Single Sided Deafness</p>	
13	4/1/25	<p>Orange tabs 1 – The CI Reality: pg. 59-70</p> <hr/> <p>2 – Here be dragons: pg. 101- 114</p> <hr/> <p>Blue tabs 1 – Sound of water: pg. 73-84</p> <hr/> <p>2 – Sound to Silence to Sound: pg. 155-163</p> <hr/> <p>ABIs – (Ch 25)</p> <p>& Other Implantable Devices – (Ch 26 & 28)</p>	Week 12 summary

14	4/8/25	Group project game (Play groups games to review for final during class time) Fill out student survey & peer review handout	Week 13 summary Group Project game due Student survey & peer review handout due
15	4/15/25	Final Exam review Cochlear Implant Company Summary	Cochlear Implant Company Summary Due
16	4/22/25	Final Exam	

Assessment of Learning:

Assessment 1: Headbands activity with CI parts, pieces, & history with student survey

Students will create several pictures of various cochlear implant parts and the history of CIs. After 10 - 20 of these cards are made the class would partner up, one partner will place a card on the head and partners will take turns trying to guess what cochlear implant part or concept is on their head. This will occur by the partner with the card on their head asking questions and the other partner having to answer these questions so the partner with the card on their head can get closer to guessing what the card is. The other partner can give hints and describe things to the person who is wearing the card on their head if extra help is needed. This is an involved activity that would help students recall important parts of class as well as keeping them engaged and having fun. Students must create 10 – 20 cards during class time and use the rest of class time to play the game. Students must record which cards they created to determine equal distribution of work. After class time to play the headband game students will complete a survey indicating if this activity was helpful or not.

Assessment 2: Midterm**

Students will take a standardized exam regarding the topics of: Basic Operation and History of CI, Technology - (Ch 1), Physics & Electronics of CIs - (Ch 2), Review of Anatomy and Physiology of CI - (Ch 3), CI Candidacy / Outcome - (Ch 4, 5, & 6), Basic Terminology of CI Programming - (Ch 7), Factor Affecting Outcomes - (Ch 21 & 22), Benefits and limitations of CIs. Will contain multiple choice, True/False, fill in the blank questions.

Assessment 3: Group project clinical skit presentation day with student survey

The next collaborative idea is skits. The skits will be incorporated into the final project but will be completed earlier on before the midterm so students can get a comfortable feel for what the final project entails. Each student will split up into a few groups and come up with a fun skit that

shows how a chosen device company (i.e., Advanced Bionics, Cochlear, or MedEL) would pitch their latest device to the audience. If students would like to first incorporate a skit that entails what NOT to do, they may. The skit could include a scenario where an audiologist may be explaining the newest device to a cochlear implant candidate and how it works. These skits can be goofy, serious, abstract, anything the students want to do that is appropriate and able to be defended after any other student or instructor has questions or wants further explanation on the skit/pitch. Students must perform for at least about 3-5 minutes each for a total time of 9-15 minutes for the skit. Whether a group member is a patient, audiologist, company rep, family member, student, etc. The students will document how they evenly distributed work/performance for the professor to determine equal distribution of work. Skits/roleplaying introduce the importance of clinically implementing how these cochlear implant devices function as well as knowing them well enough to vouch for them to a patient or others. Everyone's skit may have different aspects that help learners remember and understand certain devices and concepts that they did not understand before on their own. Students will fill out peer review surveys during presentations as well as assignment surveys after all presentations are completed.

Assessment 4: Group projects create your own study game with student survey

The final collaborative activity would be the class splitting up into two groups and creating their own game of how to practice memorizing/understanding the cochlear implant devices and processes or other topics within the course regarding all the topics learned thus far. This gives students full creativity and responsibility to use their imagination on what a beneficial game would be for other students to play with the goal of aiding topic memorization and understanding. Students will document what their role was in the creation of the game for the professor to determine equal distribution of work.

Assessment 5: Final exam**

Students will take a standardized exam regarding the topics of: Basic Operation and History of CI, Technology - (Ch 1), Physics & Electronics of CIs - (Ch 2), Review of Anatomy and Physiology of CI - (Ch 3), CI Candidacy / Outcome - (Ch 4, 5, & 6), Basic Terminology of CI Programming - (Ch 7), Factor Affecting Outcomes - (Ch 21 & 22), Benefits and limitations of CIs, CI Signal Coding Strategies - (Ch 8 & 9), CI Signal Coding Strategies Continued - (Ch 10 & 11), Bimodal vs Bilateral vs Hybrid – (Ch 24), Single Sided Deafness, ABIs – (Ch 25), & Other Implantable Devices – (Ch 26 & 28). Will contain multiple choice, True/False, fill in the blank, and essay questions.

