



California State University, Sacramento

Department of Communication Sciences and Disorders

GRADUATE (AuD) SYLLABUS

Semester/Year: Spring 2021	Course: CSAD 624 Genetics for Audiology	Section: 01
Meeting Days: Tuesdays	Meeting Times: 6:00 PM-6:50 PM	Location: Zoom
Instructor: Meghann Keehner, Au.D.	Email: meghann.j.keehner@csus.edu	
Office Location: Zoom	Office Hours/Appointments: Tuesdays 7:00 PM-7:30 PM or by appointment (via Zoom) *Please note that I do not typically check email or Canvas messages/posts during the hours of 7pm and 7am on weekdays, and I do not check these at all on the weekends in order to devote time to family, rest, and religious observances. Otherwise, you can expect to receive a response to your message within 6 hours, often much sooner.	

Catalogue Course Description: 1 Unit

Prerequisites: Admission to Doctor of Audiology program; CSAD 611, CSAD 612, CSAD 613, CSAD 614

Term typically offered: Spring only

Description: Introduction to genetics, inheritance, and causes of hearing loss and balance disorders.
Place of Course in Program

This course introduces students to the basics of genetics, including modes of inheritance, mutations, and causes of hearing loss. Focus will be on syndromic and non-syndromic causes of hearing and balance disorders.

Sacramento State Graduate Learning Goals (GLG)	Addressed by this course (Y/N)
Disciplinary knowledge: <i>Master, integrate, and apply disciplinary knowledge and skills to current, practical, and important contexts and situations.</i>	Y
Communication: <i>Communicate key knowledge with clarity and purpose both within the discipline and in broader contexts.</i>	N
Critical thinking/analysis: <i>Demonstrate the ability to be creative, analytical, and critical thinkers.</i>	Y
Information literacy: <i>Demonstrate the ability to obtain, assess, and analyze information from a myriad of sources.</i>	Y
Professionalism: <i>Demonstrate an understanding of professional integrity.</i>	Y
Intercultural/Global Perspectives: <i>Demonstrate relevant knowledge and application of intercultural and/or global perspectives.</i>	N
Research: <i>Conduct independent research resulting in an original contribution to knowledge in the focused areas of their graduate program</i>	Y

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 624 SPECIFIC STUDENT LEARNING OUTCOMES:

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

1. Describe the basic concepts of genetics
2. Construct a pedigree chart
3. Describe the Mendelian inheritance
4. Describe the chromosomal basis of inheritance
5. Distinguish between different mechanisms of transmission
6. Differentiate between mitosis and meiosis
7. Differentiate between DNA and RNA and their respective transcriptions
8. Explain structural mutations and their relation to inheritance
9. Discuss ethical issues and controversies with genetic testing
10. List syndromic and non-syndromic causes of hearing loss and deafness

Course Learning Outcome	Components Indicating Competence	Grades Received
1	Class participation, Quizzes	
2	Class participation; Final projects	
3	Class Participation, Quizzes	
4	Class Participation, Quizzes, Discussion Board Assignment	
5	Class Participation, Quizzes, Embryology Project	
6	Class Participation, Quizzes	
7	Class Participation, Quizzes	
8	Class Participation, Quizzes, Final Project, Embryology Project	
9	Class Participation, Quizzes, Journal Assignment	
10	Class Participation, Quizzes, Final Project	

Textbooks and Materials:

Required:

Jones, S.M. and Jones, T.A. (2011). Genetics, Embryology, and Development of Auditory and Vestibular Systems. Plural Publishing.

ISBN-13: 978-1-59756-201-0

ISBN-10: 1-59756-201-7

Online Resources:

Canvas

Audiology Online - <https://www.audiologyonline.com/>

Audiology Pathologies - <http://www.audsim.com/audpath/>

Course Requirements/Components:

Course Format: Lecture (Zoom)

Unless otherwise noted by the instructor, all Spring 2021 CSAD courses are being taught synchronously. Class meetings will be scheduled by your instructor through Zoom through Canvas.

Class Participation: 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. Readings are required and it is expected that they will be read prior to the class in which they will be discussed. The class participation grade will be calculated by students' ability to explain reading material when asked as well as by students' meaningful, thoughtful contributions to further class discussion with comments and/or questions.

Class Attendance: Classroom (Zoom) 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. If a student becomes ill and/or is placed under quarantine due to the COVID-19 pandemic, with written proof, adjustments will be made so as not to penalize the student.

Class Assignments: Course grades will be based on class participation, discussion board posts, journal club participation/presentation(s), frequent quizzes, a midterm exam, and a comprehensive final exam. All written assignments will be submitted in APA format, points will be removed for formatting errors. All assignments should be submitted in Word.

Class Participation: Participation counts for 13% of your grade in this course. Students will be called upon to keep everyone attentive and to see who has completed the reading. Group work and short presentations on reading materials will also periodically be assigned during class. Being able to express ideas and speak in a group are important skills that will serve you well throughout your career. Behaviors that count toward participation: asking questions, answering questions, making comments, and constructively disagreeing with something in the text or said in class by me or another student. Value-added behaviors that will earn you extra points: comments that relate to material in the text, sharing relevant experiences, and responding to something another student says (including answering a question they ask).

