

LECTURER

- Duc Ta --- dta@sfsu.edu

Office Location: <https://office.ducta.net>

Office Hours: Mon drop-in 11:00 AM - 1:30 PM
(5 hours/week) Wed by-appointment 12:00 PM – 2:30 PM

COURSE

- CSC 220.02 (Ro) – Data Structures; Lecture, 3 Units, TuTh, 08:00 AM – 09:15 AM, Thornton Hall 327 (TH 327)
- File Manager (sfsu/student):* <https://csc220.ducta.net>
- Forums (on Canvas):* <https://canvas.sfsu.edu>

BULLETIN DESCRIPTION

Linear and non-linear data structures in Java, including lists, stacks, queues, trees, tables, and graphs. Recursion, iteration over collections, sorting, searching, Big O notation and hash table.

COURSE PREREQUISITES

CSC 210 or CSC 306 or CSC 309 with a grade of C or better

COURSE OBJECTIVES

At the end of this course students will

- ✓ Be able to write Java programs and an integrated development environment
- ✓ Utilize a debugger when doing software development
- ✓ Apply Data Structures and ADT concepts effectively when developing small to medium sized projects
- ✓ Write robust code utilizing exception handling language features
- ✓ Learn what and how to document each program project

GRADES

Grades will be awarded based on the following breakdown:

- Assignments: 350 pts Midterm Exams: 50 pts Final Exam (must-take or course grade F): 100 pts
- Extended deadlines & extra credit must be offered fairly to all students. No late assignments. No make-up exams.

Grades will be determined on the basis of total possible points of 500 and extra credits received. Letter grade scale:

- A: 90-100% B: 80-89% C: 70-79% D: 60-69% F: Below 60%
- Or A: 450-500 points B: 400-449 points C: 350-399 points D: 300-349 points F: Below 300 points
- A and a Letter of Recommendation: above 100% or above 500 points.

ATTENDANCE

- Students are responsible for all material covered in class. It may be a good idea to have a Study Buddy.
- Course announcements and forums are on Canvas. Course materials are organized on the course's File Manager.

LEARNING ACTIVITIES

- Detailed descriptions and instructions to be given in class for each learning activity.
- To make learning activities meaningful and useful, please engage. Different points of view are very welcome.

STUDENT RESOURCES

- Recommended Textbook: Frank M. Carrano, *Data Structures and Abstractions with Java*, 5th edition, Pearson.
- Recommended IDE: NetBeans (course default IDE) and IntelliJ, the latest versions.
- Recommended Services, *please visit the File Manager for more recommended services:*
 - CS Department Office, (415) 338-2156 <https://cs.sfsu.edu/>
 - SFSU, ITS, Software and Hardware <https://its.sfsu.edu/services>
 - SFSU, Library, Extended Laptops Checkout <https://library.sfsu.edu/extended-laptops-checkout>

STUDENTS WITH DISABILITIES

Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor. The Disability Programs and Resource Center (DPRC) is available to facilitate the reasonable accommodations process. The DPRC is located in the Student Service Building and can be reached by telephone (voice/TTY 415-338-2472) or by email (dprc@sfsu.edu).

