

## ***Cochlear Implants 1***

SPA 6581 Section 17289

***Class Periods:*** Wednesday, 12:50 pm – 3:50 pm (periods 6-8)

***Delivery Format:*** on-campus

***Location:*** HPNP G110

***Academic Term:*** Spring 2023

***Credits:*** 3 credit hours



### ***Instructor***

Name: Hollea Ryan, Au.D., Ph.D., CCC-A

Email Address: [hollea.ryan@p.php.ufl.edu](mailto:hollea.ryan@p.php.ufl.edu)

Office Phone Number: 352-273-9716

Office Hours: Tuesdays, 4 pm – 5 pm in HPNP 2135 or by appointment

### ***Course Description***

This course covers the fundamental and applied principles in cochlear implants including: candidacy, programming considerations, outcomes, signal coding strategies, and other new technology options for individuals with hearing loss.

### ***Course Pre-Requisites / Co-Requisites***

No course pre-requisites.

### ***Instructional Method***

Lectures, readings, instructional videos, student presentations, and resources provided in Canvas.

## **Course Objectives**

Students will demonstrate knowledge of:

- Functional and physiological operation of cochlear implantation
- Protocol and terminology of cochlear implant programming
- Various signal coding strategies including cochlear implant simulation
- Benefits and limitations of cochlear implants.
- Pediatric/adult candidacy, outcomes, and factors affecting outcomes
- Psychophysical studies with cochlear implant patients

## **Relation to Program Outcomes**

*The content of this course is designed to allow you to fulfill the following CCC-A Standard IV: Knowledge and Skills Outcomes.*

### **Standard IV-A: Foundations of Practice**

*A7. Effects of hearing loss on communication and educational, vocational, social, and psychological functioning*

*A9. Patient characteristics (e.g., age, demographics, cultural and linguistic diversity, medical history and status, cognitive status, and physical and sensory abilities) and how they relate to clinical services*

*A11. Principles, methods, and applications of psychometrics*

*A12. Principles, methods, and applications of psychoacoustics*

*A14. Physical characteristics and measurement of electric and other non-acoustic stimuli*

*A15. Assistive technology*

*A18. Principles and practices of research, including experimental design, statistical methods, and application to clinical populations*

## **Materials and Supply Fees**

None.

## **Required Textbooks and Software**

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

## **Attendance Policy, Class Expectations, and Make-Up Policy**

State whether attendance is required and if so, how will it be monitored? What are the penalties for absence, tardiness, cell phone policy, laptop policy, etc. What are the arrangements for missed homework, missed quizzes, and missed exams? This statement is required: Excused absences must be consistent with university policies in the [Graduate Catalog](#) and require appropriate documentation. Additional information can be found in [Attendance Policies](#).

## Course Schedule

Week	Date(s)	Agenda/Topic(s)	Assignments Due
1	1/11/2023	<ul style="list-style-type: none"> <li>Course Introduction</li> <li>Basic Operation and History of CI Technology (Ch1)</li> <li>Physics and Electronics of CI (Ch2)</li> </ul>	
2	1/18/2023	<ul style="list-style-type: none"> <li>Anatomy and Physiology Associated with CI (Ch3)</li> <li>Medical and Surgical Aspects of CI (Ch12)</li> </ul>	<ul style="list-style-type: none"> <li>Week 1 summary</li> </ul>
3	1/25/2023	<ul style="list-style-type: none"> <li>Article Presentation - Medical &amp; Surgical article</li> <li>Basic Terminology of CI Programming (Ch7)</li> <li>CI Signal Coding Strategies (Ch8, 9, 10, 11)</li> </ul>	<ul style="list-style-type: none"> <li>Week 2 summary</li> <li>Peer Review</li> </ul>
4	2/1/2023	<ul style="list-style-type: none"> <li>Article Presentation - Signal Coding article</li> <li>CI Candidacy / Outcome (Ch4, 5, 6)</li> <li>Factor Affecting Outcomes (Ch21, 22)</li> </ul>	<ul style="list-style-type: none"> <li>Week 3 summary</li> <li>Peer Review</li> </ul>
5	2/8/2023	<ul style="list-style-type: none"> <li>Article Presentation - Candidacy &amp; Outcome article</li> <li>Speech Processing Strategies</li> </ul>	<ul style="list-style-type: none"> <li>Week 4 summary</li> <li>Peer Review</li> </ul>
6	2/15/2023	<ul style="list-style-type: none"> <li>Article Presentation - Speech Processing Strategies</li> <li>Benefits and limitations of cochlear implants</li> <li>Midterm Review</li> </ul>	<ul style="list-style-type: none"> <li>Week 5 summary</li> <li>Peer Review</li> </ul>
7	2/22/2023	<ul style="list-style-type: none"> <li><b>Midterm Exam</b></li> </ul>	<ul style="list-style-type: none"> <li>Week 6 summary</li> </ul>
8	3/1/2023	<ul style="list-style-type: none"> <li>Midterm Exam Review</li> <li>Article Presentation - Benefits &amp; Risks article</li> <li>Psychophysical studies: Place information</li> </ul>	<ul style="list-style-type: none"> <li>Peer Review</li> </ul>

