



California State University, Sacramento

Department of Communication Sciences and Disorders

Graduate syllabus & course outline

Semester/Year: Spring/2023	Course: CSAD 651 Objective measures	Section: 01
Meeting Days: Monday & Wednesday	Meeting Times: 3:00 PM-4:15 PM	Location: Folsom Hall 2604
Instructor: Hamid Motallebzadeh, Ph.D.	Email: h.motallebzadeh@csus.edu	Phone: 916-278-3589
Office Location: 2404E	Office Hours/Appointments: Monday and Wednesday 1:00-2:00 pm by appointment	

Catalogue Course Description

CSAD 651. Objective measures 3 Units

Prerequisite(s):

Admission to Doctor of Audiology program; CSAD611, CSAD612, CSAD613, CSAD614, CSAD621, CSAD622, CSAD622L, CSAD623, CSAD624, CSAD631, CSAD632, CSAD641, CSAD641L, CSAD642, CSAD643

Fundamentals of otoacoustic emissions, and advanced study of immittance testing and the auditory brainstem response with some practical exercises. This course continues exploration of physiological measures used to assess the auditory system beyond auditory evoked potentials. Students will learn about otoacoustic emissions and their use in the audiologic test battery and screenings, as well as further study of immittance and the auditory brainstem response.

The course is offered typically in spring.

Course Learning 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. You should track your progress toward meeting each learning outcome by listing your grades on the table below over the course of the semester. The expected outcome of the course will be assessed throughout the semester:

1. Differentiate between types of auditory brainstem response test and their uses
2. Describe the effects of maturation and age on the auditory brainstem response (ABR)
3. Give examples of uses of the ABR for screening and evaluating hearing status
4. Explain the mechanism of the three types of otoacoustic emissions (OAEs)
5. Compare and contrast otoacoustic emission types
6. List the steps in the clinical measurement protocols for otoacoustic emissions
7. Perform DPOAE and TEOAE testing
8. Interpret OAE results for diagnosing and screening hearing status
9. Define “multi-frequency tympanometry” and “wideband reflectance”
10. Discuss the uses of immittance measures for special populations

Sacramento State Baccalaureate Learning Goals for the 21st Century (BLG)	Addressed by this course (Y/N)
Competence in the Disciplines: The ability to demonstrate the competencies and values listed below in at least one major field of study and to demonstrate informed understandings of other fields, drawing on the knowledge and skills of disciplines outside the major.	Yes
Knowledge of Human Cultures and the Physical and Natural World through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts. Focused by engagement with big questions, contemporary and enduring.	Yes
Intellectual and Practical Skills, Including: inquiry and analysis, critical, philosophical, and creative thinking, written and oral communication, quantitative literacy, information literacy, teamwork and problem solving, practiced extensively, across the curriculum, in the context of progressively more challenging problems, projects, and standards for performance.	Yes
Personal and Social Responsibility, Including: civic knowledge and engagement—local and global, intercultural knowledge and competence*, ethical reasoning and action, foundations and skills for lifelong learning anchored through active involvement with diverse communities and real-world challenges	Yes
Integrative Learning**, Including: synthesis and advanced accomplishment across general and specialized studies	Yes

Knowledge And Skills Acquisition (KASA) For Certification in Audiology

Standard II-A: Foundations of Practice

- A1. Genetics, embryology and development of the auditory and vestibular systems, anatomy and physiology, neuroanatomy and neurophysiology, and pathophysiology of hearing and balance over the life span
- A5. Calibration and use of instrumentation according to manufacturers' specifications and accepted standards
- A6. Standard safety precautions and cleaning/disinfection of equipment in accordance with facility-specific policies and manufacturers' instructions to control for infectious/contagious diseases
- A7. Applications and limitations of specific audiologic assessments and interventions in the context of overall client/patient management
- A13. Principles of research and the application of evidence-based practice (i.e., scientific evidence, clinical expertise, and client/patient perspectives) for accurate and effective clinical decision making

A14. Assessment of diagnostic efficiency and treatment efficacy through the use of quantitative data (e.g., number of tests, standardized test results) and qualitative data (e.g., standardized outcome measures, client/patient-reported measures)

Standard II-C: Audiologic Evaluation

C4. Identifying, describing, and differentiating among disorders of the peripheral and central auditory systems and the vestibular system

C7. Selecting, performing, and interpreting a complete immittance test battery based on patient need and other findings; tests to be considered include single probe tone tympanometry or multifrequency and multicomponent protocols, ipsilateral and contralateral acoustic reflex threshold measurements, acoustic reflex decay measurements, and Eustachian tube function

