



# California State University, Sacramento

## Department of Communication Sciences and Disorders

### GRADUATE (AuD) SYLLABUS

Table 1: Class Information

<b>Semester/Year:</b> Spring/2023	<b>Course:</b> CSAD 651: Objective measures	<b>Section:</b> 01
<b>Meeting Days:</b> Monday and Wednesday	<b>Meeting Times:</b> 3:00 PM-4:15 PM	<b>Location:</b> Folsom Hall 2604
<b>Instructor:</b> Hamid Motallebzadeh, Ph.D.	<b>Email:</b> h.motallebzadeh@csus.edu	<b>Phone:</b> 916-278-3589
<b>Office Location:</b> 2404E	<b>Office Hours/Appointments:</b> Monday and Wednesday 12:30-1:30 PM, 2:00-3:00 PM <u>by appointment only.</u>	

### Catalogue Course Description

**CSAD 651:** Objective measures

3 Units

**Prerequisite(s):** Admission to the Doctor of Audiology program, CSAD611, CSAD612, CSAD613, CSAD614, CSAD621, CSAD622, CSAD622L, CSAD623, CSAD624, CSAD631, CSAD632, CSAD641, CSAD641L, CSAD642, CSAD643

**Term Typically Offered:** Spring only.

**Description:** 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.

### Place of Course in Program

This course devotes additional time to the study of the auditory brainstem response and its clinical uses, which is important for newborn hearing screening and objective evaluation of hearing status. Otoacoustic emissions provide an opportunity to cross-check audiometric thresholds, identify hearing loss, and screen pediatric populations and people at risk for noise-induced hearing loss.

Table 2: Sacramento State Graduate Learning Goals (GLG)

Sacramento State Graduate Learning Goals (GLG)	Addressed by this course (Y/N)
<b>Disciplinary knowledge:</b> <i>Master, integrate, and apply disciplinary knowledge and skills to current, practical, and important contexts and situations.</i>	Y
<b>Communication:</b> <i>Communicate key knowledge with clarity and purpose both within the discipline and in broader contexts.</i>	Y
<b>Critical thinking/analysis:</b> <i>Demonstrate the ability to be creative, analytical, and critical thinkers.</i>	Y
<b>Information literacy:</b> <i>Demonstrate the ability to obtain, assess, and analyze information from a myriad of sources.</i>	Y
<b>Professionalism:</b> <i>Demonstrate an understanding of professional integrity.</i>	Y

<b>Intercultural/Global Perspectives:</b> <i>Demonstrate relevant knowledge and application of intercultural and/or global perspectives.</i>	N
<b>Research:</b> <i>Conduct independent research resulting in an original contribution to knowledge in the focused areas of their graduate program.</i>	Y

## Course Learning Outcomes

### GRADUATE 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 towards meeting each learning outcome by listing your grades on the table below over the course of the semester.

#### CSAD 651 specific student learning outcomes

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

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

## Textbooks and Materials

### **Required Textbooks and Materials**

Objective assessment of hearing. Plural Publishing (2010).

ISBN: 1597563536

ISBN-13: 978-1597563536

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

### **Recommended Textbooks and Materials**

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

ISBN: 1597563420

ISBN-13: 978-1597563420

Authors: Dhar S.& Hall J.W

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

ISBN: 1597564370

ISBN-13: 978-1597564373

Authors: Hunter, & Shanaz, N.

3. 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.

# Course Requirements/Components

## 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. 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 3:00 PM. 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. AP/IP will be initiated for students who do not meet the attendance policies.

## Exams & Makeups

Exams take place in the classroom on the day of the exam or through the testing center on campus. Makeups are allowed only with documentation of need (e.g., doctor's note, police report). Make-up exams will be scheduled during the last week of classes and must be completed at the testing center (\$6). If you plan to take the exams in the Testing Center, make sure to book at least 2 weeks in advance, for the same day within 1 hour of the scheduled test hour. Exams are closed book with no prepared notes and composed of True/False, multiple choice, short answer, and descriptive questions. Students remain individually responsible for being aware of your exam dates and times posted in the course syllabus or announcements in the class or Canvas.

## Course projects

Research is an important part of every class in the Au.D. program. Students are required to follow the APA format and use peer-reviewed research in all papers and written assignments.

## Late Assignments

Late assignments are accepted with a 20% penalty per day late up to 5 days late (at which point the grade would be 0%). This is true for both individual and group assignments.

## Audio Recording

Students may audio record lectures only if they have official accommodations.

