



California State University, Sacramento

Department of Communication Sciences and Disorders

UNDERGRADUATE SYLLABUS & COURSE OUTLINE

Semester/Year: Fall 2019	Course: CSAD 110 Physics of Sound and Phonetics.	Section: 50
Meeting Days: Monday/Wednesday	Meeting Times: 9:00 AM-10:50 AM	Location: Folsom Hall 1050
Instructor: Dr. Lisa D'Angelo, CCC-SLP	Email: dangelo@csus.edu	Phone: 530-400-1970 (text, emergency only)
Office Location: Folsom Hall 2316	Office Hours/Appointments: Wednesday 3:30-4:30, Thursday 11:30-1:30 in Folsom 2316 or by appointment	

Catalogue Course Description:

CSAD 110. Physics of Sound and Phonetics.4 Units

Prerequisite(s): [CHDV 30](#), [DEAF 51](#), [PSYC 2](#), and [STAT 1](#)

Corequisite(s): [CSAD 111](#)

Term Typically Offered: Fall only

Physical production, acoustic characteristics of sounds of speech. International Phonetic Alphabet as applied to speech sounds; practice in phonetic transcription of dialects and deviant speech; applications in speech education, speech and hearing therapy. Introduction to physiological acoustics, psychoacoustics, and acoustic phonetics. Perception of speech including voice, resonance, individual speech segments; instrumentation for acoustic and perceptual analysis of speech.

Place of Course in 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>	
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>	
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>	
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>	
Integrative Learning**, Including: <i>synthesis and advanced accomplishment across general and specialized studies</i>	

Course Learning Outcomes:

UNDERGRADUATE

Mastery of each student-learning outcome listed below is indicated by a grade of C 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 C. 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 XYX SPECIFIC STUDENT LEARNING OUTCOMES:

1. Students will be able to identify and discuss the physical and perceptual properties of the production of specific sounds.
2. Students will be able to accurately identify and describe both the articulatory and acoustic properties of speech sounds (vowels, consonants, diphthongs) using verbal descriptions and graphic representations of these properties.
3. Students will be able to accurately identify and critically evaluate how research in speech science is applied to clinical treatment in speech pathology and audiology.
4. Students will be able to use computer resources to improve learning process.
5. Students will be able to describe the psychoacoustic co-relates of sound namely pitch, loudness and timbre.
6. Students will be able to identify the role played by the critical band in the understanding of auditory information.
7. Students will demonstrate competence in transcribing normal and abnormal speech into the International Phonetic Alphabet.
8. Students will understand phonemic versus phonetic contrasts as well as the nature of sound variation in speech production.
9. Students will understand basic anatomy and physiology of the speech mechanism.
10. Students will understand the basic process of early articulation and phonology development.
11. Students will understand the difference between an articulation approach and a phonological approach evaluating and treating speech disorders.
12. Students will understand that cultural pronunciation differences exist and do not constitute “disordered” speech.
13. The student will be able to accurately describe the theory and practice of physiologic, psychoacoustic, acoustic and perceptual phonetics.

Course Learning Outcome	Components Indicating Competence	Grades Received
1	Quiz 1,2, & 3; Lab 1; Exam 1	
2	Quiz 3; Exam 1; Spectrogram	
3	Exam 1	
4	Lab 2	
5	Quiz 1, 2, & 3; Exam 1	
6	Lab 2, Exam 1	
7-8	Exams 3, & 4	
9	Exam 2	
10-11	Exams 3 & 4	
12	Exams 3 & 4	
13	Exam 4	

Textbooks and Materials:

COURSE MATERIALS:

Required Texts & Audio CD:

Small, Larry. (2019). *Fundamentals of Phonetics: A Practical Guide for Students, 5/E*
Boston: Pearson.

Or

Small, Larry. (2019) **Fundamentals of Phonetics: A Practical Guide for Students (Subscription), 5th Edition (eText)**
Boston: Pearson.

Raphael, L.J. Borden, G.J., Harris, K.S., (2011). *Speech Science Primer: Physiology, Acoustics and Perception of Speech*. Sixth Edition. MA: Lippincott, Williams & Wilkens.