Discussion Board Posts: Discussion board posts will require a response of at least 250 words, citing material (with APA citations) as well as a meaningful response to other student's posts (see assignment in Canvas for full description).

Article Participation/Presentation(s): Each student will be responsible for presenting and contributing meaningfully, to the discussion of the presented article (via discussion board on Canvas). To acquire full points, both presenting and participating in discussion posts must be completed. See the assignment in Canvas for a full description.

Quizzes: Quizzes will be equally weighted and based on reading material. Quizzes will be due via Canvas, prior to the beginning of the class period unless otherwise noted. See the assignment in Canvas for a full description.

Grading Policy:

Source	Points	% of Grade
Class Participation	80	13
Discussion Board	40	6
Article Assignment	60	9
Embryology Timeline	50	8
Disorder Project	250	40
Quizzes	150	24
Total Points Available	630	

Grading – Letter grades are assigned according to the following scores:

Letter	%
A	93-100%
A-	90-92.99%
B+	87-89.99%
B	83-86.99%
B-	80-82.99%
C+	77-79.99%
C	73-76.99%
C-	70-72.99%
D+	67-69.99%
D	63-66.99%
D-	60-62.99%
F	< 60%

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).
- **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 classroom activities for both in-person and synchronous/virtual interactions. 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.

Late Work

No late work will be accepted unless there is a documented emergency for which you have written proof, that occurred the day the work was due. Any missed assignments due to the documented emergency will be due the day the student is able to return to class. It is incumbent upon the student to be certain that technological difficulties do not cause deadlines to be missed.

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.

I will respond to an email that meets the following guidelines within 6 hours on a weekday (not between the hours of 5:00 PM and 5:00 AM) and 48 hours on a weekend (I will not respond during University or Federally-recognized holidays):

- a. I only respond to emails **posing questions** that can be answered in 1-3 sentences. For detailed questions or other discussions, please come to my office hours.
- b. I do not respond to emails that request information that can be found on the class Canvas page, the University or CSAD web pages or the syllabus.
- c. To discuss results on graded materials, please come to my office hours.

TENTATIVE Course Schedule/Outline:

Date	Topic/Class Content	Readings	Assignment/Activities	Notes
1/26	Intro to class History of Genetics Overview of the Ear	Textbook Ch.1	Class Participation Intro Assignment – open for 1 week	
2/2	Intro to Biology Cells and Tissues	Textbook Ch 2	Quiz 1 Due Class Participation	
2/9	Basic Concepts of Genetics Chromosomes DNA vs RNA Mitosis vs Meiosis Transcription	Textbook Ch 3 Pgs 53-71	Quiz 2 Due Class Participation	
2/16	Basic Concepts Continued Disorders and Abnormalities Mendel Inheritance	Textbook Ch 3 Pgs 71-88	Quiz 3 Due Class Participation Punnett Square Assignment – open for 1 week	
2/23	Basic Embryology Environmental Factors	Textbook Ch 4	Quiz 4 Due Class Participation Embryology Timeline Project	
3/2	Embryology of Outer and Middle Ear	Textbook Ch 5	Quiz 5 Due Class Participation Embryology Timeline Project	
3/9	Embryology of the Inner Ear	Textbook Ch 6	Quiz 6 Due Class Participation Embryology Timeline Project	
3/16	Embryology of Inner Ear Function	Textbook Ch 7	Quiz 7 Due Class Participation Embryology Timeline Project – Open for 1 week	
3/23	Spring Recess			
3/30	Genetic Testing Counseling, Testing, and Ethics	Articles TBD	Class Participation Journal Article Assignment – Due prior to next class	

4/6	Ethics Presentation and Discussion		Journal Article Assignment Due Ethics Presentations Presentation Follow Up Assignment Class Participation	
4/13	Syndrome Causes	Articles TBD	Quiz 8 Due Class Participation	
4/20	Disorders Part 1	Articles TBD	Quiz 9 Due Class Participation	
4/27	Disorders Part 2	Articles TBD	Quiz 10 Due Class Participation	
5/4	Gene Therapy	Articles TBD	Discussion Board Due	
5/11	Project Presentations		Pathology Assignment	
5/18	Project Presentations		Pathology Assignment	
5/24-5/28	Finals Week			

Online Learning

For additional information, please review the [CSAD Handbooks](https://www.csus.edu/college/health-human-services/communication-sciences-disorders/student-resources.html) 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.

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>

Knowledge And Skills Acquisition (KASA) For Certification in Audiology

624 Genetics for Audiology

Scientific and Research Foundations

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

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
- A10. Effects of hearing impairment on educational, vocational, social, and psychological function throughout the life span

Standard II-B: Prevention and Screening

- B1. Educating the public and those at risk on prevention, potential causes, effects, and treatment of congenital and acquired auditory and vestibular disorders
- B5. Recognizing a concern on the part of medical providers, individuals, caregivers, or other professionals about hearing and/or speech-language problems and/or identifying people at risk to determine a need for hearing screening
- B9. Referring persons who fail the hearing screening for appropriate audiologic/medical evaluation

Standard II-C: Audiologic Evaluation

- C1. Gathering, reviewing, and evaluating information from referral sources to facilitate assessment, planning, and identification of potential etiologic factors
- C4. Identifying, describing, and differentiating among disorders of the peripheral and central auditory systems and the vestibular system