

# Sound and Communication

## LING 123

Spring 2026 Section 01 In Person 3 Unit(s) 01/22/2026 to 05/11/2026 Modified 01/22/2026

### Contact Information

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Instructor: Dr. David Malinowski Ph.D.

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Office: Clark Hall 489

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### Office Hours

In-person Tuesdays, 2:00-4:00 PM in Clark Hall 489.

If you'd like to meet at another time than the above-listed times, either in person or via Zoom, please email ([david.malinowski@sjsu.edu](mailto:david.malinowski@sjsu.edu) (<mailto:david.malinowski@sjsu.edu>)) and we can make arrangements.

### Course Description and Requisites

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Basic acoustics and nature of sound as applied to the study of vocal communication by humans and other animals. Voice communication as transmission of a speech code via sound.

*Satisfies UD Area: 2/5. Earth, Environment, and Sustainability (Formerly Area R).*

**Prerequisite(s):** Completion of Core General Education and upper division standing are prerequisites to all UD GE courses. Completion of, or co-registration in, 100W is strongly recommended.

**Grading:** Letter Graded

### \* Classroom Protocols

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Attendance

Although attendance itself is not graded, regular attendance and active participation are required to do well in this class. And your attendance and participation not only help you learn—they will help your classmates too (and theirs will help you!). So...

- Please arrive to class on time.
- If you know you'll miss class or arrive late, please email me ahead of time.
- If medical needs require that you miss class and/or impact your ability to complete class work on time, please contact me as soon as you're able to. For longer absences, I may ask for a doctor's signed explanation.
- If you observe a certain religious holiday, please show me written documentation far in advance (university policy: before add deadline, or at least 3 days before holiday if before add deadline).

**Participation** (to be discussed as a class and reflected upon afterwards)

- What kinds of classroom dynamics do you value for your own learning experience? (lecture-focused classes, discussion-focused classes, classes with a lot of group work, labs, hands-on work, etc.)
  - What are some examples of class experiences in your own past that were more, and less, successful in this regard?
  - What are some concrete actions and techniques that teachers in your past experience have used to support successful learning environments?
- What kinds of participation do you appreciate from your classmates?
- What kinds of participation do you hope for and expect of yourself?
- What kinds of things do you find most distracting in classroom environments?
- Do you have any other thoughts or recommendations for a positive learning environment in this class this semester?

## Program Information

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**Welcome to this General Education course.**

SJSU's General Education Program establishes a strong foundation of versatile skills, fosters curiosity about the world, promotes ethical judgment, and prepares students to engage and contribute responsibly and cooperatively in a multicultural, information-rich society. General education classes integrate areas of study and encourage progressively more complex and creative analysis, expression, and problem solving.

The General Education Program has three goals:

**Goal 1:** To develop students' core competencies for academic, personal, creative, and professional pursuits.

**Goal 2:** To enact the university's commitment to diversity, inclusion, and justice by ensuring that students have the knowledge and skills to serve and contribute to the well-being of local and global communities and the environment.

**Goal 3:** To offer students integrated, multidisciplinary, and innovative study in which they pose challenging questions, address complex issues, and develop cooperative and creative responses.

More information about the General Education Program Learning Outcomes (PLOs) can be found on the [GE website \(https://sjsu.edu/general-education/ge-requirements/overview/learning-outcomes.php\)](https://sjsu.edu/general-education/ge-requirements/overview/learning-outcomes.php).

Department name: Linguistics & Language Development

Department Office: CL 473

Department Website: [www.sjsu.edu/linguistics](http://www.sjsu.edu/linguistics)

Department Chair, Dr. Stefan Frazier: [stefan.frazier@sjsu.edu](mailto:stefan.frazier@sjsu.edu), 408-924-4443

Department library liaison: Peggy Cabrera, [peggy.cabrera@sjsu.edu](mailto:peggy.cabrera@sjsu.edu), 408-808-2034

## Course Goals

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In this class, we will explore questions like the following:

- What is communication? What is language?
- What are the physical properties of communicative sounds? How can these properties be quantified and measured?
- How do humans and other animals produce their vocalizations? What organs of the body are involved in vocalization, and what do they do?
- How does human language differ from animal 'language'? Is human language a learned skill (like chess) or an instinct (like laughing), or something in between?
- How do Large Language Models (LLMs) and artificial intelligence (AI) applications like ChatGPT challenge us to rethink the nature of human and animal communication?