Assessment 6: Weekly Summaries*

Students will type out summary of what they learned during that class period/ lecture. Summaries will be a page long and due on a weekly basis.

Assessment 7: Cochlear Implant Company Summary

Students will be randomly assigned to one of three groups, each tasked with researching a specific cochlear implant company: Advance Bionics, Cochlear Limited, or Med-EL. Each group is expected to provide a detailed write-up that includes an overview of the company's history, including its founding, the organization behind the device's creation, and the timeline of product approvals, particularly in the U.S. The write-up should also include a timeline of the company's products, both internal and external components, with descriptions of each device's features such as style, color options, battery types, safety features, and compatibility with assistive listening devices. In addition, groups must explain the candidacy criteria for the devices, methods used to validate electrode and CI function, and any specific device configurations (e.g., for single-sided deafness or bilateral implantation). They must also discuss whether any devices have been recalled, the issues that led to recalls, and how the company resolved them. Finally, groups should highlight what sets their assigned company's cochlear implants apart from other brands in the U.S. market. The completed project should offer a comprehensive understanding of the company's products, including their history, technical features, and market presence.

Assignment 8: Story/Topic Presentations

Students are required to choose one story or topic from the provided books for a brief class presentation. The presentation should last around 3-5 minutes, with a maximum time limit of 5 minutes. Students will present on the dates specified in the syllabus. It is recommended that students form groups to take the book home together or plan a time to meet in the library to read the assigned story and prepare for the presentation. Students must write their name next to the chosen story or topic they plan to present.

The effectiveness of each assessment will be measured/calculated as follows:

Activity one, three, and four will be evaluated through student feedback. To determine the success of activities, a survey handout will be utilized. The survey handout will consist of yes, no, maybe, and extra comment answers. Students will provide their feedback for eight questions regarding how the student felt the assignment went for them and if they accurately aligned with the course objectives. After the students have completed each assessment and the surveys, I will give them one final survey for them to determine which of the three assignments was the most beneficial to them as well as which assignment was the least beneficial to them and why so we can further progress group projects positively. Lastly final grades of the midterm and final would be compared in correlation to each activity completed. The skit would be completed before the midterm and the create your own game would be completed before the final. We would determine which grades students scored the highest, and its correlation to student preference. These steps will provide important data that benefit future Introduction to Cochlear Implant courses.

- ***Indicates Formative Assessments: data collected by the AuD Program to document student understanding of material covered at a “low stakes” level. Feedback is provided as appropriate.**

- ****Summative Assessment: data collected by AuD Program to document student cumulative mastery of material.**

Evaluation of Grades

Assessment	Due date	Percentage of Final Grade
1: Headband game with survey	1/21/25	5%
2: Midterm	2/11/25	20%
3: Skit with survey	3/11/25	15%
4: Create your own game with survey	4/8/25	10%
5: Final	4/22/25	25%
6: Weekly Summaries	Weekly	5%
7: Cochlear Implant Company Summary	4/15/25	20%
8: Story/Topic Presentations	Varies	5%
Total		100%

Grading Policy

Percent	Grade	Grade Points
93.0-100.0	A	4.00
90.0-92.9	A-	3.67
87.0-89.9	B+	3.33
83.0-86.9	B	3.00
80.0-82.9	B-	2.67
77.0-79.9	C+	2.33
73.0-76.9	C	2.00
70.0-72.9	C-	1.67
67.0-69.9	D+	1.33
63.0-66.9	D	1.00
60.0-62.9	D-	0.67
0-59.9	E	0.00

Make up Work

Make-up exams are generally not offered. However, if a student misses an exam or assignment due to a documented medical issue or family emergency, a doctor's note or appropriate documentation will be required. Students are strongly encouraged to plan ahead and make arrangements to complete missed work or assignments as early as possible. For technical issues, students must provide the ticket number issued by LSS when the problem was reported, which will document the time and date of the issue. To request a make-up, students must email the

professor within 24 hours of the difficulty. Any work submitted after the due date (with the exception of approved excused absence), will result in a 5% decrease in the grade, per day, for up to 3 days, after which, the assignment will no longer be accepted.

Class Attendance

Students are expected to attend all class sessions. It is their responsibility to catch up on any missed content by obtaining notes and other relevant information from classmates. Any assignments completed during class will be assigned a grade of zero unless prior arrangements are made or there is documentation of an excused absence. Additionally, students are still required to submit any previously assigned activities or assignments through Canvas for the day they missed, unless a documented excuse is provided. In these cases, students will have 24 hours from the end of the “excused” date on the doctor’s note, or from the missed class period if not a medically approved absence, to submit the assignment.

