

University of Florida
College of Public Health & Health Professions Syllabus
SPA6010: Basic Auditory Science (3 credit hours)
Class Number / Section: 18174 / 5730
 Semester: Fall: 2021
 Delivery Format: On-Campus

Instructor Name: Yonghee Oh, Ph.D.
 Room Number: HPNP G301
 Course Time: Wednesday, Period 7-9 (1:55 PM to 4:55 PM)
 Phone Number: (352) 294-8675
 Email Address: yoh@phhp.ufl.edu
 Office Hours: Wednesday 5PM – 6PM or by appointment
 Preferred Course Communications: Email

PURPOSE AND OUTCOME

Course Overview: This course will give an overview of 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. With those topics, we will spend time discussing the underlying logic of research design and inferential statistics.

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:
 - i. occupational and industrial environments
 - ii. community noise
 - iii. classroom and other educational environments
 - iv. workplace environments

Course Objectives:

Students will be able to:

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

Course Structure:

The classes will be lecture/discussions with plenty of flexibility to delve into topics that are of particular interest to the students. For most of the classes, the first half will be devoted to going over “traditional” material on acoustics, auditory physiology and psychoacoustics that is covered in the text book. In the second half of these courses, we will expand the discussion into theoretical controversies, applications to music and speech perception, and new empirical results.

In order for this course to be most beneficial, it is essential that the students remain engaged in the discussion and ask questions whether they are theoretically motivated or are simply for clarification.

DESCRIPTION OF COURSE CONTENT

Course Schedule (Topics are subject to Change)

Week	Date	Topic(s)	Readings
1	8/25	Introduction, Sinusoids	Yost Ch. 1 & 2
2	9/1	Sound Propagation, Decibels, Complex Sounds	Yost Ch. 3 & 4; Appendix B
3	9/8	Sound Analysis, Resonators, Digital Signals	Yost Ch. 5
4	9/15	Speech and Music Acoustics	Yost pp. 215-220
5	9/22	Peripheral Auditory System	Yost Ch. 6, 7, & 8
6	9/29	Neural Encoding, Central Auditory System	Yost Ch. 9 & 15, Appendix E
7	10/6	Course Review, In-Class Exam	
8	10/13	Signal Detection Theory; Research Design	Yost Appendix D
9	10/20	Psychophysics, Thresholds, Effects of Hearing Loss	Yost Ch. 10 & 16
10	10/27	Masking	Yost Ch. 11
11	11/3	Sound Localization & Binaural Hearing	Yost Ch. 12
12	11/10	Loudness & Pitch Perception	Yost Ch. 13
13	11/17	Auditory Scene Analysis	Yost pp. 204-215
14	11/24	No Class - Thanksgiving	
15	12/1	Course Review	
16	12/8	In-Class Exam	
	12/10	Final Paper Due	

***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.

Course Materials

Required Textbook: Yost, W.A. (2007). *Fundamentals of Hearing: An Introduction, 5th Edition*. Academic Press
 Supplementary Readings will be provided throughout semester digitally.

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

- Learning-support@ufl.edu
- (352) 392-HELP - select option 2
- <https://lss.at.ufl.edu/help.shtml>

ACADEMIC REQUIREMENTS AND GRADING

Assignments

Exams: There will be two in-class exams (10/6 and 12/8), which will assess knowledge of the traditional topics covered in the course. These exams will be a mix of multiple choice, short answer and short essay and are worth 30% of the final grade each.

Homework: Most weeks will include a short homework assignment that may include written problems and/or tasks using programs such as Praat and Matlab. The main purpose of these assignments is to give the students additional hands-on experience with the course material, but they will also be worth 10% of the final grade. These assignments will be due by the 5:00 pm on the Tuesday preceding each class.

Final Paper: The final paper is worth 20% of the final grade and will be written on a topic chosen by the instructor. The paper should review the paper and include at least one additional reference to the sources used in the class on that topic. In addition, the student should present their informed opinion about the topic. The paper should be at least 5 pages, double spaced. It is due by 5:00 pm on 12/10/2021.

Class Participation: All students are expected to be active participants in the discussion and to ask questions (whether theoretical or for clarification) throughout the semester.

