

University of Florida
College of Public & Health Professions Syllabus
SPA 6581

Electrophysiology (4 credits) Semester: Fall 2021
Delivery Format: In- Class Format
Course: E-Learning: Canvas

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Course Meets: PPHP Conference Room Thursday, 12:50-3:50pm
Office Hours: By appointment (zoom/in person)
Preferred Course Communications: email

Instructor for IONM Observation:
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Professor of Anesthesiology, Neurosurgery & Neuroscience
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University of Florida

PURPOSE AND OUTCOME

Course Overview

Theoretical and applied understanding of Electrophysiology in the scope of audiology today.

Relation to Program Outcomes

The content of this course is designed to help you meet the following CCC-A Standard IV: Knowledge and Skills Outcomes and will be assessed through the assignments and exams.

- IV-a2. Genetics and associated syndromes related to hearing and balance
- IV-a3. Normal aspects of auditory physiology and behavior over the life span
- IV-a8. Effects of pharmacologic and teratogenic agents on the auditory and vestibular systems
- IV-a10. Pathologies related to hearing and balance and their medical diagnosis and treatment
- IV-a21. Universal precautions and infectious/contagious diseases
- IV-a24. The use of instrumentation according to manufacturer's specifications and recommendations
- IV-a25. Determining whether instrumentation is in calibration according to accepted standards
- IV-b2. Promote hearing wellness, as well as the prevention of hearing loss and protection of hearing function by designing, implementing, and coordinating universal newborn hearing screening, school screening, community hearing, and occupational conservation and identification programs
- IV-b3. Screen individuals for hearing impairment and disability/handicap using clinically appropriate, culturally sensitive, and age- and site-specific screening measures

- IV-c1. Measuring and interpreting sensory and motor evoked potentials, electromyography, and other electrodiagnostic tests for purposes of neurophysiologic intraoperative monitoring and cranial nerve assessment
- IV-c2. Assessing individuals with suspected disorders of hearing, communication, balance, and related systems
- IV-c5. Conducting and interpreting behavioral and/or electrophysiologic methods to assess hearing thresholds and auditory neural function
- IV-c6. Conducting and interpreting behavioral and/or electrophysiologic methods to assess balance and related systems
- IV-c7. Conducting and interpreting otoacoustic emissions and acoustic immitance (reflexes)
- IV-c10. Preparing a report, including interpreting data, summarizing findings, generating recommendations, and developing an audiologic treatment/management plan
- IV-c11. Referring to other professions, agencies, and/or consumer organizations

Course objectives

Students completing this course will demonstrate knowledge of:

1. Appropriate electrophysiological instrumentation appropriately and consistent with the FDA and manufacturer guidelines and standards.
2. Test protocols for clinical electrophysiological measurements, including OAEs, ABR, ECoChG, ENoG, AMLR, P300 and VEMP.
3. The rationale and strategy for applying OAEs and ABR in the audiological assessment and management of children and adults.
4. Performing and analyzing OAEs and ABRs appropriately.
5. Subject factors, including age, gender, race, and other aspects of diversity in the analysis and interpretation of auditory evoked responses.
6. Intra-operative neurophysiologic monitoring during surgeries putting the auditory system and/ or facial nerve at risk.

Instructional Methods

Lectures, readings, labs and course assignments

Course Materials and Technology

Recommended Textbook:

Atcherson S and Stoodly T. *Auditory Electrophysiology*. New York: Thieme, 2012.

Other required readings and videos will be listed for the class and will be accessible online via Canvas listed for each week.

Date	Topic	Readings /Assignments	Due
8/26	Course overview: Syllabus Course assignments/labs Principles in Analysis	Readings: See Canvas Workbook (WB) Assignment #1	
9/02	OAEs	Readings: See Canvas Workbook (WB) Assignment #2	WB 1
9/9	PRE-RECORDED: NO CLASS: Electrocochleography and clinical application, VEMPS and ENOG	Readings: See Canvas Workbook (WB) Assignment #3	WB 2
9/16	Hands On Lab		WB 3
9/23	Auditory Brainstem Response (ABR), Automated ABR, Threshold ABR	Readings: See Canvas Workbook (WB) Assignment #4	
9/30	Hands On Lab		WB 4
10/7	STUDY *Zoom/in person by appt Email me until 10/13 5pm with questions	STUDY	STUDY
10/14	WEEK 7 Midterm		

10/21	FFR, ASSR, and Clinical Application	Readings: See Canvas Workbook (WB) Assignment #5	
10/28	IONM Part 1	Readings: See Canvas Workbook (WB) Assignment #6	WB 5
11/4	IONM Part 2	Readings: See Canvas Workbook (WB) Assignment #7	WB 6
11/11	NO CLASS VETERAN'S DAY		

11/18	Auditory Neuropathy and Review	Readings: See Canvas	WB 7
11/25	WEEK 13: NO CLASS		
12/2	Online Meeting/Review		CASE STUDY DUE!
12/9	WEEK 15: FINAL		

Topic schedules are subject to change.