## Student travel policy

<https://www.csus.edu/college/health-human-services/communication-sciences-disorders/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 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.

## TENTATIVE Course Schedule/Outline

Table 3: Course schedule and outline

Date	Topic/Lecture	Reference	Assignment/activity
1/22	CFA Strike		
1/24	Course introduction Expectation Principles of objective hearing assessment	Syllabus Chapter 1	
1/29	Introduction to immittance	Syllabus Musiek & Baran (Ch.1) Rousseau & Branski (Ch.1)	
1/31	Immittance measurements I		
2/5	<b>Conference</b>	Rousseau & Branski (Ch.1)	
2/7	<b>Conference</b>	Rousseau & Branski (Ch.1) Musiek & Baran (Ch.2)	
2/12	Immittance measurements II	Musiek & Baran (Ch.2)	Quiz 1
2/14	Wideband immittance	Musiek & Baran (Ch.3) Puria et al. (Ch.2)	
2/19	Otoacoustic emissions I	Musiek & Baran (Ch.3) Puria et al. (Ch.3-4)	
2/21	Otoacoustic emissions II	Musiek & Baran (Ch.3) Puria et al. (Ch.4)	Quiz 2
2/26	Otoacoustic emissions: Screening	Musiek & Baran (Ch.3) Puria et al. (Ch.8)	Assignment 1
2/28	Review 1		
3/4	<b>Exam 1</b>		
3/6	Electro-cochleography I	Musiek & Baran (Ch.4) Dallos & Fay (Ch. 2)	
3/11	Electro-cochleography II	Musiek & Baran (Ch.4) Dallos & Fay (Ch. 2)	Quiz 3
3/13	ABR I	Musiek & Baran (Ch.4) Dallos & Fay (Ch. 4)	
3/18	<b>Spring Recess</b>	Musiek & Baran (Ch.4) Dallos & Fay (Ch. 7)	
3/20	<b>Spring Recess</b>	Musiek & Baran (Ch.6)	
3/25	ABR II	Musiek & Baran (Ch.7)	Quiz 4
3/27	ABR for screening	Musiek & Baran (Ch.8-9)	Assignment 2
4/1	<b>Cesar Chavez Birthday</b>		
4/3	Review 2		
4/8	<b>Exam 2</b>	Jacobson et al. (Ch. 2)	
4/10	Auditory steady-state response I	Jacobson et al. (Ch. 3)	
4/15	Auditory steady-state response II	Jacobson et al. (Ch. 4)	
4/17	<b>Conference</b>	Jacobson et al. (Ch. 5)	
4/22	Lab	Jacobson et al. (Ch. 10-16)	Quiz 5
4/24	Differential Diagnosis	Rousseau & Branski (Ch.3-4)	
4/29	Special testing considerations		
5/1	Case review		
5/6	Project presentation		
5/8	Review 3		Assignment 3
5/13	<b>Final (3:00-5:00 PM)</b>		

## Grading Policy

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

The Final Grade will be based on a percentage of total points (100) and will be assigned as follows:

*Table 4: Course Requirements and Grade Distribution*

Source	Point	Grades Received
Quizzes	5x4	
Exams	3x20	
Assignments	3x2	
Course project (report, presentation, Q/A)	(5+5+2)	
Class attendance and activities	2	
Total + extra credit assignment(s)	100+4	

*Table 5: Course Grade Scheme*

%	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

# Knowledge And Skills Acquisition (KASA) For Certification in Audiology

CSAD 651 Objective Measures

## 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)

# ACAE Competencies

## Foundation:

- Explain theoretical and applied principles of acoustics, psychoacoustics, non-acoustic stimuli, and electronics as applied to the normal and disordered auditory and vestibular systems.
- Identify the various localized and systemic processes that lead to dysfunction and disease.
- Describe the effect that disease processes can have on the body and major organ systems, with special emphasis on the auditory and vestibular systems.
- Describe the structures and processes contributing to the development of auditory, vestibular and communication disorders and abnormalities.
- Explain the psychological and neurological bases for auditory and vestibular dysfunction and remediation.
- Critically evaluate the research foundation for hearing, balance and communication sciences.

## Diagnosis and Management:

- Apply audiologic diagnosis, treatment and management principles in diverse settings including, for example, private practice-based, educational and occupational/industrial environments.
- Apply critical thinking skills to assess the patient's auditory and vestibular status.
- Prescribe, perform and interpret clinical, laboratory and other diagnostic procedures and tests in consultation with other health professionals as may be required for proper management of the patient.
- Interpret and synthesize the findings from the patient's history, examination and other diagnostic tests and procedures in order to identify the etiology, the pathogenesis of the condition, and the diagnosis.
- Explain any relevant limitations for diagnosis and treatment and formulate a plan for consultation or referral, as appropriate.
- Discuss the findings, diagnosis and treatment options with the patient, parent or guardian, family, other health care or service providers, as well as any modifications or consequences that may occur over the course of treatment.