C10. Evaluating basic audiologic findings and client/patient needs to determine differential diagnosis and additional procedures to be used

C11. Selecting, performing, and interpreting physiologic and electrophysiologic test procedures, including electrocochleography, auditory brainstem response with frequency-specific air and bone conduction threshold testing, and click stimuli for neural diagnostic purposes

C12. Selecting, performing, and interpreting otoacoustic emissions testing

C13. Selecting, performing, and interpreting tests for nonorganic hearing loss

C16. Electrophysiologic testing, including but not limited to auditory steady-state response, auditory middle latency response, auditory late (long latency) response, and cognitive potentials (e.g., P300 response, mismatch negativity response)

Required Textbooks and Materials

Objective assessment of hearing. Plural Publishing (2010).

ISBN: 1597563536

ISBN-13: 978-1597563536

Authors: Hall, J.W., & Swanepoel, D.

Optional textbooks

Otoacoustic Emissions: Principles, Procedures, and Protocols, Plural Publishing (2011).

ISBN: 1597563420

ISBN-13: 978-1597563420

Authors: Dhar S.& Hall J.W

Acoustic immittance measures: basic and advanced practice. Plural Publishing (2014).

ISBN: 1597564370

ISBN-13: 978-1597564373

Authors: Hunter, & Shanaz, N.

Auditory evoked potentials: basic principles and clinical application. Lippincott Williams & Wilkins (2007).

ISBN: 0781757568

ISBN-13: 978-0781757560

Authors: Burkard, R. F., Eggermont, J. J., & Don, M.

Online Resources:

Other selected articles, videos, and papers will be available on Canvas (<https://canvas.csus.edu/>). Students are responsible for assigned readings, whether discussed in class or not. All reading assignments are for the date listed on the course schedule, not the following class period

Course Requirements/Components:

Microsoft Office Suite

- Word
- Excel
- Power Point
- Adobe Reader

Grading Policy:

Quizzes

There will be 5 quizzes given throughout the semester including a combination of multiple-choice questions, short answer. The quizzes will be given at the beginning of classes on paper. There are NO MAKE-UPS.

Assessments

There will be 2 assignments given throughout the semester including a combination of essay questions and paper review. There are NO MAKE-UPS.

Labs

There will be 1 lab components throughout the semester. Attendance and participation in the lab assignments are required. There are NO MAKE-UPS.

Exams

There will be 3 exams given throughout the semester including a combination of multiple-choice questions, short answer and essays. There are NO MAKE-UPS.

Course project

The course project is about a case study of differential diagnosis from the literature review. Students will present at the end of semester and provide a written report.

In-class activities

Students are expected to actively participate in class discussions. Some course components (e.g., in-class activities, discussions, etc.) require work in pairs or small groups. Students should be respectful and demonstrate professional behavior during class and in breakout rooms.

Class Attendance

Classroom attendance is necessary for this course. Students are expected to arrive on time. Students must email the instructor if they are not able to attend the class and are responsible to learn the material that was covered during their absence. Greater than two absences will cause the initiation of an academic performance improvement plan (APIP).

Student travel policy: <https://www.csus.edu/college/health-human-services/communication-sciencesdisorders/internal/documents/policy/csad-student-travel-policy.pdf>

If you are sick, stay home and do not attend class. Notify your instructor. Please self-diagnose if you are experiencing any COVID- like symptoms (fever, cough, sore throat, muscle aches, loss of smell or taste, nausea, diarrhea, or headache) or have had exposure to someone who has tested positive for COVID contact Student Health & Counseling Services (SHCS) at 916-278-6461 to receive guidance and/or medical care. The CDC provides a good source of information regarding COVID-19 and a way to self-check symptoms: <https://www.cdc.gov/coronavirus/2019-ncov/index.html>

Students must adhere to COVID-19 policies regarding mask wearing and vaccinations as described on the CSUS website. Please see <https://www.csus.edu/compliance/risk-management/coronavirus.html> and <https://www.csus.edu/return-to-campus/return-to-campus-faq.html> for more information and updates.

