



# California State University, Sacramento

## Department of Communication Sciences and Disorders

### GRADUATE (AuD) SYLLABUS

Semester/Year: Fall/2022	Course: CSAD 612: Acoustics and Psychoacoustics	Section: 01
Meeting Days: Tuesday/Thursday	Meeting Times: 6:00pm -7:15pm	Location: FLS1051
Instructor:  Elizabeth Barragan, AuD	Email: Barragan@csus.edu	Phone: 916-278-4867
Office Location: TBA	Office Hours/Appointments: Tuesdays 7:15pm to 8:00pm by appointment only.	

### Catalogue Course Description

**Prerequisite(s):** Admission to doctorate program in audiology

3 units

**Term Typically Offered:** Fall only

### Place of Course in Program

**Basic properties of the acoustics of simple and complex sounds. Psychophysical aspects of frequency and pitch, intensity and loudness, and temporal processes will be discussed. Speech perception for listeners with normal hearing and those with hearing loss.**

### Sacramento State Graduate Learning Goals (GLG)

<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>Disciplinary Knowledge:</b> <i>Master, integrate, and apply disciplinary knowledge and skills to current, practical, and important contexts and situations.</i>	Y
<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

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.

## **CSAD 612 SPECIFIC STUDENT LEARNING OUTCOMES:**

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

1. Define the physical and psychophysical aspects of sound, sound measurement, and sound perception.
2. Describe the normal and disordered structure, function and perception for perceiving sound.
3. Explain how the physical and psychophysical aspects of sound relate to the audiologic evaluation, identification and rehabilitation of patients with hearing loss, and the acoustic environments for listening.

## **Textbooks and Materials:**

Speaks, C.E.(2017). *Introduction to sound, acoustics for the hearing and speech sciences* (4th ed.). Plural Publishing

Lentz, J.J. (2018). *Psychoacoustics: Perception of normal and impaired hearing with audiology applications* (1<sup>st</sup> ed.). Plural Publishing

## **Online Resources:**

- Course Materials are found on Canvas. All reading assignments, quizzes and exams are accessible via Canvas in the Modules for the Class.

## **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, and videos. Whether discussed in class or not.
- Students are required to have prepared answers for weekly discussion by answering study questions based upon the reading and videos.
- Students will be responsible for reading and reviewing one assigned journal article to the class during class discussion per semester. The journal articles will be assigned by the instructor and can be found here and in the course.

## **Class Participation:**

- Students will be required to attend classes for lectures and discussions. Students are required to be attentive and active participants in discussions.
- Students are expected to actively participate in class discussions and are required to have read the assigned

material prior to class meetings.

## Class Attendance:

Students are expected to arrive in class on time, prepared to participate and engage in classroom activities for in-person interactions. Students are responsible for class content, lecture materials, assignments, announcements, and must be aware of changes in the class schedule. Students are expected to be on time. Class begins at 6:00pm. There are no more than three unexcused absences allowed. If there are more than three unexcused absences, this will result in a reduction of grade and may result in needing an Academic Performance Improvement Plan (APIP).

<https://www.csus.edu/college/health-human-services/communication-sciences-disorders/internal/documents/audiology/csad-apip-policy-spring-2020.pdf>

Only documented emergencies or conflicts are considered an excused absence. Contact your instructor barragan@csus.edu prior to class if you are unable to attend class.

Given the full-time, intensive nature this doctoral program, it is important that students contact instructors if they are absent or are anticipating absence, especially over an extended period of time. In the case of the latter, the Au.D. Program Director must also be notified.

If you plan to attend an extracurricular professional meeting or conference you must complete a student travel proposal to request approval. Any approved travel requests during 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.

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

## Exams/Quizzes

**Exam/Quizzes absences:** No make-up examinations will be given unless there is a documented emergency for which you have written proof. Although emergencies are unforeseen, I must be notified before the exam takes place. 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/Quizzes procedures:** Exams and quizzes will be on Canvas. Exams are to be completed in class. Students will not be allowed to leave the classroom once the exam has begun.

**Exam 1-3 duration and completion:** 6:00 PM- 7:15 PM

**Quizzes duration and completion:** On Canvas

**Final Exam:** TBA

## Grading Policy:

Activity	Points Available	Percent of Grade
Quizzes (10 points x 7)	70 points	7%
Attendance/Participation	100 points	10%
Exam One	150 points	17 %
Exam Two	150 points	17 %
Exam Three	150 points	17 %
Final Exam	300 points	32 %
<b>Total Course Points Available</b>	920 points	

**Letter grades are assigned according to the following scores:**

Points	%	Letter
856-920	93-100	A
828-855	90-92.99	A-
801827	87-89	B+
764-800	83-86.99	B
736-763	80-82	B-
709-735	77-79	C+
672-708	73-76	C
644-671	70-72	C-
617-643	67-69	D+
580-616	63-66	D
552-579	60-62	D-
551	<60	F

**NOTE: Grade of B or higher or is required to count toward the minimum number of units needed to advance to candidacy**

## Course Policies/Procedures:

### 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 of the Au.D. Student Handbook).
- 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.

If a faculty member is not available during the semester, students will be contacted and advised how the course will proceed. This may include a change in instructor or modality.

