



***Basic Auditory Science***

SPA6010 - 17527 Section: 5730

***Class Periods:*** Wednesday, 1:55 pm – 4:55 pm (periods 7-9)

***Location:*** HPNP G110

***Academic Term:*** Fall 2022

***Instructor Details***

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

[Hollea.ryan@phhp.ufl.edu](mailto:Hollea.ryan@phhp.ufl.edu)

Office Phone Number: 352-273-9716

Office Hours: Wednesdays, 5:00 pm – 6:00 pm, or by appointment

Office Location: Room 3125

***Course Description***

The nature of sound, the structure and function of the auditory system, frequency selectivity, auditory filtering, and the psychoacoustics of pure tones and complex sounds. ***3 Credit Hours.***

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

There are no pre- or co-requisites for this course.

***Materials and Supply Fees***

-No fees for this course.

***Course Objectives***

Students will be able to:

- Demonstrate knowledge of sound measurement and analysis.
- Present the current understanding of the basics of psychoacoustic behavioral phenomena.
- Discuss the difficulties explaining the robust perception of speech within the traditional psychoacoustic framework.
- Utilize programs like Praat to analyze and manipulate digital acoustic representations.

***ASHA Audiology Standards Covered***

IV-a3. Normal aspects of auditory physiology and behavior over the life span

IV-a11. Principles, methods, and applications of psychometrics

IV-a12. Principles, methods, and applications of psychoacoustics

IV-a18. Principles and practices of research, including experimental design, statistical methods, and application to clinical populations

IV-a23. Principles, methods, and applications of acoustics (e.g., basic parameters of sound, principles of acoustics as related to speech sounds, sound/noise measurement and analysis, and calibration of audiometric equipment), as applicable to:

1. occupational and industrial environments
2. community noise
3. classroom and other educational environments
4. workplace environments

### **Required Textbooks and Software**

-Required Textbook: Yost, W.A. (2007). *Fundamentals of Hearing: An Introduction, 5<sup>th</sup> Edition*. Academic Press.  
**ISBN-13: 978-9004236387**

- Supplementary Readings will be provided throughout the semester digitally.

-Required Software: Students will need to download the free version of PRAAT.

<https://www.fon.hum.uva.nl/praat/>

### **Course Schedule**

<b><u>Week</u></b>	<b><u>Date</u></b>	<b><u>Topic</u></b>	<b><u>Readings</u></b> Yost, 5 <sup>th</sup> ed.	<b><u>Activities/Items</u></b> <b><u>Due</u></b>
1	8/24/22 - Wed.	1) Review of Syllabus 2) Intro Class; 3) Sinusoids	Chs. 1 & 2	
2	8/31/22 - Wed.	Sound Propagation, Decibels, Complex Sounds	Chs. 3 & 4; Appendix B	HMWK #1
3	9/7/22 - Wed.	Sound Analysis, Resonators, Digital Signals	Ch. 5	
4	9/14/22 - Wed.	Peripheral Auditory System	Chs. 6, 7, & 8	HMWK #2
5	9/21/22 - Wed.	Neural Encoding, Central Auditory System	Chs. 9 & 15 Appendix E	
6	9/28/22 - Wed.	1) Speech and Music Acoustics 2) Review for Exam	pp. 215-220	HMWK #3 (due 10/3)
7	10/5/22 - Wed.	<b>In-Class Exam</b>		
8	10/12/22 - Wed.	Signal Detection Theory; Research Design	Appendix D	
9	10/19/22 - Wed.	Psychophysics, Thresholds, Effects of Hearing Loss	Chs. 10 & 16	Quiz 1
10	10/26/22 - Wed.	Masking	Ch. 11	
11	11/2/22 - Wed.	Sound Localization & Binaural Hearing	Ch. 12	Quiz 2
12	11/9/22 - Wed.	Loudness & Pitch Perception, Auditory Scene Analysis	Ch. 13; pp. 204-215	Quiz 3
13	11/16/22 - Wed.	1) HR @ ASHA 2) <b>No Class Meeting</b>		Class time allotted to work on paper

14	11/23/22 - Wed.	<b>THANKSGIVING BREAK</b>		
15	11/30/22 - Wed.	1) Student Paper Presentation 2) Review for Exam		
16	12/7/22 - Wed.	1) last day of class – no class meeting 2) HR @ SCA Meeting		review for exam
FINAL EXAM	12/14/22 @ 10:00 am – 12:00 pm	<b>Final Exam</b>		

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

**Class attendance is expected. Attendance will be randomly taken throughout the semester.** If students are present for every attendance collection, a total of 4 extra-credit points will be added to the final test grade. Students must be present for all random attendance collections, or have a valid and pre-approved excused absence, to earn the extra credit. Tardies are disruptive and students are encouraged to avoid arriving to class late. Excessive tardies (i.e., 4 or more) will result in a 1-point decrease in the student’s final grade. Students are responsible making arrangements to obtain notes and/or other details from classmates regarding the missed class.

