Last name of instructor (Semester Year)

California State University, Sacramento
AUDITORY EVOKED POTENTIALS
CSAD641 - 3 units
Fall 2020 (AUD-2)

COURSE FACULTY
Course Instructor:
Folsom Hall office #:
Office Phone:
Office Hours:
E-mail address:

REQUIRED CLASS MEETINGS TIMES
Days and times:
Building: Folsom Room #:

REQUIRED TEXTS
Atcherson, S.R., & Stoody, T.M. (2012). *Auditory electrophysiology: A clinical guide*. Thieme.

Katz, J. (2011). *Handbook of clinical audiology* (7th ed.). Wolters Kluwer.

OPTIONAL TEXTS

COURSE WEBSITE
https://sacct.csus.edu
SacCT will be used as the learning management site for dissemination of course readings, handouts, slides, assignments, announcements, and tests/quizzes. The course faculty will have materials posted to SacCT at least 48 hours before class.

Instructor Communication and Response Time
Faculty strive to have open communication with students both within and outside of the classroom. Students are encouraged to contact faculty to discuss questions about the course. Responses to telephone or e-mail messages will usually be transmitted within 48 hours during regular working hours. If you do not have a response within this time period, please check your contact methods and resend the message. Faculty will generally respond to student questions received during evenings and weekends once they are back in the office during regular business hours.

GENERAL COURSE INFORMATION

PRE-REQUISITES
Admission to Doctor of Audiology program; CSAD611, CSAD612, CSAD613, CSAD614, CSAD621, CSAD622, CSAD622L, CSAD623, CSAD624, CSAD631, CSAD632

CO-REQUISITES
CSAD641L

COURSE DESCRIPTION

Overview

This course is designed to provide Doctor of Audiology students with an understanding of physiological measures, specifically evoked potentials, that can be used to assess the integrity of the auditory system.

Approved Course Description (from CSUS Course Catalog)
Physiological measures for evaluating the integrity of the auditory system. Emphasis on the administration and interpretation of the auditory brainstem response.

WHY IS THIS COURSE IMPORTANT?

Auditory evoked potentials are used to evaluate the integrity of the auditory system and can be used in both clinical and research settings. Objective measures of auditory system structure and function are important for diagnosis of pathologies and inferences about a person's hearing status, as well as for use in populations in which behavioral measures cannot be obtained.

UNIVERSITY LEARNING GOALS

	1 Disciplinary knowledge	2 Communication	3 Critical thinking/analysis	4 Information literacy	5 Professionalism	6 Intercultural/global perspectives	7 Research
Addressed by this course	X		X	X	X		X

GRADUATE LEARNER OUTCOMES

Mastery of each student-learning outcome listed below is indicated by a grade of B or better on each component of the corresponding measures listed in the table. Students are required to track their progress towards meeting each learning outcome and must make an appointment with the instructor for any grade equal to or less than a B. The instructor will suggest strategies to help you establish competence and knowledge in these areas.

Students should track their progress towards meeting each learning outcome by listing their grades on the table below over the course of the semester.

Upon completion of this course, students will be able to:

1. Describe the aspects of normal and abnormal peripheral and central auditory anatomy and physiology
2. Discuss electrode placement and patient preparation for testing children and adults
3. Describe calibration procedures for electrophysiological equipment
4. Classify types of auditory evoked potentials
5. State the uses, populations, test characteristics, considerations, and limitations of electrophysiological measures
6. Give examples of uses for intraoperative monitoring within the scope of practice for audiologists

Graduate Learner Outcome	Component Indicating Competence	Grade(s) Received
1-6	Exam (100%)	
1-6	Quiz (100%)	

COURSE/CLASS POLICIES

Course Format
Lecture

Class Preparation:
All required readings are for the date listed in the course schedule, not the following class period. Students are responsible for all assigned readings, whether discussed in class or not.

Class Participation:
Students are expected to actively participate in class discussions and are required to have read the assigned material prior to class meetings.

Class Attendance:
Classroom attendance is necessary for this course. No more than three unexcused absences are allowed. Students are expected to arrive on time as class begins at X:XX am/pm.

Class Assignments
Course grades will be based on ten quizzes, two exams, and one final exam.

Quizzes
Weekly quizzes will be available on SacCT one week prior to the due date. Students are expected to complete the quiz before the scheduled due date. Quizzes are based on assigned reading. Students will have 60 minutes to take the quiz; late submissions will receive a 0.

Exams

- **Exam absences**: No make-up examinations will be given unless there is a documented emergency for which you have written proof. Any approved make-up exams will be scheduled at the end of the semester (during finals week) and may be administered in a different format from the original exam.

- **Exam procedures**:

  Test arrival/start

  Test duration and completion

Commitment to Integrity
As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom.

Sac State's Academic Honesty Policy & Procedures
"The principles of truth and honesty are recognized as fundamental to a community of scholars and teachers. California State University, Sacramento expects that both faculty and students will honor these principles, and in so doing, will protect the integrity of academic work and student grades." Read more about Sac State's Academic Honesty Policy & Procedures at the following website: http://www.csus.edu/umanual/AcademicHonestyPolicyandProcedures.htm

Definitions: At Sac State, "cheating is the act of obtaining or attempting to obtain credit for academic work through the use of any dishonest, deceptive, or fraudulent means."

"Plagiarism is a form of cheating. At Sac State, "plagiarism is the use of distinctive ideas or works belonging to another person without providing adequate acknowledgement of that person's contribution." *Source:* Sacramento State University Library
Note: Any form of academic dishonesty, including cheating and plagiarism, shall be reported to the office of student affairs.