Optional: Audio CD Package for *Fundamentals of Phonetics: A Practical Guide for Students, 4/E*
(Package ISBN# 0134204816 includes both text and CD)

Other Required Materials:

Headphones and attached headset microphone

This can be an inexpensive pair but must have a microphone with at least 20-20K Hz range. Most of the ones at the Hornet Bookstore and Best Buy/Target were around \$20. **YOUR EARBUDS WITH MICROPHONE FROM YOUR PHONE MAY NOT WORK, AS IT MAY NOT PROVIDE ADEQUATE SOUND RANGE FOR RECORDING.**

USB Flash/Jump Drive

At least 128 mb so you can save sound files and images for lab reports. You should be able to find 8GB for less than \$20.

Online Resources:

Canvas

Most of the handouts and materials for this class will be available on **Canvas**.

Canvas: This course is embedded into a Web Course format. You **must** have an active csus email and use CSUS's Canvas platform to access lectures, course assignments, class discussions and class email. See participation note below.

Course Requirements/Components:

ASSESSMENT:

Student learning outcomes will be assessed with the following assessment strategies:

Assignments (5 points each to total 65 points): Thirteen assignments are scheduled throughout the semester. These are no-fault assignments that will receive full points so long as they are submitted on time in class. These assignments may be discussed in class but individual feedback is limited unless you sign up/schedule an office visit with the graduate teaching assistant or the instructor. The answers will be released to you after the homework submission date has passed. I encourage you to organize study groups and go over these assignments together to prepare for the exams.

Late Assignments: I will not accept **ANY** late assignments (unless you are medically excused as in injured, hospitalized, etc.). It is your responsibility to get them to me on time. If you are unable to turn them into me in class then I will accept them earlier. PLEASE make arrangements with me if this is the case. This is to prepare you for the many reports, letters, and IEPs that you as a clinician will be writing in the future. You simply cannot be late with these.

Quizzes (10 points each to total 30 points)

There will be three short quizzes at the beginning of the semester.

Exams (100 points each to total 400 points): There will be four exams (including the final). All exams are cumulative. Exam dates are tentative except final exam. All exams will be a combination of multiple choice, short answer, fill-in, essay and transcription. All exams will be cumulative covering all material from the course up to the date of the exam. This is necessary since the material requires a build up of knowledge throughout the semester. During the transcription sections of the course, the exams come up quickly after each other. Please pay close attention to the syllabus/schedule so you are well prepared for all exams.

Labs (50 points each to total 100 points): There will be two lab exercises. Each lab day students will complete and turn in completed lab write-ups. Lab write-ups include written responses to questions. *Labs may be completed in pairs or small groups but the write-up of the lab should be done individually.* Complete instructions will be available in the assignment box on Canvas.

Spectrogram (55 points): Students will be given one spectrogram of a sentence at the midpoint of the semester and will be asked to interpret what the sentence says over the course of the semester. Results will be graded according to how well the student identifies the sentence. This will be judged in terms of acoustically definable distinctive features and feasible linguistic entities.

Late Labs & Spectrograms: These may be turned in late; however, 10 points will be deducted for every day late (including weekend days) up to 50% of total points.

TopHat (50 points): This is a participation app that allows for real time questions and answers in class using your phone or computer. It works with all phones including flip versions. There is a cost for the semester or the entire school year. Several professors in our department use this platform. I use the points based on your participation not accuracy. You cannot participate and get points unless you are in class.

Grading Policy:

Your final Grade will be computed as follows:

Assignments	65 points
3 Quizzes	30 points
4 Exams	400 points
2 Lab Reports	100 points
Spectrogram	55 points
TopHat points	50 points

Letter grades are assigned according to the following scores:

The Final Grade will be computed as a % of points earned out of a total of 700 points as follows:

94.5 – 100	A	89.5 – 94.4	A –	86.5 – 89.4	B+	83.5 – 86.4	B
79.5 – 83.4	B –	76.5 – 79.4	C+	73.5 – 76.4	C	69.5 – 73.4	C –
66.5 – 69.4	D+	63.5 – 66.4	D	59.5 – 63.4	D –	below 59.5	F