The Final Grade will be based on a percentage of total points (500) and will be assigned as follows:

Source	Point	%
Quizzes	5x10	10%
Exams	3x80	48%
Assignments	2x20	8%
Lab	40	8%
Attendance and class activities	50	10%
Project (report and presentation)	30+50	16%
Total	500	100%

Letter grades are assigned according to the following scores:

%	Letter
93 – 100	A
90 – 92	A-
87 – 89	B+
83 – 86	B
80 – 82	B-
77 – 79	C+
73 – 76	C
70 – 72	C-
67 – 69	D+
63 – 66	D
60 – 62	D-
< 60	F

TENTATIVE Course Schedule/Outline:

Date	Topic	Reference	Assignment/activity
01/23	Course introduction Principles of objective hearing assessment	Chapter 1	
01/25	Introduction to immittance	Chapter 2 Acoustic immittance measures: basic and advanced practice (book)	

01/30	Immittance measurements I	Chapter 2 Acoustic immittance measures: basic and advanced practice (book)	
02/01	Immittance measurements II	Chapter 2 Acoustic immittance measures: basic and advanced practice (book)	
02/06	Wideband immittance	Chapter 2 Acoustic immittance measures: basic and advanced practice (book)	
02/08	Otoacoustic emissions I	Chapter 3 Otoacoustic Emissions: Principles, Procedures, and Protocols (book)	Quiz 1 (immittance)
02/13	Conference	Online resources	
02/15	Conference	Online resources	Assignment I (immittance)
02/20	Otoacoustic emissions II	Chapter 3 Otoacoustic Emissions: Principles, Procedures, and Protocols (book)	
02/22	Otoacoustic emissions III	Chapter 3 Otoacoustic Emissions: Principles, Procedures, and Protocols (book)	
02/27	Otoacoustic emissions: Screening	Otoacoustic Emissions: Principles, Procedures, and Protocols (book)	Quiz 2 (OAE)
03/01	Review		
03/06			Exam 1
03/08	Electro-cochleography I	Chapter 4 Auditory evoked potentials: basic principles and clinical application (book)	
03/13	Electro-cochleography II	Chapter 4 Auditory evoked potentials: basic principles and clinical application (book)	
03/15	ABR I	Chapter 5	Quiz 3 (ECochG)

		Auditory evoked potentials: basic principles and clinical application (book)	
03/20	Spring brake		
03/22	Spring brake		
03/27	ABR II	Chapter 5 Auditory evoked potentials: basic principles and clinical application (book)	
03/29	ABR for screening	Chapter 5 Auditory evoked potentials: basic principles and clinical application (book)	Quiz 4 (ABR)
04/03	Review		
04/05			Exam 2
04/10	Auditory steady-state response I	Chapter 6	
04/12	Auditory steady-state response II	Chapter 6	
04/17	Lab		
04/19	Conference	Online resources	Assignment II (OAE and auditory evoked potentials)
04/24	Differential Diagnosis	Chapter 7	
04/26	Special testing considerations		Quiz 5 (differential diagnosis)
05/01	Case review		
05/03	Case review		
05/08	Project presentation		
05/10	Project presentation		
05/			Exam 3

Please note that dates, topics, and assignments are subject to change. In the event of a change, you will be notified prior to class.

Additional Information

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: <https://www.csus.edu/umannual/student/stu-100.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 Conduct.

Department Policy on Use of APA format

The Department of Communication Sciences and Disorders requires the use of the APA format and style. All students are required to reference the APA manual. All assignments are to be composed using APA format and style unless otherwise noted.

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 by the department's policy.

Inclusivity:

Students in this class are encouraged to be active participants in all aspects of the course, including but not limited to lectures, synchronous and asynchronous activities, discussion posts, etc. Each of us must show respect for each other, as our class represents a diversity of beliefs, backgrounds, and experiences. This enriches all of our learning experiences together. Our individual differences deepen our understanding of one another and the world around us, rather than divide us. In this class, people of all ethnicities, genders and gender identities, religions, ages, sexual orientations, disabilities, socioeconomic backgrounds, regions, and nationalities are strongly encouraged to share their rich array of perspectives and experiences. If you feel your differences may in some way isolate you from our classroom community, or if you have a specific need, please contact the instructor early in the semester. Your instructor will work with you to ensure that you become an active and engaged member of our class and community.

Equal Access:

California State University-Sacramento, Department of Communication Sciences and Disorders, seeks to provide equal access to its programs, services, and activities for people with disabilities. 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. **Sacramento State Services to Students with Disabilities (SSWD)** offers a wide range of support services and accommodations for students in order to ensure students with disabilities have equal access and

opportunity to pursue their educational goals. Working collaboratively with students, faculty, staff and administrators, SSWD provides consultation and serves as the information resource on disability related issues to the campus community. 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.