Grading

Requirement	Due date	% of final grade
Exam #1	October 6	30%
Exam #2	December 8	30%
Homework	Tuesday before each class (5:00 pm)	10%
Final Paper	December 10 (5:00 pm)	20%
Class Participation	Every Class	10%

Letter grade to grade point conversions are fixed by UF and cannot be changed.

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E
Percentage	93-100	90-92	87-89	83-86	80-82	77-79	73-76	70-72	67-69	63-66	60-62	<60
Grade points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.67	1.33	1.0	0.67	0.0

For greater detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at: <http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

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. In addition, the Bachelor of Health Science Program does not use C- grades.

More information on UF grading policy may be found at:
<http://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Exam Policy

The midterm and final exam are cumulative. Exams will be given in class in paper and pencil format. Exams are closed book will be administered and proctored by the course instructor.

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. Attendance will be recorded at the beginning of each class session, and will be available in CANVAS for you to view. If a student has to leave early, they need to notify the instructor prior to the start of the class so that attendance can be documented appropriately. More than 1 unexcused absence will result in a loss of the 10% participation portion of the final grade.

Please note all faculty are bound by the UF policy for excused absences. For information regarding the UF Attendance Policy see the Registrar website for additional details:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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. Additional information can be found here:

<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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.

Professionalism and COVID

As students pursuing a path in the health professions or public health, it is crucial to demonstrate professional behaviors that reflect integrity and commitment to the health of patients, fellow health professionals, and to populations we serve. To accomplish this, a strong responsibility for the well-being of others must be evident in our decisions, along with accountability for our actions. Professionalism in the health disciplines requires adherence to high standards of conduct that begin long before graduation. This is particularly true during times of health emergencies such as the COVID pandemic, given our professional habits can have a direct impact upon the health of persons entrusted to us.

If you are not vaccinated, get vaccinated. Vaccines are readily available at no cost and have been demonstrated to be safe and effective against the COVID-19 virus. Visit this link for details on where to get your shot, including options that do not require an appointment: <https://coronavirus.uflhealth.org/vaccinations/vaccine-availability/>. Students who receive the first dose of the vaccine somewhere off-campus and/or outside of Gainesville can still receive their second dose on campus. In response to COVID-19, the following professional practices are in place to maintain your learning environment, to enhance the safety of our in-classroom interactions, and to protect the health and safety of ourselves, our patients, our neighbors, and our loved ones.

- You are required to wear approved face coverings at all times while in Health Science Center classrooms and within Health Science Center buildings even if you are vaccinated.
- If you are sick, stay home and self-quarantine. Please visit the UF Health Screen, Test & Protect website about next steps, retake the questionnaire and schedule your test for no sooner than 24 hours after your symptoms began. Please call your primary care provider if you are ill and need immediate care or the UF Student Health Care Center at 352-392-1161 (or email covid@shcc.ufl.edu) to be evaluated for testing and to receive further instructions about returning to campus. UF Health Screen, Test & Protect offers guidance when you are sick, have been exposed to someone who has tested positive or have tested positive yourself. Visit the UF Health Screen, Test & Protect website for more information.
- Continue to follow healthy habits, including best practices like frequent hand washing.
- Avoid crowded places (including gatherings/parties with more than 10 people)

Sanitizing supplies are available in the classroom if you wish to wipe down your desks prior to sitting down and at the end of the class. Hand sanitizing stations will be located in every classroom.

Course materials will be provided to you with an excused absence, and you will be given a reasonable amount of time to make up work. If you are withheld from campus by the Department of Health through

Screen, Test & Protect you are not permitted to use any on campus facilities. Students attempting to attend campus activities when withheld from campus will be referred to the Dean of Students Office.

Continue to regularly visit coronavirus.UFHealth.org and coronavirus.ufl.edu for up-to-date information about COVID-19 and vaccination.

COVID-19 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.

Online Faculty Course Evaluation Process

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/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.phphp.ufl.edu/services/resourceguide/getstarted.htm>

SUPPORT SERVICES

Accommodations for Students with Disabilities

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.

Counseling and Student Health

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>

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.

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