SJSU SAN JOSÉ STATE UNIVERSITY

College of Science · Computer Science

Introduction to Data Structures CS 46B

Summer 2026 Section 01 In Person 4 Unit(s) 06/01/2026 to 08/07/2026 Modified 05/21/2026

Contact Information

Instructor(s):	Frank Luo
Email:	zhiqiang.luo@sjsu.edu (mailto:zhiqiang.luo@sjsu.edu)
Class Days/Time:	M/W 1:00PM - 3:40 pm
Classroom:	MacQuarrie Hall 224
Office Hours:	M/W 3:40 – 4:40pm at DH282
TA:	**Henry Pham** <henry.pham01@sjsu.edu> Y-nha Nguyen<y-nha.nguyen@sjsu.edu (mailto:y-nha.nguyen@sjsu.edu)>
Prerequisites:	· Knowledge of Java equivalent to CS 46A (in Java) or CS 49J (with grade of C- or better). · Math Enrollment Category M-I or M-II and a satisfactory score on the Precalculus Proficiency Assessment (70 or higher), or MATH 19 with a C- or better, or MATH 18A and MATH 18B with C- or better. • CS 46A or CS 46AX (with grade of C- or better). • Math Enrollment Category M-I or M-II and a satisfactory score on the Precalculus Proficiency Assessment (70 or higher), or MATH 19 with a C- or better, or MATH 18A and MATH 18B with C- or better;

Class Meeting Dates:	Jun 1, 2026- Aug 7, 2026

Course Description and Requisites

Fundamental data structures including lists, stacks, queues, and trees, with algorithms for inserting, deleting, searching, and sorting information within them efficiently. Additional topics include Big-O analysis, exceptions, hashing, Java collections framework, generics, iterators, interfaces, recursion, and debugging. Weekly hands-on activities.

Lecture 3 hours/lab 3 hours.

Prerequisite(s): CS 46A or CS 46AX (with grade of C- or better). (If CS 46A was not in Java, then CS 46AW also required.) Math Enrollment Category M-I or M-II and satisfactory score on the Precalculus Proficiency Assessment (70 or higher), or MATH 19 with a C- or better, or MATH 18A and MATH 18B with C- or better; Allowed Majors: Computer Science, Data Science, Computer Science and Linguistics, Stats, Applied/Computational Math, Software Engineering or Forensic Science: Digital Evidence.
Grading: Letter Graded

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:

1. *Use and work with basic structures such as linked lists, stacks, queues, binary search trees, and iterators.*
2. *Implement Java classes that embody data structures.*
3. *Use pre-existing implementations such as the Java Collections framework.*
4. *Make relative estimates of the running times of alternative algorithms using Big-O analysis.*
5. *Distinguish between different types of program defects and understand how testing and debugging are used to correct them.*
6. *Implement simple sorting algorithms such as Insertion Sort and Selection Sort.*
7. *Implement the Sequential Search and Binary Search algorithms.*
8. *Implement simple recursive algorithms such as binary tree traversal.*
9. *Work competently with commonly used tools for software development.*
10. *Create custom data structures when appropriate pre-existing classes are not available.*

Grading Information

- Homework , Quizzes/Class Activity (20%)
- Lab exam1 (10%)

- Lab exam2 (10%)
- Lab (10%)
- Midterm Exam (20%)
- Final (30%)

The grading (https://catalog.sjsu.edu/content.php?catoid=12&navoid=4099#grading-system) scale is as follows:

Final grades will not be adjusted in any way - so an 89.99% is still a B+.

No incomplete grades will be given.

Grading Scale (https://catalog.sjsu.edu/content.php?catoid=12&navoid=4099#grading-system)					
A+	97%	A	93%	A-	90%
B+	87%	B	83%	B-	80%
C+	77%	C	73%	C-	70%
D+	67%	D	63%	D-	60%
F	below 60.0%				

“This course must be passed with a C- or better as a CSU graduation requirement.”

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

Course Schedule (This schedule is subject to change with fair notice via Canvas)

Main section - Mondays			Lab section - Fridays		
Week/ session	Date	Topics	Lab	Date	Lab activity
W1/s1,2	6/1	Intro to Java/ Classes and methods	W1/s1	6/5	Classes and methods
W1/s3,4	6/3	Inheritance	W2/s2	6/5	Inheritance
W2/s5,6	6/8	Generics converting and casting	W3/s3	6/12	converting and casting
W2/s7,8	6/10	I/O & Exceptions	W4/s4	6/12	I/O and exceptions
W3/s9,10	6/15	Exceptions & Junit	W5/s5	6/19	JUnit tests and exceptions
W3/s11,12	6/17	Recursion	W6/s6	6/19	Recursion
W4/s13,14	6/22	Big O & sort &search	W7/s7	6/26	Lab Exam1
W4/s15,16	6/24	Review	W8/s8	6/26	Sort 1&2
W5/s17,18	6/29	Midterm Exam	W9/s9		Linked List (1)
w5/s19,20	7/1	Memory management & Linked List	W10/s10	7/3	Holiday

w6/s21,22	7/6	Linked List	W11/s11		LinkedList (2)
w6/s23,24	7/8	Stack, Queue	w12/s12	7/10	Stack/Exam
w7/s25,26	7/13 - 7/15	Trees, BST	w13/s13	7/17	BST
w8/s27,28	7/20 -7/22	Sets & collections	w14/s14	7/24	Custom collection
w9/s29,30	7/27 - 7/29	Review & Second Exam, Hash Tables	w15/s15	7/31	Hash Tables
w10/s31	8/3 - 8/5	Hash Tables & Review	w15/s15	8/7	Lab Exam2

Final Exam: Friday, Aug 7 1:00-3:00 PM

Summer 2026 Culminating Activities & Final Exams are normally scheduled on the last day of class.

https://www.sjsu.edu/classes/schedules/summer-2026.php (https://www.sjsu.edu/classes/final-exam-schedule/spring-2026.php)

- Other important dates.
  - Mon, Feb 19: Last Day to Drop Classes without a "W" Grade
- Spring 2026 calendar:
  - https://www.sjsu.edu/registrar/calendar/spring-2026.php