



California State University, Sacramento

Department of Communication Sciences and Disorders

Semester/Year: Fall 2024	Course: CSAD673—Pharmacology & Ototoxicity	Section: 1
Meeting Days: Mondays	Meeting Times: 6pm to 650pm	Location: online zoom
Instructor: Mary Lo Thomas, Pharm.D.	Email: mary.lo.thomas@csus.edu	Phone: 916-278-2935
Office Location: Online zoom	Office Hours/Appointments: By Appointment	

Catalogue Course Description:

CSAD 673. Pharmacology & Ototoxicity. 1 Unit

Prerequisite(s): Admission to Doctor of Audiology Program; CSAD611, CSAD612, CSAD613, CSAD614, CSAD621, CSAD622, CSAD622L, CSAD623, CSAD624, CSAD631, CSAD632, CSAD641, CSAD641L, CSAD642, CSAD643, CSAD651, CSAD652, CSAD653, CSAD661, CSAD662

Term Typically Offered: Fall only

This web-based course introduces the students to the fundamentals of pharmacology, pharmacokinetics, and pharmacodynamics. Students will learn about the mechanisms of various cochleotoxic and vestibulotoxic drugs, their effects on the auditory system, and the subsequent management of ototoxicity.

This course is important because it introduces students to the mechanisms and effects of various drugs and medications that can cause hearing loss, tinnitus, and/or imbalance. Students should be aware of these drugs in order to identify patients who may experience changes to their hearing and to manage the resulting hearing loss in patients taking these medications in order to improve their quality of life.

Place of Course in Program

This course is generally taken by students in the Fall semester of the third year of the graduate program.

Sacramento State Baccalaureate Learning Goals for the 21st Century (BLG)	Addressed by this course (Y/N)
Competence in the Disciplines: <i>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.</i>	Y
Knowledge of Human Cultures and the Physical and Natural World <i>through study in the sciences and mathematics, social sciences, humanities, histories, languages, and the arts. Focused by engagement with big questions, contemporary and enduring.</i>	N
Intellectual and Practical Skills, Including: <i>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.</i>	Y
Personal and Social Responsibility, Including: <i>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</i>	N
Integrative Learning**, Including: <i>synthesis and advanced accomplishment across general and specialized studies</i>	Y

Course Learning Outcomes:

CSAD673 Syllabus and Course Outline

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.

CSAD 673 SPECIFIC STUDENT LEARNING OUTCOMES:

1. Define ototoxicity
2. Define pharmacodynamics and pharmacokinetics
3. Describe mechanisms of ototoxicity
4. State the definition, purpose, mechanism, characteristics, and potential ototoxic (cochleotoxic or vestibulotoxic) effects of various drug classes on the auditory and/or vestibular system
5. Describe the process for monitoring hearing thresholds in patients taking medications that are ototoxic

Course Learning Outcome	Components Indicating Competence	Grades Received
1	Quiz 1, Final	
2	Quiz 1, Final	
3	Quiz 2, Final	
4	Quiz 3-12, Final, Project	
5	Quiz 12, Final	

Textbooks and Materials:

Campbell, K.C. (2006) *Pharmacology and Ototoxicity for Audiologists*. Delmar Cengage Learning (required chapters will be provided on Canvas for selected weeks)

Articles related to specific topic will be provided via link or on CANVAS.

Online Resources:

CANVAS: CSAD673
csus.instructure.com

Course Policies/Procedures:

1. **Attendance:** Professional attendance is expected for class meetings. Students are encouraged to attend all scheduled class meetings and to take advantage of every opportunity for learning within the context of the class. Your grade will not be reduced if you are unable to attend lectures. Documentation of the absence may be required.

2. Students are responsible for all materials covered in their absence. Materials for this course will be posted on Canvas. Students are responsible for accessing and locating materials and downloading appropriate resources to learn the material for this class. Internet access is required. As within a given week, course materials may be completed at the students' leisure.

3. **Class meetings, participation:** It is expected that students will complete all readings prior to class. Teaching strategies will include lectures. Active listening, critical thinking, and discussion are expected in this course.

4. Technology use: It is a course expectation that students will participate fully in class discussion and give classmates and discussion full and undivided attention. Please silence your cell phone to avoid distractions during class time.