9	3/8/2023	<ul style="list-style-type: none"> <li>Article Presentation - Place Information article</li> <li>Psychophysical studies: Temporal Information</li> </ul>	<ul style="list-style-type: none"> <li>Week 8 summary</li> <li>Peer Review</li> </ul>
10	3/15/2023	<ul style="list-style-type: none"> <li><b>No Class (Spring Break)</b></li> </ul>	
11	3/22/2023	<ul style="list-style-type: none"> <li>Article Presentation - Temporal Information article</li> <li>Psychophysical studies: Intensity Information</li> </ul>	<ul style="list-style-type: none"> <li>Week 9 summary</li> <li>Peer Review</li> </ul>
12	3/29/2023	<ul style="list-style-type: none"> <li>Article Presentation - Intensity Information</li> <li>Psychophysical studies: Non-speech perception</li> </ul>	<ul style="list-style-type: none"> <li>Week 11 summary</li> <li>Peer Review</li> </ul>
13	4/5/2023	<ul style="list-style-type: none"> <li>Article Presentation - Non-speech Perception article</li> <li>Psychophysical studies: Speech perception</li> </ul>	<ul style="list-style-type: none"> <li>Week 12 summary</li> <li>Peer Review</li> </ul>
14	4/12/2023	<ul style="list-style-type: none"> <li>Psychophysical studies: Music perception (recorded)</li> <li><b>Dr. Ryan @ CAPCSD</b></li> </ul>	<ul style="list-style-type: none"> <li>Week 13 summary</li> </ul>
15	4/19/2023	<ul style="list-style-type: none"> <li>Final Review (recorded; Socrative)</li> <li><b>Dr. Ryan @ AAA</b></li> </ul>	
16	4/26/2023	<ul style="list-style-type: none"> <li><b>Final</b></li> </ul>	

**\*Review the weekly agenda and all materials and readings each week prior to class.**

*Please note: The instructor reserves the right to change the schedule of the course and the topics. The above schedule of weekly topics is subject to change depending upon availability of guest lecturers and unforeseen circumstances.*

### ***Evaluation of Grades***

<b><i>Requirement</i></b>	<b><i>Due Date</i></b>	<b><i>Percentage of Final Grade</i></b>
Midterm exam	3/1/23	25%
Final exam	4/26/23	25%
Article review & presentation	Varies; see canvas	20%
Weekly topic summary	Varies; see canvas	20%
Weekly peer review rating	Each day of presentations	10%
		100%

### **Grading Policy**

The following is given as an example only.

<b>Percent</b>	<b>Grade</b>	<b>Grade Points</b>
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

More information on UF grading policy may be found at:

[UF Graduate Catalog](#)  
[Grades and Grading Policies](#)

### **Exam Policy**

The final exam is non-cumulative; however, students will have needed to master concepts presented earlier in class to be successful on the final exam. Exams will be given in class in paper and pencil format. Exams are closed book will be administered and proctored by the course instructor or designee.

If you are sick on the date of an exam, you must email the instructor before the class begins, and provide a note from a doctor per the UF policies on excused absences. If you know in advance you will be absent for a particular exam, please let the instructor know before you go to set up a time to take the exam before the next class.

### **Policy Related to Make up Exams or Other Work**

In general make-up exams will not be given. Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from LSS when the problem was reported to them. The ticket number will document the time and date of the problem. You MUST e-mail me within 24 hours of the technical difficulty if you wish to request a make-up.

### **Policy Related to Required Class Attendance**

Attendance and Participation: Students are expected to be present for all class sessions. Students are responsible for all content covered during the class and should seek notes and other details from fellow students for the date missed. Any assignment completed as part of class (i.e., peer-review), without prior arrangements or documentation of an excused absence, will convert to a grade of "zero". Students are still expected to submit via Canvas any previously assigned activities or assignments due on the missed class day.

Excused absences must be consistent with university policies in the Graduate Catalog (<http://gradcatalog.ufl.edu/content.php?catoid=10&navoid=2020#attendance>) and require appropriate documentation.

## STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

### *Expectations Regarding Course Behavior*

Students are expected to participate and engage actively in class discussions. Students are expected to contribute to class discussions, and offer time for others to speak. Students are expected to not engage in disruptive activities (i.e., using a cellphone in class, dominating the conversation). Laptops are permitted provided that their use is relevant to class discussions, materials, and sessions.