Points	%	Letter
661+	94.5-100	A
626-660	89.5-94.4	A-
605-625	86.5-89.4	B+
584-604	83.5-86.4	B
556-583	79.5-83.4	B-
535-555	76.5-79.4	C+
514-534	73.5-76.4	C
486-513	69.5-73.4	C-
465-485	66.5-69.4	D+
444-464	63.5-66.4	D
416-443	59.5-63.4	D-
0-415	Below 59.5	F

Course Policies/Procedures:

Policy on making up exams: No make-up exams are given unless there is a documented medical emergency with written proof. **Any make up exams are scheduled during dead week in an essay format.**

Being late for an exam will not automatically entitle you to extra time. Please make sure you arrange your schedules to be here on time for the exams. If you miss a short quiz because you are late for class, or absent you will not be able to make it up, so try not to miss any quizzes.

Policy on attendance: *Students are expected to attend class on a regular basis.* If you are unable to attend a class I need to be informed by you before class begins. I will also be utilizing TopHat for attendance and daily questions for participation. If you arrive late, please enter quietly and take your seat without disturbing the class. Let me know after class that you arrived so that I can mark your attendance as late, rather than absent. Please note that students who are not counted with TopHat attendance, and have not emailed or called me prior to class will be counted as absent. Three or more of these absences will result in your final course grade being lowered by one letter grade. An absence can be excused with a written note or paper evidence of emergency (Dr. note, tow truck bill, etc.).

Drop/Add: Students may drop classes according to University/Department Policy. You should speak to me if you would like to add the course before attempting to do so. Students must fill out appropriate forms and meet University deadlines to drop or add classes.

TENTATIVE Course Schedule/Outline:

<u>Week</u>	<u>Date</u>	<u>Topic</u>	<u>Readings/Practice/Activities</u>
1	Aug 26	Introduction: Course Overview Language, Phonetics and Speech Production	Assignment 1: Log on to Canvas before and see instructions for Assignment 1 (Due Aug 28)
	Aug 28	Acoustics 1 and 2: Simple Harmonic Motion, Complex Waves, etc.	Reading: Raphael, Chapter 2: pp. 17-29 Assignment 1 Due
2	Sept 2	Labor Day--Holiday!!	
	Sept 4	Quiz #1 Acoustics 2 & 3: Physical and Perceptual Properties	Reading: Raphael, Chapter 2: pp. 29-37

3	Sept 9	Acoustics 3: Physical and Perceptual Properties Acoustic Analysis/Measurement Techniques	Reading: Raphael, Chapter 13: pp. 276-285 Raphael, Chapter 14: pp. 287-297
	Sept 11	Quiz #2 Resonance & Source Filter Theory	Reading: Raphael, Chapter 2: pp. 37-39
4	Sept 16	Resonance & Source Filter Theory	Reading: Raphael, Chapter 5: pp 96-98
	Sept 18	Lab 1 (class and home project) Acoustics of Vowel Production	Reading: Raphael, Chapter 5: pp. 93-104 <i>Reminder: Install Pepper Font on your computer (if you can, but not required)</i>
5	Sept 23	Lab 1 finish	Bring ALL course materials to class
	Sept 25	Quiz #3 TBA: Front Vowels, Back Vowels, Diphthongs and Formant Transitions	Reading: Raphael, Chapter 5: pp 104-112 <i>Lab 1 Due</i>
6	Sep 30	Lab 2: Acoustics Lab Exam Review (review quiz 1, 2, 3)	Bring ALL course materials to class
	Oct 2	<u>Exam 1</u>	
7	Oct 7	Lab 2: Acoustics Lab continued	
	Oct 9	Phonetic Sciences	Reading: Small, Chapter 1
8	Oct 14	Linguistic Phonetics (cont.): Language Systems, Morphology, Phonology Phonemes vs. Allophones Minimal Pairs	Reading: Small, Chapter 2: pp 9-19 Small, Chapter 2: pp 29-30 Assignment 2-1 (due Oct 23) Assignment 2-2 items #1 & #2 (due Oct 23)