All assignments are expected to be turned in by the due date **and** time. A reduction in the overall grade by 5% per day, for up to 3 days after the assignment due date/time, will occur. Any assignments submitted after 3 days will not be accepted unless prior approval has been granted by the instructor based on University policy for excused absences. *If a student is absent on the day of an in-class activity/assignment, he/she will receive a grade of zero for that assignment, unless the absence is pre-approved by the instructor or meets University requirements for an excused absence.* Excused absences must be consistent with university policies in the [Graduate Catalog](#) and require appropriate documentation. Additional information can be found in [Attendance Policies](#).

Furthermore, it is expected that students will complete all readings, projects, assignments, etc., prior to class and/or by the due date. The completion of these requirements facilitates a student’s ability to learn from lectures and discussions that occur in class. Information will be presented in a variety of ways to assist the student in learning; however, the student is ultimately responsible for learning the material. The instructor’s job is to facilitate learning. Therefore, you are expected to participate in discussions, activities, and other interactions within the class to enhance the learning environment for all students.

Students with prior knowledge of excused absences should attempt to have previous assigned work submitted by the due date; however, should a student who has an excused or approved absence miss a deadline, they will have 1 week following their return to campus to complete the activity/assignment or the assignment will receive a grade of zero. Please consult with the instructor to arrange and confirm adjusted due dates.

In fairness to all students attending class, and as a form of respect towards the instructor and any guest lectures, cell phones should be placed on mute when entering the class AND placed out of view. When appropriate, students will be given ample breaks and can check their phones during these breaks. Students may use their laptops to take notes. Should laptop use become a distraction during class, the instructor reserves the right to revoke the use of electronic devices during class.

When attending class, either in-person or virtually, students are encouraged to take handwritten notes. Although students may find it easier to take notes via a computer, research actually suggests that students who take **hand-written notes often perform better** than their classmates who use computers for taking notes.

(<http://www.psychologicalscience.org/index.php/news/releases/take-notes-by-hand-for-better-long-term-comprehension.html>) Additionally, student performance improves when students summarize the lecture when

taking notes instead of attempting to capture it word for word. Therefore, regardless of how you take notes (handwritten or typed), please attempt to summarize the discussion in your own words.

**COVID-19 and General Illness Symptoms**

See <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> for information about COVID-19 symptoms, which may include fever, cough, shortness of breath or difficulty breathing, fatigue, chills, muscle or body aches, headache, sore throat, congestion or runny nose, nausea or vomiting, diarrhea, and loss of taste or smell. Please remain home if you experience any of these symptoms. Be considerate of your classmates, instructors, and patients, when considering attending class or clinic if you are ill, and refrain from potentially spreading colds and other contagious illnesses.

**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>

**Evaluation of Grades**

<i>Assignment</i>	<i>Total Points</i>	<i>Percentage of Final Grade</i>
Homework Sets (3)	10 each	10%
Quizzes (3)	10 each	15%
Midterm Exam	100	25%
Final Exam	100	25%
Participation	10 weekly	10%
Review Paper Presentation	50	15%
Total Percentage		100%

**Grading Scale**

<i>Percent</i>	<i>Grade</i>	<i>Grade Points</i>
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](#)

Please be aware that a C- is not an acceptable grade for graduate students. The GPA for graduate students must be 3.0. in all 5000 level courses and above to graduate. A grade of C counts toward a graduate degree only if a sufficient number of credits in courses numbered 5000 or higher have been earned with a B+ or higher.

### ***Students Requiring Accommodations***

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the [Disability Resource Center](#). It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

### ***Course Evaluation***

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner](#). 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 [ufl.bluera.com/ufl/](http://ufl.bluera.com/ufl/). [Summaries of course evaluation results are available to students here](#).

### ***University Honesty Policy***

UF students are bound by The Honor Pledge which states, “**We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity**” by abiding by the Honor Code. On all work submitted for credit by students 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.**” [The Honor Code](#) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor.

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

### ***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.

***For technical support for this class, please contact the UF Help Desk at:***

- [Learning-support@ufl.edu](mailto:Learning-support@ufl.edu)
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml> ([Links to an external site.](#))

### ***Student Privacy***

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. As such, grades will not be discussed over e-mail. For more information, please see the [Notification to Students of FERPA Rights](#).

### ***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.php.ufl.edu/services/resourceguide/getstarted.htm>

### ***In-Class Recording***

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in

connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without permission of the instructor is prohibited. To “publish” means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third-party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

### **Campus Resources:**

#### Health and Wellness

**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.

**GatorWell Health Promotion Services:** For prevention services focused on optimal wellbeing, including Wellness Coaching for Academic Success, visit the GatorWell website at <https://gatorwell.ufsa.ufl.edu/> or call 352-273-4450.

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

**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](https://police.ufl.edu).

**Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit the Student Health Care Center website at <https://shcc.ufl.edu/>.

#### 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) or [helpdesk@ufl.edu](mailto:helpdesk@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**, 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

#### **Student Complaints Campus**

#### **On-Line Students Complaints**