### TENTATIVE COURSE SCHEDULE OF LECTURE TOPICS AND EXAMS

Date	Topic/Class Content	Readings	Assignment/Activities
8/30	Introduction to class		
9/1	The nature of sound: Properties of sound	Speaks- Ch. 1	
9/6	The nature of sound: Frequency/sound waves	Speaks- Ch. 1	Prepare for quiz 1
9/8	Simple harmonic motion	Speaks- Ch. 2	Quiz 1
9/13	Simple harmonic motion	Speaks- Ch. 2	Prepare for quiz 2
9/15	Acoustic impedance	Speaks- Ch. 3	Quiz 2
9/20	Logarithms	Speaks- Ch. 4	Prepare for quiz 3
9/22	Exam 1 review		Quiz 3
9/27	Exam 1		

9/29	Decibels	Speaks- Ch. 5	
10/4	Sound pressure level	Speaks- Ch.5	Prepare for quiz 4
10/6	Complex waves	Speaks- Ch. 6	Quiz 4
10/11	Resonance and filtering	Speaks- Ch. 6	
10/13	Exam 2 review		
10/18	Exam 2		
10/20	Introduction to psychoacoustics. Signal detection theory/classical psychophysical procedures	Lentz- Ch. 1 and Ch. 2	
10/25	No class		Prepare for quiz 5
10/27	Masking/critical band	Lentz- Ch. 3	Quiz 5
11/1	Loudness and the perception of intensity	Lentz- Ch. 4	
11/3	Temporal processing	Lentz- Ch. 5	Prepare for quiz 6
11/8	Pitch perception	Lentz- Ch. 6	Quiz 6
11/10	Exam 3 review		
11/15	Exam 3		
11/17	No class	Lentz- Ch.7	
11/22	Binaural hearing: Detection and discrimination	Lentz- Ch. 7	Prepare for quiz 7
11/29	Binaural hearing: Localization and lateralization	Lentz- Ch. 8	Quiz 7
12/1	Clinical implications: Perceptual consequences of hearing loss	Lentz. Ch. 8	
12/6	Clinical implications: Diagnostic audiology	Lentz. Ch. 8	
12/8	Review for final exam		
12/12-12/16	Finals week TBA		

**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.**

## Online Learning

For additional information, please review the [CSAD Handbooks](#) website

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

### Zoom/ Online Instruction privacy and relevant rights and responsibilities:

Any time that a class session is recorded during the COVID-19-related Remote Instruction Period, students will be notified. If students do not want their likeness during class participation included in the recorded class session, they may elect to not participate via video recordings. Recordings will be available for viewing during the Remote Instruction Period subject to the following:

Only students enrolled in the subject class during the Remote Instruction Period may view the recording.

- Students may not post or use the recordings in any other setting (e.g., social media) for any purpose. Students who violate this will be subject to student discipline, up to and including expulsion.
- Federal and California law as well as University policies protecting intellectual property rights and use of instructional materials (including any recordings of class sessions) remain in effect during the Remote Instruction Period.
- If faculty have any plan to use the recording for a different class in the future, the faculty member will need written FERPA consent from those students in the current class who are identifiable in any of the recordings. A FERPA consent form signed by all students in the course will also be needed if the recordings are made available to others beyond the classroom on a nonsecure digital platform.

### Important Tips for Success as an Online Learner

There are some basic technical skills and requirements that you will need to have to be successful in this online course. If you have difficulties using Canvas, please go through the [Canvas Student Tour](#).

- ***Begin planning now for private, uninterrupted time in your schedule*** to complete the assignments – preferably in at least one-hour blocks and at least three times a week. It can be easy to fall behind!
- *Check your email account regularly* for updated information. We will be using your Saclink email account for communication. Use Saclink e-mail for private messages to the instructor and other students.
- Read directions carefully.
- For online communication, conventions of on-line etiquette ("netiquette"), which include a courtesy to all users, will be observed. Please see [Guidelines for Online Discussions](#).

### 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 education
- Willingness to share your experiences with others
- Strong analytical and critical thinking skills for when you "get stuck"
- Resourcefulness - don't be afraid to click on links and explore and ask questions
- Time management

Online learning requires only basic technical skills:

- Be competent with file management (for example, creating a folder on your desktop, moving files from one location to another, finding a saved file)

- Possess internet navigation skills
- Update your Internet browser
- Send and receive email
- Create and save documents (Word, PowerPoint, Excel or HTML)
- Toggle between two open software applications on your computer
- Copy text from a word processing program and paste them into another program

## 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

## Spam and Phishing Scams

- Learn how to stay safe and protect yourself from hackers who may try to access your personal information: [Don't Fall for a Phishing Scam](#)
- Use anti-virus, anti-spyware, and anti-malware software. [Sac State's Software and Tools](#) available for download.
- Use pins and passwords to secure your computer and devices- don't share your password with anyone. Use strong passwords that include a combination of letters and numbers that no one can guess.

## Canvas Student App

Canvas is fully functional on many types of smartphones and tablets. Compatible devices include platforms such as iPhone/iPad/iPod Touch, and Android. However, it is recommended that you do not solely rely on one of these devices to complete your online course work. Access to a computer is still needed for many online activities.

Visit the [Mobile section](#) of the [Canvas Guides](#) website for more information.

## 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: <http://www.csus.edu/umannual/student/stu-0100.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](mailto:sswd@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](#).

## 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)
- Services to Students with Disabilities: <https://www.csus.edu/student-affairs/centers-programs/services-students-disabilities/>
- 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>

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

CSAD 612 Acoustics and Psychoacoustics

## **Scientific and Research Foundations**

- The basics of communication sciences (e.g., acoustics, psychoacoustics and neurological processes of speech, language, and hearing)

## **Standard II-A: Foundations of Practice**

- A4. Principles, methods, and applications of acoustics, psychoacoustics, and speech perception, with a focus on how each is impacted by hearing impairment throughout the life span