KENNESAW STATE UNIVERSITY

SYLLABUS
College of Computing and Software Engineering
Department of Computer Science

CS 3305/W01: Data Structure CRN 82565
Academic Term: Fall 2024

Course Information

Class meeting time: ONLINE

Modality: Full Online.

Location: Online

Instructor Information

Name: Sharon Perry

Email: sperry46@kennesaw.edu DO NOT EMAIL ME HERE ! USE D2L EMAIL !
Office Location: R2-223

Office phone: (470)578-6005 (Main CS Dept)

Office Hours Online: Mon 4:00 – 6:00 pm, Wed 2:00 – 6:00 pm and by appt

Preferred method of communication: D2L email

Course Description

This course introduces data structures, specification, application, and implementation. The case studies will illustrate how data structures are used in computing applications. The emphasis of the course is on linear and some non-linear data structures and object oriented principles. Topics include: abstract data types, stacks, queues, lists, binary search trees, priority queues, recursion, algorithm efficiency, trees, heaps, hash tables, and analysis of search and sort algorithms and their performance for implementation and manipulation. The programming language to be used in this course is any standard high-level object-oriented programming language such as C++, Java, and Ada.

Prerequisites: (MATH 2345 or CSE 2300) and [(CSE 1322 and CSE 1322L each with a "B" or better), or MTRE 2610 with a "B" or better, or CPE 3000 with a "B" or better]

Credit Hours: 3-0-3

Course Materials

Required Text:

> Introduction to Java Programming, Comprehensive Version, 10th Edition
>
> By Y. Daniel Liang
>
> Pearson Publishing, 2015
>
> ISBN#: 978-0-13-376131-3

Technology requirements: Any IDE and Java environment. Eclipse, jGrasp etc.

Learning Outcomes

After successful completion of this course, a student will be able to:

1. Apply single dimensional, multidimensional arrays, and dynamic arrays to store and access data
2. Learn specifications and presentation of commonly used data structures
3. Learn advanced search and sort algorithms and their performance issues
4. Analyze the time complexity and space complexity of algorithms
5. Apply the covered data structure in problem solving and application development

Course Requirements and Assignments

Homework, quizzes, and exams will be given numerical scores. These scores will be averaged at the end of the semester using the following weighting. Individual instructor my adopt different class activities and different distribution of points among activities:

Assignment	Percentage
Test 1	20%
Test 2	20%
Final Exam	20%
Assignments	20%
Quizzes (3 types: Warm Up, Chapters and Programming Practice)	20%

Homework Submission: Copying or paraphrasing codes from other sources or other students will be considered a violation of the Student Code of Conduct. Due dates for homework assignments will be specified on the homework themselves. **Late submissions are accepted but incur a 10% penalty per day. D2L marks it late ONE SECOND after the due date and time !**

Evaluation and Grading Policies

Letter grades will be determined by ranking the numerical averages of all students in the class. Cut-off points for grades will depend on the performance of the class as a whole; however, they will be no higher than 90 (A), 80 (B), 70 (C), and 60 (D).

A: 90% and above

B: 80% thru 89%

C: 70% thru 79%

D: 60% thru 69%

F: less than 60%

I will round up grades if they are > or = .5 or above, for example, an 89.5 is an A, but 79.2 is a C, rounding is contingent upon having a majority of the course work completed.

Special Dates:	Mon Sep 2, 2024 – No Class – Labor Day Fri Oct 25, 2024 @ 11:45 pm - Last Day to Withdraw Without Academic Penalty Mon – Sun Nov 25 - Sun Dec 1, 2024 – Fall Break – No Classes Mon 12/2/2024 - Last Day of Fall 2024 Classes Final Exams Tue 12/3 – Mon 12/9/2024 Final Grades Due by Noon Thur Dec 12, 2024

Course Schedule

Course Topics and Outline: Subject to change and more details, dates updated each semester.

Week	Begins	Lecture Topic	Reference
1	Mon 8/12	Discussion of course syllabus/policies Java Warm Up Recursion	Chapters 1-10 Chapter 18
2	Mon 8/19	Generics Introduction to Data Structures Lists and Linked-Lists	Chapter 19 Chapter 20 & 24
3	Mon 8/26	Stacks & Queues	Chapter 20 & 24
	Mon 9/2	*No face to face classes – Labor Day*	
4	Mon 9/2	Start Complexity and Big O	Chapter 22
5	Mon 9/9	Test 1 Ch. 18-20 & 24 Complexity and Big O Notation	Chapter 22
6	Mon 9/16	Sorting Algorithms	Chapter 23
7	Mon 9/23	Heaps	Chapter 23
8	Mon 9/30	Trees	Chapter 25
9	Mon 10/7	Binary Search Trees	Chapter 25
10	Mon 10/14	Binary Search Trees & AVL Trees	Chapter 25 & 26
	Fri Oct 25	*Fri Oct 25 at 11:45 PM Last day to withdraw without Academic Penalty*	