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

Requirement	% of Final Grade
COURSE WORK BREAKDOWN	
• Homework/ Work book	20%
• Participation	5%
• Case study	15%
Midterm Exam	25%
Final Exam	35%

Point system used (i.e., how do course points translate into letter grades).

Letter Grade	A	A-	B+	B	B-	C+	C	D+	D	D-	E
Percentage	93-100	90-93	87-89	83-86	80-82	77-79	70-76	67-69	63-66	60-62	<60
Points	925+	895-924	865-894	825-864	795-824	765-794	700-764	665-699	625-664	601-624	<600
Grade points	4.0	3.67	3.33	3.0	2.67	2.33	2.0	1.33	1.0	0.67	0.0

For detail on the meaning of letter grades and university policies related to them, see the Registrar's Grade Policy regulations at:

<http://gradcatalog.ufl.edu/content.php?catoid=8&navoid=149>

ASSIGNMENT

You will be assigned various homework assignments throughout the semester which are located in your electrophysiology workbooks.

CASE STUDY ASSIGNMENT

In this course you will be exposed to many different electrophysiologic test measures used in the field of audiology. For this assignment, I would like you to choose a disorder or pathology and research how it relates and effects the auditory system, specifically retro cochlear., You research should include, but not be limited to case studies and/or test results from a search engine or research article. You may also gather ideas from those cases present in your workbook or in class. The following criteria are required for the assignment.

- 1.) Choose a disorder/pathology and research its impact on audiologic data, with an emphasis on electrophysiologic data.
 - a. Acoustic Neuroma
 - b. ANSD
 - c. Multiple Sclerosis
 - d. Traumatic Brain Injury
 - e. Charcot Marie Tooth Disease
 - f. Metabolic Disorders
 - g. Vascular Disorders
 - h. Congenital disorder that may require sedated testing
- 2.) Present the information in a "case report" style and include the following data:
 - a. Audiogram (AC/BC/Speech)
 - b. Tymps/Reflexes
 - c. OAEs
 - d. Electrophysiologic testing
- 3.) USE the reports in your workbook to guide you in writing your case study.
 - a. Case history
 - b. Summary of each results
 - c. Interpretation
 - d. Recommendations

** This assignment will be submitted through CANVAS and is due by 12/2/21, 11:59 PM EST Time. You may begin working on it anytime during the course and submit before the due date. It will not be graded until everyone has submitted the assignment.

OPERATING ROOM OBSERVATION OPPORTUNITY:

If you are interested in observing surgical cases in intraoperative monitoring, please speak with Dr. Fitzgerald on organizing this experience.

LAB TIME:

This is a time to get familiar with the equipment and ask questions. Please be engaged, it is where we put our learning into motion.

Exam Policy

Exams will be given in person during the schedule class time and will only be adjusted for extenuating circumstances.

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 is required. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis. Any unexcused absence will result in a 3-point reduction in your final grade.

Policy Related to Recording Lectures

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.”

STUDENT EXPECTATIONS, ROLES, AND OPPORTUNITIES FOR INPUT

Expectations Regarding Course Behavior

You are expected to attend each class and, once in class, you are expected to participate. Your questions, comments, and observations make the class lively and interesting and are an intrinsic aspect of professionalism.

Communication Guideline

Your participation in classroom discussions is essential to this course. Group discussion related to assigned readings and weekly lecture topics will be an integral part of the class meeting time and full participation is expected. Laptops may be used for note taking in class; laptop use during class for reasons outside of the course is distracting and will not be permitted.

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 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/>

SUPPORT SERVICES

Accommodations for Students with Disabilities

If you require classroom accommodation because of a disability, you must register with the Dean of Students Office <http://www.dso.ufl.edu> within the first week of class. 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 make sure you provide this letter to me by the end of the second week of the course. 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.

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.ufhealth.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.