### *Communication Guidelines*

Please make sure you utilize appropriate etiquette in all in person and online communication opportunities. Please see this guide for additional information:

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

### *Academic Integrity*

Students are expected to act in accordance with the University of Florida policy on academic integrity. As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge:

**“We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.”**

You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied:

**“On my honor, I have neither given nor received unauthorized aid in doing this assignment.”**

It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For additional information regarding Academic Integrity, please see Student Conduct and Honor Code or the Graduate Student Website for additional details:

<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>  
<http://gradschool.ufl.edu/students/introduction.html>

Please remember cheating, lying, misrepresentation, or plagiarism in any form is unacceptable and inexcusable behavior.

### *Online Faculty Course Evaluation Process*

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

## ***Policy Related to Guests Attending Class***

Only registered students are permitted to attend class. However, we recognize that students who are caretakers may face occasional unexpected challenges creating attendance barriers. Therefore, by exception, a department chair or his or her designee (e.g., instructors) may grant a student permission to bring a guest(s) for a total of two class sessions per semester. This is two sessions total across all courses. No further extensions will be granted. Please note that guests are **not** permitted to attend either cadaver or wet labs. Students are responsible for course material regardless of attendance. For additional information, please review the Classroom Guests of Students policy in its entirety. Link to full policy:

<http://facstaff.phhp.ufl.edu/services/resourceguide/getstarted.htm>

## ***Students Requiring Accommodations***

If you require classroom accommodation because of a disability, it is strongly recommended you register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class or as soon as you believe you might be eligible for accommodations. The Dean of Students Office will provide documentation of accommodations to you, which you must then give to me as the instructor of the course to receive accommodations. Please do this as soon as possible after you receive the letter. Students with disabilities should follow this procedure as early as possible in the semester. The College is committed to providing reasonable accommodations to assist students in their coursework.

## ***Software Use***

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

## ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights](#).

## ***Campus Resources:***

### **Health and Wellness**

Students sometimes experience stress from academic expectations and/or personal and interpersonal issues that may interfere with their academic performance. If you find yourself facing issues that have the potential to or are already negatively affecting your coursework, you are encouraged to talk with an instructor and/or seek help through University resources available to you.

- The Counseling and Wellness Center 352-392-1575 offers a variety of support services such as psychological assessment and intervention and assistance for math and test anxiety. Visit their web site for more information: <http://www.counseling.ufl.edu>. On line and in person assistance is available.
- You Matter We Care website: <http://www.umatter.ufl.edu/>. If you are feeling overwhelmed or stressed, you can reach out for help through the You Matter We Care website, which is staffed by Dean of Students and Counseling Center personnel.
- The Student Health Care Center at Shands is a satellite clinic of the main Student Health Care Center located on Fletcher Drive on campus. Student Health at Shands offers a variety of clinical services. The clinic is located on the second floor of the Dental Tower in the Health Science Center. For more information, contact the clinic at 392-0627 or check out the web site at: <https://shcc.ufl.edu/>
- Crisis intervention is always available 24/7 from:

Alachua County Crisis Center:  
(352) 264-6789

<http://www.alachuacounty.us/DEPTS/CSS/CRISISCENTER/Pages/CrisisCenter.aspx>



## QUICK References

### **U Matter, We Care:**

If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student. <http://www.umatter.ufl.edu/>

**Counseling and Wellness Center:** [counseling.ufl.edu/cwc](http://counseling.ufl.edu/cwc), and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies. <http://www.counseling.ufl.edu>

### **Sexual Assault Recovery Services (SARS)**

Student Health Care Center, 392-1161.

**University Police Department** at 392-1111 (or 9-1-1 for emergencies), or [police.ufl.edu](http://police.ufl.edu).

**Do not** wait until you reach a crisis to come in and talk with us. We have helped many students through stressful situations impacting their academic performance. You are not alone so do not be afraid to ask for assistance.

## Academic Resources

**E-learning technical support**, 352-392-4357 (select option 2) or e-mail to [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu).

**Career Resource Center**, Reitz Union, 392-1601. Career assistance and counseling.

**Library Support**, Various ways to receive assistance with respect to using the libraries or finding resources.

**Teaching Center**, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring.

**Writing Studio**, 302 Tigert Hall, 846-1138. Help brainstorming, formatting, and writing papers.

**Student Complaints Campus**

**On-Line Students Complaints**

## Inclusive Learning Environment

Public health and health professions are based on the belief in human dignity and on respect for the individual. As we share our personal beliefs inside or outside of the classroom, it is always with the understanding that we value and respect diversity of background, experience, and opinion, where every individual feels valued. We believe in, and promote, openness and tolerance of differences in ethnicity and culture, and we respect differing personal, spiritual, religious and political values. We further believe that celebrating such diversity enriches the quality of the educational experiences we provide our students and enhances our own personal and professional relationships. We embrace The University of Florida's Non-Discrimination Policy, which reads, "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 for inclusive learning environment, please see your instructor or refer to the Office of Multicultural & Diversity Affairs website: [www.multicultural.ufl.edu](http://www.multicultural.ufl.edu)