5. Quizzes: A 10 point quiz will be released after each lecture. These quizzes will be completed on Canvas and will be due as stated by the professor.

6. Final Exam will be online and must be completed during the scheduled timeframe. There will be one exam. Examination will be based on class lectures and discussions. Exam may be composed of multiple choice, true/false, matching and/or short answer questions. Make-up exams will be scheduled during dead week. Students who fail to complete the exam by the last day of the final exam period may receive a "0" on their exam(s) as per instructor discretion.

Online exams via Canvas: Quizzes are to be completed independently, though students may utilize their individual notes and texts. It is expected that students will maintain all aspects of academic integrity.

7. Study Guides: Relevant materials will be included in each lecture.

8. Course Evaluations: At the completion of the course, each student is expected to comment on the nature of this course. This procedure allows the instructor to modify segments of the course in order to make it more applicable to future students' educational and professional growth.. Students are encouraged to use this modality as a direct and appropriate means of voicing concerns. Your voice matters.

Grading Policy:

Students will have the opportunity to earn points towards their grade through quizzes, final exam, and final project.

Source	Points	% of Grade
Quizzes	150	37%
Final Exam	150	37 %
Project	100	26 %
Total	400	100 %

Letter grades are assigned according to the following scores

Points	%	Letter
368-400	92-100	A
360-367	90-91	A-
348-359	87-89	B+
332-347	83-86	B
320-331	80-82	B-
308-319	77-79	C+
292-307	73-76	C
280-291	70-72	C-
268-279	67-69	D+
256-267	64-66	D
240-255	60-63	D-
<240	<60	F

Note: A grade of “B” or higher is required to count toward the minimum number of units needed to advance.

Au.D. Program Policies

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.

Attendance

Students are expected to arrive in class on time, prepared to participate and engage in the classroom. Students are responsible for class content, lecture materials, assignments, announcements, and must be aware of changes in the class schedule. Students are advised that instructional faculty may include an attendance policy in courses, which may require attendance as part of the student’s course grade. These policies will be set in the syllabus.

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. Attendance for clinical practica is outlined in the clinic handbook.

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.

Communication and Emergency Information

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/Outline:

Date	Topic/Class Content	Readings	Assignment/Activities	Notes
8/26, 9/9	Module 1			
	What is ototoxicity?	Chapter 1		
	The FDA pharmacology	Chapter 3 Chapter 4		
	Pharmacodynamics	Chapter 2		
	Pharmacokinetics	Chapter 2		
	Review of anatomy and physiology	Chapter 7 Chapter 8		
	Mechanisms of ototoxicity	Chapter 7		
	Drugs commonly used in otologic care	Chapter 5		
9/16, 9/23, 9/30	Module 2: Ototoxicity and Hearing Loss Classes and subclasses of Drugs			
	NSAIDs, aspirin, quinine	Chapter 13		
	Chemotherapeutics	Chapter 10		
	Antibiotics	Chapter 11		
	Antivirals, antifungals, antitubercular Drugs			
	Diuretics	Chapter 12		
	Beta Blockers			
	ACE-inhibitors, anti-convulsants, anti-Parkinson's			
	Immunosuppressants, anti-rheumatoid, anesthetics			
	Industrial chemicals and solvents	Chapter 14		
	Herbal supplements			
	Erectile dysfunction Drugs			

10/7, 10/14, 10/21	Module 3: Ototoxicity and Tinnitus			
	Anti-depressants			
	Anti-migraine			
	Hypnotics			
	Antihistamines			
	Anti-arrhythmics			
	Calcium channel blockers			
10/28, 11/4, 11/18	Module 4: Vestibulotoxicity			
	Non-steroidals	Chapter 17 Chapter 18		
	Opioids			
	Dementia drugs, myorelaxants			
	Anti-emetics			
	Noise exposure and ototoxicity			
	Otoprotective Agents	Chapter 19		
12/2	Module 5: Audiologic Monitoring			
	Ototoxic monitoring protocol			
	Future Research			

Online Learning

For additional information, please review the CSAD Handbooks website

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

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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.

Locations of gender-neutral restrooms on campus:

Maryjane Rees Language, Speech and Hearing Clinic, 2nd Floor of Folsom Hall

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.

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](#).

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 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

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