Understand When You May Drop This Course
It is the student's responsibility to understand when he/she need to consider disenrolling from a course. Refer to the Sac State Course Schedule for dates and deadlines for registration. After this period, a serious and compelling reason is required to drop from the course. Serious and compelling reasons include: (a) documented and significant change in work hours, leaving student unable to attend class, or (b) documented and severe physical/mental illness/injury to the student or student's family. Under emergency/special circumstances, students may petition for an incomplete grade. An incomplete will only be assigned if there is a compelling extenuating circumstance. All incomplete course assignments must be completed in accordance with the department's policy.

Accommodations
Inform your instructor of any accommodations needed. If you have a documented disability and verification from the Office of Services to Students with Disabilities (SSWD), and wish to discuss academic accommodations, please contact your instructor as soon as possible. It is the student's responsibility to provide documentation of disability to SSWD and meet with a SSWD counselor to request special accommodation before classes start. SSWD is located in Lassen Hall 1008 and can be contacted by phone at (916) 278-6955 (Voice) or (916) 278-7239 (TDD only) or via email at sswd@csus.edu

Course Requirement Grading

Activity	Points Available
Quizzes (10 points x 10)	100
Exam (date and material covered)	200
Exam (date and material covered)	200
Exam (date and material covered)	200
Final exam (date and material covered)	300
TOTAL COURSE POINTS AVAILABLE	1000

Overall Percentage Needed
Note: A grade of "B" or higher is required to count toward the minimum number of units needed to advance to candidacy.

Grade	Percentage
A	93-100%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D+	67-69%

D	63-66%
D-	60-62%
F	< 60%

COURSE SCHEDULE OF LECTURE TOPICS AND EXAMS

Date	Topic and Activity or Quiz and Exam	Readings/ Assignment
8/26	Introduction to course Overview of electrophysiology	Atcherson & Stoody- Ch. 1
8/28	Central and peripheral auditory systems Assessment of the peripheral auditory system	
9/2	Review of neuroanatomy and neurophysiology EEG	Atcherson & Stoody- Ch. 4
9/4	Preparation of patient Placement of electrodes	Atcherson & Stoody- Ch. 20
9/9	Instrumentation and test environment	Atcherson & Stoody- Ch. 2
9/11	Calibration	Atcherson & Stoody- Ch.22
9/16	Evoked potentials and measurements Neural generators	
9/18	Waveform analysis	Atcherson & Stoody- Ch. 3
9/23	Stimuli and recording	Atcherson & Stoody- Ch. 2-3 Gorga, M. P., Johnson, T. A., Kaminski, J. K., Beauchaine, K. L., Garner, C. A., & Neely, S. T. (2006). Using a combination of click-and toneburst-evoked auditory brainstem response measurements to estimate pure-tone thresholds. *Ear and hearing*, *27*(1), 60.
9/25	**Exam 1**	
9/30	Electrocochleography: Principles and interpretation	Atcherson & Stoody- Ch. 5, 12
10/2	ABR: Principles and interpretation (estimation of threshold)	Atcherson & Stoody- Ch. 6, 14 Crumley, W. (2011). Good practices in auditory brainstem response, part 1. Audiology Online.
10/7	ABR: Principles and interpretation	
10/9	ABR: Use in differential diagnosis	
10/14	ABR: Use in pediatric populations	
10/16	Automated ABR	

10/21	No class- spring break	
10/23	No class-spring break	
10/28	Review for Exam 2	
10/30	**Exam 2**	
11/4	Auditory steady-state response: Principles and interpretation	Atcherson & Stoody- Ch. 8, 15 Rance, G., & Rickards, F. (2002). Prediction of hearing threshold in infants using auditory steady-state evoked potentials. *Journal of the American Academy of Audiology*, *13*(5), 236-245.
11/6	Auditory steady-state response: Principles and interpretation	Atcherson & Stoody- Ch. 8, 15
11/11	Middle latency response	Atcherson & Stoody- Ch. 9
11/13	Late latency response	Zhang, F., Eliassen, J., Anderson, J., Sceifele, P., & Brown, D. (2009). The time course of the amplitude and latency in the auditory late response evoked by repeated tone bursts. *Journal of the American Academy of Audiology*, *20*(4), 239-250.
11/18	Central auditory processing of complex stimuli cABR	Atcherson & Stoody- Ch. 16 Skoe, E., & Kraus, N. (2010). Auditory brainstem response to complex sounds: a tutorial. *Ear and hearing*, *31*(3), 302. Anderson, S., Parbery-Clark, A., White-Schwoch, T., & Kraus, N. (2013). Auditory brainstem response to complex sounds predicts self-reported speech-in-noise performance. *Journal of Speech, Language, and Hearing Research*, *56*(1), 31-43.
11/20	Intraoperative monitoring	Atcherson & Stoody- Ch. 18 Loiselle, D.L., & Nuwer, MR. (2005). When should

		we warn the surgeon? Diagnosis-based warning criteria for BAEP monitoring. *Neurology*, *65*(10).
11/27	Intraoperative monitoring	Atcherson & Stoody- Ch. 18
12/2	Auditory training efficacy	Atcherson & Stoody- Ch. 23 Alonso, R., & Schochat, E. (2009). The efficacy of formal auditory training in children with (central) auditory processing disorder: Behavioral and electrophysiological evaluation. *Brazilian Journal of Otorhinolaryngology*, *75*(5), 726-732. Anderson, S., & Jenkins, K. (2015). Electrophysiologic assessment of auditory training benefits in older adults. *Seminars in Hearing*, *36*(4), 250-262. Presacco, A., Jenkins, K., Lieberman, R., & Anderson, S. (2015). Effects of aging on the encoding of dynamic and static components of speech. *Ear & Hearing*, *36*(6), e352-363.
12/4	Review for final exam	
12/12	Review for final exam	
	Final exam	

Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be given ample notification of the change.