SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Topics in Natural Language Processing

CS 273

Spring 2026 Section 01 In Person 3 Unit(s) 01/22/2026 to 05/11/2026 Modified 01/21/2026

Contact Information

Instructor(s): Faranak Abri

Office Location: MQ 213

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Class Days/Time: Tuesdays – Thursdays 3:00 PM - 4:15 PM

Classroom: TBD

Classroom Protocols

- Students are expected to assist in maintaining a classroom environment that is conducive to learning. Inappropriate behavior in the classroom that leads to the distraction of others shall not be tolerated under any circumstances.
- Instruction will begin at or within several minutes of the official published start time for the course. Please make sure that cell phones, beepers, and texting devices are turned off during the entire scheduled class time. Excessive audible discussions with fellow students are prohibited so that others are not disturbed. If any subject matter is not understood, please do not hesitate to ask for clarification. If an extended response is necessary to remove doubts, then a request to follow up outside of scheduled classroom instruction time might be made.
- Per University Policy S12-7, course material developed by the instructor is the intellectual property of the instructor and cannot be shared publicly without permission. Students may not publicly share or upload instructor-generated material for this course such as exam questions, lecture notes, or homework solutions without the instructor's consent. This includes unauthorized recording or posting of recordings of lectures. Students who record, distribute, or post these materials will be referred to the Student Conduct and Ethical Development office. These policies are designed to protect student privacy and ensure academic integrity.

- If a student is caught cheating on a homework assignment, the student will receive a 0 on that assignment. If a student is caught cheating on an exam, the student will receive an F. The instructor must report any incidents of cheating or plagiarism to the University per University Policy F15-7.
- Attendance for the first two sessions is required. Important class information, including policies and class schedules. Students who do not attend the first sessions will be removed from the course.
- Exam 1 and Exam2 will be hold in-person. So, students have to make sure they will attend the exam sessions in-person.

Program Information

Diversity Statement - At SJSU, it is important to create a safe learning environment where we can explore, learn, and grow together. We strive to build a diverse, equitable, inclusive culture that values, encourages, and supports students from all backgrounds and experiences.

Course Learning Outcomes (CLOs)

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

- CLO1 Design regression and classification learners (models) and evaluate the goodness of their designed Models based on overfitting/underfitting and bias/variance.
- CLO2 Process textual data, and design/evaluate ML models to classify textual data
- CLO3 Analyze the main applications of NLP and implement different NLP projects.
- CLO4 Write technical reports about their projects and present their findings.

Course Materials

Textbooks (Optional)

Pattern recognition and machine learning. Christopher M. Bishop; 2006

Machine Learning. Sergios Theodoridis; 2015

Speech and Language Processing (An Introduction to Natural Language Processing, Computational Linguistics, and Speech Recognition). Dan Jurafsky and James H. Martin.

Foundations of Statistical Natural Language Processing. Christopher Manning and Hinrich Schütze

Other online resources

Course Requirements and Assignments

- Two exams 40% = First exam 20% + Second exam 20%
  - Note: Exam 1 and Exam2 will be hold in-person. So, students have to make sure they will attend the exam sessions in-person.

- Three projects 60% (Each project includes one or more subprojects, written reports in LaTeX format) = First project 10% + Second Project 20% + Capstone project (required presentation) 30%
    - grading rubrics for Project 1 and Project 2: Implementing all mentioned steps (0.6) and clear report (0.4)
    - **Capstone project**: Students must choose a project for their final project that will require an adequate amount of teamwork and then carry it out. The capstone project is a mid-scale project that can be composed of smaller projects, and students work in groups to accomplish their project.
    - The Capstone project proposal is sent to the instructor for approval before starting to work on it. The proposal includes the description of the NLP project, putting it out in one page's worth of detail.
        - Briefly describe the dataset(s) you plan to work on.
        - List the steps you want to take for implementation.
        - Establish what the project's results will be.

- grading rubrics for Capstone project: Project proposal (0.1), implemented project (0.5), Report (0.2), presentation (0.2)
- Bonus points = Presenting research work for specific topics approved by the instructor.

"Per University Policy S16-9, 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 practices. Other course structures will have equivalent workload expectations as described in the syllabus."

Final Examination or Evaluation

This is a project-based course, and the final examination is done by the capstone project and the written report in LaTeX format and the presentation (30%).

✔ Grading Information

Extra credit questions may be included in assignments and exams. For late submissions, grade deductions will be considered.

A plus = 97% or higher

A = 93% up to 97%

A minus = 90% to 93%

B plus = 87% to 90%

B = 83% to 87%

B minus = 80% to 83%

C plus = 77% to 80%

C = 73% to 77%

C minus = 70% to 73%

D plus = 67% to 70%

D = 63% to 67%

D minus = 60% to 63%

F = 0% to 60%

University Policies

Per University Policy 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) web page. Make sure to visit this page to review and be aware of these university policies and resources.

Course Schedule

CS 273 / Topics in Natural Language Processing, Spring 2026, Course Schedule

There might be some changes to the course schedule due to the class circumstances.

Week	Dates: Tu, Th	Topics, Readings, Assignments, Deadlines
Week 0	Jan 22	Introduction
Week 1	Jan 27, Jan 29	Review of evaluation of ML/NLP models, working with Overleaf and LaTeX
Week 2	Feb 3, Feb 5	Review of the evaluation of ML/NLP models P1.1

Week 3	Feb 10, Feb 12	Text Preprocessing: regular expressions, stemming, lemmatization, stop words, text Normalization, tokenization P1.2
Week 4	Feb 17, Feb 19	Text Preprocessing: regular expressions, stemming, lemmatization, stop words, text Normalization, tokenization P2.1
Week 5	Feb 24, Feb 26	Edit Distance, word and sentence similarity, and cosine similarity P2.2
Week 6	Mar 3, Mar 5	Vector Semantics and Embeddings, Word senses First Exam (March 5)
Week 7	Mar 10, Mar 12	N-grams language models, evaluation, and smoothing. P2.3
Week 8	Mar 17, Mar 19	Text classification and Naïve Bayes, Sentiment classification Capstone project proposal
Week 9	Mar 24, Mar 26	Chatbots and Dialogue Systems Capstone project proposal
Week 10	Mar 31, Apr 2	(Spring Recess No Classes Mar 30-Apr 3)
Week 11	Apr 7, Apr 9	RNN, LSTM
Week 12	Apr 14 , Apr 16	Transformers, large language models
Week 13	Apr 21 , Apr 23	Capstone project presentations, Second Exam (Apr 23)
Week 14	Apr 28 , Apr 30	Capstone project presentations

Week 15	May 5 , May 7	Capstone project presentations

No Final Exam

Other important dates:

Feb 17: Last Day to Drop Courses without an Entry on Student's Permanent Record (D)

Spring 2026 calendar:

https://www.sjsu.edu/provost/docs/2025-26%20Calendar%20revised%207-11-25.pdf