TENTATIVE SCHEDULE

DATE	TOPIC	READING and ASSIGNMENT
WEEK 01 <i>Aug 23 + 25</i>	- Welcome - Reviews and Object-Oriented Programming 1 - Reviews and Object-Oriented Programming 2	ASMT Canvas Out, ASMT 1 Out Appendices A-B Prelude, Interlude 07, ASMT Canvas Due
WEEK 02 <i>Aug 30 + Sep 01</i>	- Reviews and Object-Oriented Programming 3 - Reviews and Object-Oriented Programming 4 - Reviews and Object-Oriented Programming 5 (Advanced OOP)	ASMT 1 Due Appendices C-D-E ASMT 2-Preparation Out, ASMT 2 Out
WEEK 03 <i>Sep 06 + 08</i>	- Primary Data Structures, The Bags 1 - Primary Data Structures, The Bags 2	CH01+02+03 Independent Reading
WEEK 04 <i>Sep 13 + 15</i>	- Primary Data Structures, The Bags 3 - Primary Data Structures, The Bags 4 - Stack 1, Assertion, and Exception Handling	ASMT 2-Preparation Due Interlude 01+03+08 Interlude 02+04, CH05
WEEK 05 <i>Sep 20 + 22</i>	- Stack 2, Advanced - Recursion 1 - Recursion 2	CH06 CH07 ASMT 2 Due, ASMT 3 Out
WEEK 06 <i>Sep 27 + 29</i>	- Operation Counting - The Efficiency of Algorithms - Comparison Reviews	Independent Reading CH04 Independent Reading
WEEK 07 <i>Oct 02 + 06</i>	- Comparison Methods - Java Lexicography - Sorting Algorithms 1 - Midterm Exam 1 Review 1	Independent Reading Independent Reading CH08 ASMT 3 Due, ASMT 4 Out
WEEK 08 <i>Oct 11 + 13</i>	- Sorting Algorithms 2 - Midterm Exam 1 Review 2 - MIDTERM Exam 1 – Oct 13	CH09 Independent Reading Independent Reading
WEEK 09 <i>Oct 18 + 20</i>	- Queues, Deques, and Priority Queues 1 - Queues, Deques, and Priority Queues 2	CH10+11 ASMT 4 Due, ASMT 5 Out
WEEK 10 <i>Oct 25 + 27</i>	- Vector and Lists - Lists and Iterators - String Copy and String Pool	CH12+13+14 CH15+16+17, Interlude 05 Independent Reading
WEEK 11 <i>Nov 01 + 03</i>	- Deep/Shallow/Mixed Copies, Cloneable Interface, and Clone Method - Midterm Exam 2 Review 1 - Hashing, Hash Table, Enum, and Dictionary 1	Interlude 06+09 ASMT 5 Due, ASMT 6 Out CH18+19+20+21+22
WEEK 12 <i>Nov 08 + 10</i>	- Dictionary 2 and Google Guava 1 - Google Guava 2, Search - Midterm Exam 2 Review 1	Independent Reading Independent Reading Independent Reading
WEEK 13 <i>Nov 15 + 17</i>	- Google Guava 3, File I/O, and Graphs - Midterm Exam 2 Review 2 - MIDTERM Exam 2 – Nov 17	ASMT 6 Due Independent Reading Independent Reading
WEEK 14 <i>Nov 22 + 24</i>	Fall '22 Recess; No Classes; Campus Closed (Thanksgiving)	
WEEK 15 <i>Nov 29 + Dec 01</i>	- Trees and Google Trees - FINAL Exam Review 1	CH23-27 Independent Reading
WEEK 16 <i>Dec 06 + 08</i>	- Graphs and Google Graphs - FINAL Exam Review 2 --- <i>Last Day of Ro Section, Dec 08</i>	CH28 (CH29) Independent Reading
WEEK 17 <i>Dec 13</i>	FINAL Exam: TUESDAY, December 13, 08:00 AM - 10:00 AM	

*** The course instructor reserves the right to change any of these policies at any time during the semester. Any changes will be announced in class and posted in course forums on Canvas.

STUDENT CONDUCT AND ACADEMIC HONESTY

- Please see the next 2 pages.

Course Policy on Student Conduct and Academic Honesty

All students of this course must agree with and strictly follow:

1. The San Francisco State University's **Code of Student Conduct**: <https://conduct.sfsu.edu/standards>
2. The Computer Science Department's **Student Policies**: <https://cs.sfsu.edu/student-policies>
3. **The Honor Code** of this course which is detailed below (in this same document).
4. Caring and constructive behavior which help build a safe and healthy atmosphere in the class for everyone will be rewarded. Please ask the instructor for more details.
5. An F grade or a "zero" grade will be assigned for an assignment in which a student violates a rule in **the Honor Code**.
6. An F grade will be assigned for the course to a student who cheats on an exam.
7. An F grade will be assigned for the course to a student who poisons the learning or the testing environment of others, who prejudices the effort of others, or who infringes on the rights of others.

The Honor Code

This Honor Code was adopted from the Computer Science department of Stanford University, <https://cs.stanford.edu/degrees/ug/HonorCode.shtml>, and was updated.

A. The Honor Code is an undertaking of the students, individually and collectively:

- that they will not give or receive aid in examinations; that they will not give or receive unpermitted aid in class work, in the preparation of reports, or in any other work that is to be used by the instructor as the basis of grading;
- that they will do their share and take an active part in seeing to it that others as well as themselves uphold the spirit and letter of the Honor Code.

B. Under the Honor Code you are obligated to follow all of the following rules:

Rule 1: You must not look at solutions or program code that are not your own.

It is an act of plagiarism to submit work that is copied or derived from the work of others and submitted as your own. For example, using a solution from the Internet or a solution from another student (past or present) or some other source, in part or in whole, that is not your own work is a violation of the Honor Code. Many Honor Code infractions we see make use of solution code found online. The best way to steer clear of this possibility is not to search for online solutions to the programming assignments. Moreover, looking at someone else's solution code in order to determine how to solve the problem yourself is also an infraction of the Honor Code. In essence, you should not be looking at someone else's code in order to solve the problems in this class. This is not an appropriate way to "check your work," "get a hint," or "see alternative approaches."

Rule 2: You must not share your solution code with other students.

In particular, you should not ask anyone to give you a copy of their code or, conversely, give your code to another student who asks you for it. Similarly, you should not discuss your algorithmic strategies to such an extent that you and your collaborators end up turning in the same code. Moreover, you are expected to take reasonable measures to maintain the privacy of your solutions. For example, you should not leave copies of your work on public computers nor post your solution code on a public website.