Course Behavior

Students are expected to actively participate in class discussions and contribute thoughtfully. It is important to allow space for others to speak and share their ideas. Disruptive behaviors, such as using cellphones or dominating the conversation, should be avoided. Laptops may be used as long as their usage is related to class discussions, materials, and activities. The teacher reserves the right to require all electronics to be turned off during class should she find them to be distracting and/or disruptive.

Communication Guidelines

Emails are preferred communication. Students must utilize appropriate etiquette in all in person and online communication opportunities. Appropriate communication guide for additional information from UF is linked below:

<http://teach.ufl.edu/wp-content/uploads/2012/08/NetiquetteGuideforOnlineCourses.pdf>

Student Support Services

Academic expectations and personal challenges can sometimes create stress that affects a student's performance. If you are experiencing difficulties that may or already are impacting your coursework, we encourage you to reach out to an instructor and/or utilize the various support resources available through the University.

Counseling and Wellness Center (352-392-1575): Offers psychological assessment, intervention, and support for issues such as math and test anxiety. For more information, visit their website: www.counseling.ufl.edu. Both online and in-person assistance are available.

You Matter, We Care: If you're feeling overwhelmed or stressed, visit the You Matter We Care website at www.umatter.ufl.edu. This resource, managed by the Dean of Students and Counseling Center staff, provides support for students in distress.

Student Health Care Center at Shands: Located on the second floor of the Dental Tower in the Health Science Center, this clinic offers a variety of medical services. For more information, contact them at 392-0627 or visit <https://shcc.ufl.edu>.

Crisis Intervention: Immediate support is available 24/7 through the Alachua County Crisis Center at (352) 264-6789. For more details, visit Crisis Center Website.

Quick Reference Contacts

You Matter, We Care: For help, contact umatter@ufl.edu or call 352-392-1575. More information is available at www.umatter.ufl.edu.

Counseling and Wellness Center: www.counseling.ufl.edu or call 352-392-1575.

University Police Department: For emergencies, dial 392-1111 or 9-1-1. Visit www.police.ufl.edu.

Sexual Assault Recovery Services (SARS): Contact the Student Health Care Center at 392-1161.

Don't wait until a crisis occurs to seek help. Many students have faced stressful situations that impacted their academic performance, and you are not alone. There is no shame in asking for assistance when needed.

Academic Resources

If you need academic support, there are several resources available to help you:

E-Learning Technical Support: For assistance with e-learning issues, call 352-392-4357 (select option 2) or email Learning-support@ufl.edu.

Career Resource Center: Located at the Reitz Union, the center offers career counseling and job search support. Call 352-392-1601 for more Information.

Library Support: Assistance is available for finding resources or using the libraries.

Teaching Center: Located in Broward Hall, the center offers tutoring and study skills support. Contact 352-392-2010 or 352-392-6420 for more information.

Writing Studio: Located at 302 Tigert Hall, the Writing Studio helps with brainstorming, formatting, and writing papers. Call 352-846-1138 for assistance.

Student Complaints

For online student complaints, visit the appropriate campus resources or contact studentcomplaints.ufl.edu.

Remember, it's important to seek support early to address any academic or personal challenges you may face.

Inclusive Environment

Public health and health professions are founded on the principles of human dignity and respect for the individual. In both classroom settings and beyond, we share our personal beliefs with the understanding that we value and respect the diversity of backgrounds, experiences, and opinions, ensuring that every individual feels acknowledged. We are committed to fostering an environment of openness and tolerance, recognizing and respecting differences in ethnicity, culture, personal beliefs, spirituality, religion, and political views. We also believe that celebrating such diversity enhances the quality of our educational experiences and strengthens our personal and professional relationships.

We fully support The University of Florida's Non-Discrimination Policy, which states: "The University shall actively promote equal opportunity policies and practices conforming to laws against discrimination. The University is committed to non-discrimination with respect to race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information, and veteran status as protected under the Vietnam Era Veterans' Readjustment Assistance Act." If you have questions or concerns about your rights and responsibilities in fostering an inclusive learning environment, please consult your instructor or visit the Office of Multicultural & Diversity Affairs website: www.multicultural.ufl.edu.

The UF Audiology Program, along with this instructor, strives to create a safe and respectful space where students can learn both independently and collaboratively. Additionally, ASHA and AAA Ethics require that we always interact with patients and colleagues in a professional manner. While differing opinions and beliefs are natural, it is essential that we maintain respectful interactions with patients and peers. As such, the instructor expects all students to contribute positively to the learning environment. Any student who deliberately disrupts the class, through words, actions, attitudes, or behavior, may be asked to leave the session, receive a grade of "zero" for that day's activity, and/or be referred to the Dean of Students for potential harassment.