## Communications:

- Produce professional written reports on the diagnoses, evaluations and consultations encountered during clinical experiences.



## Online Resources

### **CSUS Library**

Access to the CSUS Library is a requirement of this course. Please become familiar with library access and login information as quickly as possible. As a CSUS student you should have free access to the library and its resources. The Department has access to the Health Sciences Librarian Rachel Stark. She is available to you for assistance and questions on how to utilize the library effectively. <https://library.csus.edu/directory/rachel-stark>

### **CANVAS**

This course is posted on CANVAS. All lecture material and required readings not in the textbook will be available only on CANVAS. Access to CANVAS is a requirement of this course. Laptops are available to loan out as needed. Please contact the Department for further information. Grades and statistics for the tests will be posted on CANVAS. Please forward interesting links to me as I will post them for the benefit of the entire class. All submissions must be in WORD or PDF format.

## Academic Conduct

Students enrolled in the Au.D. program must adhere to the Department and University policies on academic misconduct. Please see the department's policy on academic misconduct ("Policy on Student Academic and Clinical Conduct"). The following are expectations for professional behavior in the classroom:

- **Ethics:** Students must uphold the ethical standards set forth by professional bodies in the field (see Appendices C and D).
- **Respect:** Students should demonstrate respect to their peers, instructors, and staff.
- **Feedback:** Students are expected to self-reflect and modify their work in response to feedback, while displaying non-defensive behavior to suggestions.
- **Health:** Students should maintain their personal wellness and health, attending to any needs in a timely fashion in order to support their academic and professional growth.
- **Attire:** Students should dress appropriately for class. Classes may be held in clinic space, so students are expected to observe the clinic dress code.
- **Accountability:** Students are expected to be accountable, honest, and professional for their activities and communications. The general principles of ethical behavior should be applied to their coursework, evaluations, and examinations.
- **Language:** Students should demonstrate professional oral and written communication, including emails. Discretion and professional language should be used in all modalities, emphasizing constructive rather than reactive use.
- **Scholarship:** Students should take an active role in their learning, recognizing their deficiencies and seeking to correct them, as part of their commitment to lifelong learning.
- **Effort:** Students should collaborate and work to complete tasks and assignments on time or by the set deadline. Students are expected to follow through on all activities while maintaining professionalism and intellectual curiosity.

### **Email**

Students in the Au.D. program are required to maintain an active CSUS email address, which is linked to the student ID number. Official emails will be sent through CSUS email. Students are expected to regularly check their CSUS emails.

## Additional Information

### Attitudes & Technical Skills Required:

You will find that the following attitude will significantly contribute to your success in this online class:

- A positive attitude towards technology.
- An open mind towards online resources.
- Willingness to share your experiences with others.
- Strong analytical and critical thinking skills for when you "get stuck".
- Resourcefulness - don't be afraid to explore and ask questions.
- Time management

### Technical Assistance:

Seek help when you can't access Canvas or class materials.

- For technical assistance, contact the IRT Help Desk. Visit AIRC 2005 during [open hours](#) to speak with the IRT Service Desk Team, or call (916)278-7337. [IRT website.](#)
- For assistance with course materials, contact your instructor.

### 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 Disability Access Center (DAC), 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 DAC and meet with a DAC counselor to request special accommodation before classes start.

**Sacramento State Disability Access Center** 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, DAC provides consultation and serves as the information resource on disability related issues to the campus community. DAC 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 [dac@csus.edu](mailto:dac@csus.edu)

### **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](mailto: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](mailto: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](http://www.csus.edu/shcs)

Campus Confidential Advocate – Laura Swartzen

Email: [weave@csus.edu](mailto: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/umannual/acad/umg05150.htm>

As an instructor, one of my primary responsibilities is to help foster a safe learning environment in the classroom and throughout our campus. It is my goal that you feel able to share information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. In this class, sexual topics may emerge in readings, assignments, and class discussions. Making a personal connection with the topics addressed in this class can be meaningful. However, please be advised that 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 the following confidential resources:

### **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](mailto:stark@csus.edu)
- Disability Access Center: <https://www.csus.edu/student-affairs/centers-programs/disability-access-center/>
- 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): <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>