LING 123 is a strongly multidisciplinary course. Our lectures and readings will jump eclectically among multiple scientific fields, most notably the following three:

1. Acoustics – the science of sound;
2. Linguistics – the science of human language; and
3. Ethology – the science of animal behavior, encompassing both proximate and evolutionary explanations.

Within these fields we will encounter many different (sometimes conflicting) scientific perspectives on communication. In order to appreciate this theoretical diversity you will need to be able to think critically and skeptically.

## Course Learning Outcomes (CLOs)

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### **GE Area UD 2/5: Earth, Environment, and Sustainability (formerly Area R)**

SJSU Studies courses, which include Upper Division (UD) Areas 2, 3, 4, and 5, develop students' abilities to live and work effectively in diverse societies and to address complex issues using analytical skills and creative thinking.

Upon successful completion of an Area 2 or 5 course such as LING 123, students should be able to:

- **GEALO 1:** Apply scientific principles and the scientific method to answer questions about earth, the environment, and sustainability while recognizing both the limits of both the method and principles;
- **GEALO 2:** Apply mathematical or quantitative reasoning concepts to the analysis and generation of solutions to issues of earth, the environment, and sustainability
- **GEALO 3:** Communicate a scientific finding, assertion, or theory to a general audience with the integrity and rigor of the underlying science; and
- **GEALO 4:** Explain ethical, social, and civic dimensions of scientific inquiry.

### Course Learning Outcomes (CLO)

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

- **CLO 1:** Demonstrate an understanding of sound as a physical phenomenon, and be able to solve simple problems in acoustics, such as calculating a sound's frequency and distance from source.
- **CLO 2:** Analyze human speech and animal vocalization on a computer, and draw conclusions on those data.
- **CLO 3:** Recognize basic features of human language and other animal communication systems in terms of the four questions of ethology: adaptation, mechanism, ontogeny, and phylogeny.
- **CLO 4:** Explain adaptive functions and phylogenetic development of animal communication systems.
- **CLO 5:** Discuss how human language differs from the communication systems of other animal species.

## Course Materials

There is no required textbook for the course. Electronic readings and other resources will be posted on the Canvas class website.

## Course Requirements and Assignments

Assignment	Description	Weight
Homework	You will have weekly homework assignments that require you to engage critically and creatively with the readings and other class material. Homework will range from written responses to class readings, to group discussions, to documenting and analyzing animal, human, and environmental sounds. Cumulatively, these assignments will address all CLOs and GEALOs.	30%
Lab assignments	There will be four laboratory sessions in which you will use a program to analyze sounds of various sorts including animal calls and human speech. This assignment pertains to CLOs 1, 2, & 3, as well as GEALOs 1, 2, & 3. These can be done in a campus computer lab or on your own.	20% (5% ea.)

Assignment	Description	Weight
Quizzes	There will be regular quizzes that you will complete individually. Quizzes will take place both in class and on Canvas. This assignment pertains to CLOs 1-5 and GEALOs 1-3.	20% (2% ea.)
Final project workshop	You and 2-3 partners will lead a discussion that showcases your final projects, highlighting intersections between them, key communication issues that are raised, and practical outcomes of your work. This assignment addresses GEALOs 1, 2 and 3 as well as any CLO(s) that relate to the topic.	10%
Final project	Individually or in pairs, you will design a project with a real-world audience in mind. The project will address a conceptually significant issue with tangible, real-world implications relating to human language and/or animal communication systems. This assignment pertains to learning objectives CLOs 3, & 5, and GEALOs 1, 3, & 4.	20%
Extra credit	<ul style="list-style-type: none"> <li>• (1%) During the first 4 weeks of the course, visit me in my office for at least 5 minutes. You may wish to talk about coursework, homework, your academic or work ambitions, or anything else relevant.</li> <li>• (up to 2%) Other opportunities for extra credit, such as short reports based on attendance at events relevant to topics we study in this class, will be made available during the semester</li> </ul>	3% possible

Success in this course is based on the expectation that students will spend, for each unit of credit, a minimum of 45 hours over the length of the course (normally three hours per unit per week) for instruction, preparation/studying, or course related activities, including but not limited to internships, labs, and clinical practica. Other course structures will have equivalent workload expectations as described in the syllabus. More details about student workload can be found in [University Policy S12-3](http://www.sjsu.edu/senate/docs/S12-3.pdf) at <http://www.sjsu.edu/senate/docs/S12-3.pdf>.

As a 3 unit course, LING 123 requires you to spend a minimum of 135 hours in total, or 9 hours per week, including 150 minutes of classroom attendance.