Sacramento State is committed to ensuring an accessible learning environment where course or instructional content are usable by all students and faculty. If you believe that you require disability-related academic adjustments for this class (including pregnancy-related disabilities), please immediately contact Services for Students with Disabilities (SSWD) to discuss eligibility. A current accommodation letter from SSWD is required before any modifications, above and beyond what is otherwise available for all other students in this class will be provided. Please be advised that disability-related academic adjustments are not retroactive. SSWD is located on the first floor of Lassen Hall 1008. Phone is 916-278-6955 and e-mail is sswd@csus.edu. For a complete listing of services and current business hours visit <https://www.csus.edu/student-affairs/centers-programs/services-students-disabilities/>

Basic Needs Support

If you are experiencing challenges with food, housing, financial or other unique circumstances that are impacting your education, help is just a phone call or email away! The CARES office provides case management support for any enrolled student. Email the CARES office at cares@csus.edu to speak with a case manager about the resources available to you. Check out the CARES website.

Title IX

The University requires faculty and staff to report any personal disclosures of sexual misconduct including rape, dating/domestic violence and stalking to the Title IX Coordinator. Students who do not wish to report their experience to me or the Title IX Coordinator may speak to someone confidentially by contacting Student Health and Counseling Services.

Sac State is committed to supporting students and fostering a campus environment free of sexual misconduct and gender-based discrimination. If a student chooses to disclose to a faculty or staff member an experience related to sexual misconduct which includes rape, relationship violence, or stalking, all faculty and staff are obligated to report this disclosure to the university's Title IX Coordinator. Sac State's Title IX Coordinator is Mary Lee Vance. Please email equalopportunity@csus.edu or (916) 278-5770. Upon receipt of the report, the Title IX Coordinator will contact you to inform you of your rights and options as a survivor and connect you with support resources, including resolution options for holding accountable the person who harmed you. Students who elect not to discuss their experience with the Title IX Coordinator can speak confidentially to the following confidential resources:

Student Health & Counseling Services at The WELL On Campus Phone Number: 916-278-6461

Website: www.csus.edu/shcs

Campus Confidential Advocate – Laura Swartzen Email: weave@csus.edu

On Campus Phone Number: 916-278-5850 (during business hours) WEAVE 24/7 Hotline: 916-920-2952

CSUS Grading Policy

Information for students regarding grading is provided here:

<https://www.csus.edu/manual/acad/umg05150.htm>

Other Resources

- The Office of Student Affairs maintains a list of campus resources/centers: <https://www.csus.edu/center/>
- Testing Center: <https://www.csus.edu/student-affairs/centers-programs/testing-center/>
- Library: <https://library.csus.edu/> for consultation : Rachel Stark, MS, AHIP, stark@csus.edu
- Services to Students with Disabilities: <https://www.csus.edu/student-affairs/centers-programs/services-students-disabilities/>

- Student Health and Counseling Services: Your physical and mental health are important to your success as a college student. Student Health and Counseling Services (SHCS) in The WELL offers medical, counseling, and wellness services to help you get and stay healthy during your time at Sac State. SHCS offers: Primary Care medical services, including sexual and reproductive healthcare, transgender care, and immunizations; urgent care for acute illness, injuries, and urgent counseling needs; pharmacy for prescriptions and over-the-counter products; mental health counseling, including individual sessions, group counseling, support groups, mindfulness training, and peer counseling; athletic training for sports injury rehabilitation; wellness services, including nutrition counseling, peer led health education and wellness workshops, and free safer sex supplies; violence and sexual assault support services. Most services are covered by the Health Services fee and available at no additional cost.
- Student Health and Counseling Services at The WELL: <https://www.csus.edu/student-life/health-counseling/>
- Student Academic Success and Education Equity Programs: <https://www.csus.edu/student-affairs/retention-academic-success/>
- Crisis Assistance and Resource Education Support (CARES): If you are experiencing challenges with food, housing, financial or other unique circumstances that are impacting your education, help is just a phone call or email away. The CARES office provides case management support for any enrolled student. <https://www.csus.edu/student-affairs/crisis-assistance-resource-education-support/>
- CHHS Student Success Center: <https://www.csus.edu/college/health-human-services/student-success/>
- Reading & Writing Center: <https://www.csus.edu/undergraduate-studies/writing-program/reading-writing-center.html>
- Peer & Academic Resource Center: <https://www.csus.edu/student-affairs/centers-programs/peer-academic-resource/>
- SMART Thinking (tutoring resource): <https://www.csus.edu/student-affairs/centers-programs/degrees-project/internal/documents/smarthinking.pdf>