	Oct 16	Phonology Phonotactics: Syllables, Lexical Stress, Exercises in Stress	Reading: Small, Chapter 2 pp 20-23 Small, Chapter 2 pp 24-33 Assignment 2-2 Items #3 <i>through</i> #8 (due Oct. 23)
9	Oct 21	Speech Production Systems Extra Lab 2 time	Reading: Small, Chapter 3
	Oct 23	<i>Exam 2</i>	Assignments due
10	Oct 28	Vowels Front Vowels Extra Lab 2 time	Reading: Small, Chapter 4 Assignment 4-1 (due Nov 13)
	Oct 30	Back and Central Vowels r-Colored Vowels & Diphthongs	Assignment 4-2 (due Nov 13) Assignment 4-3 (due Nov 13) Assignment 4-4 (due Nov 13)
11	Nov 4	Classification Systems of Consonants Place, Manner, Voicing Distinctive Features	Reading: Small, Chapter 5 pp 111-146 Assignment 5-1 and 5-2 (due Dec 4)
	Nov 6	Consonants continued	
12	Nov 11	Veteran's Day—HOLIDAY!!	
	Nov 13	Lab Work Day in class/Exam review	Assignments due
13	Nov 18	<i>Exam 3</i>	<i>Lab 2 due in class hard copy</i>
	Nov 20	Spectrogram Lab Work Day on your own	
14	Nov 25	Stops, Nasals, Fricatives and Affricates. Approximant Consonants: Glides and Liquids	Reading: Small, Chapter 5 pp 147-157 Assignment 5-3, 5-4, and 5-5 (due Dec 4) Assignments due
	Nov 27	Spectrogram Lab Work Day on your own	

15	Dec 2	Acoustics: Resonant Consonants	Reading: Raphael: Ch. 6, pp. 114-123
	Dec 4	Non Resonant Consonants Clinical Transcription Diacritical Markings Spectrogram Review	Reading: Raphael: Ch. 6, pp. 123-135 Assignments due
Dec 9-13 TBA		Final Exam	Spectrograms Due

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, may be reported to the office of student affairs.

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.

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 in the area of food and/or stable housing, help is just a click, email or phone call away! Sacramento State offers basic needs support for students who are experiencing challenges in these areas. Please visit our Basic Needs website to learn more about your options and resources available.

<https://www.csus.edu/basicneeds/>

Other Resources

Testing Center: <https://www.csus.edu/testing/>

Library: <https://library.csus.edu/>

Services to Students with Disabilities: <https://www.csus.edu/sswd/>

Student Health and Counseling Services at The WELL: <https://www.csus.edu/shcs/>

Peer & Academic Resource Center: <https://www.csus.edu/parc/>

Student Academic Success and Education Equity Programs: <https://www.csus.edu/saseep/>

Case Manager, Office of Student Affairs: <https://www.csus.edu/student/casemanager/>

Knowledge And Skills Acquisition (KASA) For Certification in Speech-Language Pathology

CSAD 110 Physics of Sound and Phonetics.

This course has been designed to be in direct support of the following American Speech-Language Hearing Association (ASHA) 2017 Knowledge and Skills Acquisition for certification in Speech-Language Pathology:

Standard IV-A

- The student will demonstrate prerequisite knowledge of the physical sciences.

Standard IV-C: Speech, Language, Hearing, Communication, and Swallowing Disorders and Differences

- The student will demonstrate the ability to analyze, synthesize and evaluate knowledge re: phonology, articulation disorders (including the etiologies, characteristics, and anatomical physiological, acoustic, psychological, developmental, linguistic, and cultural correlates.)
- The student will demonstrate the ability to analyze, synthesize and evaluate knowledge re: voice and resonance disorders (including the etiologies, characteristics, and anatomical physiological, acoustic, psychological, developmental, linguistic, and cultural correlates.)
- The student will demonstrate the ability to analyze, synthesize and evaluate knowledge re: receptive and expressive language disorders (phonology, morphology, syntax, semantics, pragmatics, prelinguistic communication, and paralinguistic communication) in speaking, listening, reading, writing, and manual modalities (including the etiologies, characteristics, and anatomical physiological, acoustic, psychological, developmental, linguistic, and cultural correlates.)

Standard IV-B: Basic Human Communication Processes

- The student will demonstrate the ability to analyze, synthesize and evaluate knowledge re: acoustic bases of human communication.
- The student will demonstrate the ability to analyze, synthesize and evaluate knowledge re: linguistic bases of human communication.