Rule 3: You must indicate on your submission any assistance you received.

If you received aid while producing your solution, you should indicate from whom you got help (if that person is not the grader or the instructor of this class) and what help you received. A proper citation should specifically identify the source (e.g., person's name, book title, website URL, etc.) and a clear indication of how this assistance influenced your work (be as specific as possible). For example, you might write "I discussed the approach used for sorting numbers in the `sortNumbers` method with Mary Smith." If you make use of such assistance without giving proper credit, you may be guilty of plagiarism.

It is also important to make sure that the assistance you receive consists of general advice that does not cross the boundary into having someone else write the actual code or show you their code. It is fine to discuss ideas and strategies, but you should be careful to write your programs on your own, as indicated in Rules 1 and 2.

C. Please be aware: all submissions are subject to automated plagiarism detection.

The course instructor has no desire to create a climate in which students feel as if they are under suspicion. The entire point of the Honor Code is that we all benefit from working in an atmosphere of mutual trust. Students who deliberately take advantage of that trust, however, poison that atmosphere for everyone.

The course grader employs powerful automated plagiarism detection tools that compare assignment submissions with other submissions from the current and previous semesters. The tools also compare submissions against a wide variety of online solutions. These tools are effective at detecting unusual resemblances in programs, which are then further examined by the grader again. The grader then makes the determination whether submissions are deemed to be potential infractions of the Honor Code and should be referred to the Computer Science department.

D. A final note on collaboration.

In computer science courses, it is usually appropriate to ask others--the grader or the instructor, or other students--for hints and debugging help or to talk generally about problem-solving strategies and program structure. In fact, the course instructor strongly encourages you to seek such assistance when you need it. Discuss ideas together, respect the rules together, but do the coding on your own.

STUDENT DISCLOSURES OF SEXUAL VIOLENCE

SF State fosters a campus free of sexual violence including sexual harassment, domestic violence, dating violence, stalking, and/or any form of sex or gender discrimination. If you disclose a personal experience as an SF State student, the course instructor is required to notify the [Dean of Students]. To disclose any such violence confidentially, contact:

- The SAFE Place - (415) 338-2208; http://www.sfsu.edu/~safe_plc/
- Counseling and Psychological Services Center - (415) 338-2208; <http://psyservs.sfsu.edu/>
- For more information on your rights and available resources: <http://titleix.sfsu.edu>

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**SAN FRANCISCO
STATE UNIVERSITY**

Policy #	S20-292
Supersedes:	N/A
Senate Approval:	08/11/2020
Presidential Approval:	08/17/2020
Effective:	Immediately
Last Review:	Summer 2020
Next Review:	Spring 2021

Appendix A. Syllabi Verbiage

COVID-19 and Our Campus

Your health and safety is our paramount concern at SF State. During the COVID-19 pandemic, every member of our Gator community is expected to do their part in keeping fellow students, faculty, and staff safe and well. Feeling well and safe will support you in focusing on your academic success.

For the limited number of classes meeting face-to-face, In-person class attendance is an option, but not a requirement. Students who do not wish to or are unable to comply with these requirements will be allowed to take the class virtually or provided with other remote options for course completion

Please consult the campus plan website (<https://news.sfsu.edu/campus-plan>) for up-to-date information and explanation of requirements. For all students attending in-person, the following are required:

1. Wear a face covering when around other people outside of those in your household.
2. Stay at least 6 feet physically distant from people outside the members of your household.
3. Stay home if you have one or more symptoms of COVID-19 (Please check in with the SF DPH website for the most up-to-date symptoms & testing: <https://www.sfdcp.org/wp-content/uploads/2020/04/GetTestedSF-Eng-052920.pdf>)
4. If you would like to discuss reasonable accommodations based on disability related to COVID-19, please contact the Disability Programs & Resource Center: dprc@sfsu.edu

Information is changing rapidly, as our health professionals, scholars, and researchers are learning more about COVID-19, and as such, we encourage you to frequently check your San Francisco State University email account and <https://news.sfsu.edu/campus-plan/students-families> for the most current information.

- You are encouraged to keep your emergency information updated on Campus Solutions in order to receive campus emergency alerts: <https://upd.sfsu.edu/ENSFAQ>
- You are also encouraged to provide your contact information to receive city of SF emergency alerts, including COVID-19 updates and instructions for public safety: <https://sfdem.org/get-city-alerts>
- If you have any questions regarding COVID-19 or your own health during this time, please reach out to Student Health Services: <https://health.sfsu.edu>
- If you are feeling overwhelmed, you are encouraged to connect with our on-campus health professionals in Counseling & Psychological Services: <https://caps.sfsu.edu>
- If you are looking for education on how to keep yourself and your loved ones healthy, then reach out to our Health Promotion & Wellness Team: <https://wellness.sfsu.edu>