## ✓ Grading Information

You will find information about grading for each assignment in the assignment descriptions themselves. Refer to the "Course Requirements and Assignments" section of this syllabus to determine the relative weight of each assignment. Canvas will automatically tabulate your final grade as your completed work is graded.

Grade	Percentage
A+ (plus)	97 to 100%
A	93 to 96.99%
A- (minus)	90 to 92.99%
B+ (plus)	87 to 89.99%
B	83 to 86.99%
B- (minus)	80 to 82.99%
C+ (plus)	77 to 79.99%
C	73 to 76.99%
C- (minus)	70 to 72.99%
D+ (plus)	67 to 69.99%
D	63 to 66.99%
D- (minus)	60 to 62.99%
F	0 to 59.99%

#### Additional considerations:

- At SJSU A+ (plus) is equal to A in grade points (4.0). Final grade may not exceed 100%. An A+ (plus) will be given to score greater than 97% excluding percentage points from extra credit work.
- Beyond the extra credit opportunities presented by the instructor, there are no extra credit or make-up assignments.

#### Late work policy

- All assignments are due on the date indicated. A late assignment will be graded down 1/3 of a letter grade for each day that it is late (A becomes A minus, A minus becomes B plus, etc.)
- For interactive/collaborative work (i.e., Canvas discussions, presentations, etc.), late work will not be accepted.
- In case of extenuating circumstances (an accident, serious illness or other serious circumstances) you may request an extension of the due date. To do so, you need to submit (1) a written request for the extension with (2) valid supporting documentation. The request must be submitted at least 24 hours in advance of the due date/time, but the supporting documentation may be submitted afterward.

Per [University Policy S16-9 \(PDF\)](http://www.sjsu.edu/senate/docs/S16-9.pdf) (<http://www.sjsu.edu/senate/docs/S16-9.pdf>), relevant university policy concerning all courses, such as student responsibilities, academic integrity, accommodations, dropping and adding, consent for recording of class, etc. and available student services (e.g. learning assistance, counseling, and other resources) are listed on the [Syllabus Information](https://www.sjsu.edu/curriculum/courses/syllabus-info.php) (<https://www.sjsu.edu/curriculum/courses/syllabus-info.php>) web page. Make sure to visit this page to review and be aware of these university policies and resources.

## Course Schedule

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For a detailed weekly schedule, including readings, assignments, quizzes, and other work, please see the Modules and Syllabus features on our Canvas course site.

When	Topic	Notes
<b>Week 1</b> Jan. 22 (Th) - Jan. 26 (Mo)	Course introduction	
<b>Week 2</b> Jan. 27 (Tu) - Feb. 2 (Mo)	What is communication? and Basic Acoustics I	
<b>Week 3</b> Feb. 3 (Tu) - Feb. 9 (Mo)	Basic Acoustics II	
<b>Week 4</b> Feb. 10 (Tu) - Feb. 16 (Mo)	Sound production & perception	
<b>Week 5</b> Feb. 17 (Tu) - Feb. 23 (Mo)	Animal communication - Signals	
<b>Week 6</b> Feb. 24 (Tu) - Mar. 2 (Mo)	Animal communication - Principles and practices of signaling	
<b>Week 7</b> Mar. 3 (Tu) - Mar. 9 (Mo)	Animal communication - Theory of Mind and Animal-Human Convergences	
<b>Week 8</b> Mar. 10 (Tu) - Mar. 16 (Mo)	Animal communication - Ontogeny and Phylogeny	
<b>Week 9</b> Mar. 17 (Tu) - Mar. 23 (Mo)	The sounds of English	
<b>Week 10</b> Mar. 24 (Tu) - Apr. 6 (Mo)	The sounds of the world's languages	
<b>Week 11</b> Apr. 7 (Tu) - Apr. 13 (Mo)	Words, phrases, and sentences	

When	Topic	Notes
<b>Week 12</b> Apr. 14 (Tu) - Apr. 20 (Mo)	Language and evolution; Language and the brain	
<b>Week 13</b> Apr. 21 (Tu) - Apr. 27 (Mo)	Language acquisition	
<b>Week 14</b> Apr. 28 (Tu) - May 4 (Mo)	Challenges of AI and human communication; Workshops	
<b>Week 15</b> May 5 (Tu) - May 11 (Mo)	Workshops & Course review	
<b>Final exam period</b> May 13 (We) - May 19 (Tu)	Work on final projects	