Week	Begins	Lecture Topic	Reference
11	Mon 10/21	Test 2 Ch 22, 23, 25 & 26 Start Hashing	Chapter 27
11	Mon 10/28	Hashing	Chapter 27
12	Mon 11/4	Start Graphs and Applications	Chapter 28
13	Mon 11/11	Graphs and Weighted Graphs	Ch 28 & 29
14	Mon 11/18	Graphs and Weighted Graphs	Ch 28 & 29
	Mon 11/20	*Fall Break Mon 11/25 – Sun 12/1*	
15	Mon 12/1	Last Day of Class	
		Final Exam	Per Finals Schedule

Course Policies

Attendance

This course is online. Attendance is virtual.

Feedback in a Timely Manner:

This instructor will ONLY reply to e-mails that are sent using D2L email. Ensure that your D2L email settings have checked the box to "keep original message" when replying and that you use a descriptive subject (not the default D2L subject).

Please allow your instructor 24-48 hours before replying back to your email.

PLEASE NOTE: Since this is an online course, I would prefer that you post questions in the discussion forum for that topic/chapter. That way everyone sees the question and the answer.

Homework & Assignment Submission

Homework Submission: Copying or paraphrasing codes from other sources or other students will be considered a violation of the Student Code of Conduct.

Due dates for homework assignments will be specified on the homework assignment. **Late submissions are accepted but incur a 10% penalty per day. D2L marks it late ONE SECOND after the due date and time !**

AI Use Is Prohibited:

You are expected to generate your own work in this class. When you submit any kind of work, you are asserting that you have created it completely on your own unless you indicate otherwise using quotation marks and proper citation for the source(s) you used to help you. Submitting content that has been generated by someone other than you, or that was created or assisted by ANY TYPE of AI generative tool is cheating and constitutes a violation of the KSU Code of Academic Integrity.

Note: The *Turnitin Checker System* is capable of detecting content generated by ChatGPT/AI.

Quiz/Exam Policy: Quizzes and exams will be given throughout the semester. As an online course, the Quizzes and Exams are available over a period of time and should not be missed. Makeup quizzes/exams **WILL NOT** be given.

Students are reminded to conduct themselves in accordance with the Student Code of Conduct (KSU Student Code of Conduct, Section III), as published in the Undergraduate and Graduate Catalogs. Every KSU student is responsible for upholding the provision. Students who are in violation of KSU policy will be asked to leave the classroom and may be subject to disciplinary action by the University.

Tutoring: The College of Computing and Software Engineering offers some tutoring services for certain courses. If this applies to your course, you may want to include this resource for your students. Tutoring info can be found here: http://ccse.kennesaw.edu/ccselabs/ccse-tutoring.php.

Department or College Policies

Students are expected to be aware that the Computer Science department has certain policies in place that govern practices within the department including:

1. “B” or better grade is required for CS 1321/L and CSE 1322/L and their equivalent transfers. All courses used toward any undergraduate degree in the computer science must be completed with an assessed performance grade of "C" or better. This means that all prerequisite courses from the CS Department must have been completed with a "C" or better in order for a student to enter the next course in a sequence.

2. All requests for course overloads must be made through the College advising office and with the approval of the Program coordinator and department chair. The instructor of any course is not permitted to authorize course overloads.

3. All requests for prerequisite bypasses must be made through the College advising office and with the approval of the Program coordinator and department chair. The instructor of any course is not permitted to authorize course overwrites.

4. All students are encouraged to register their current choice of major using the department major change process. Students who are not recorded under their intended major may find that they may be limited from registering for courses they require to complete their intended program of study.

Institutional Policies

Federal, BOR, & KSU Course Syllabus Policies:

http://curriculum.kennesaw.edu/resources/federal_bor_ksu_student_policies.php

Student Resources:
http://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php

Academic Integrity Statement:

http://scai.kennesaw.edu/codes.php

KSU Student Resources

This link contains information on help and resources available to students: https://curriculum.kennesaw.edu/resources/ksu_student_resources_for_course_syllabus.php

Academic Process Resources	**Campus Learning Resources**	**Campus Life Resources**	**Technical Resources**
Undergraduate Academic Advising	Online Learning Support	OWL Life	University Information Technology Services (UITS)
Graduate College	Tutoring Resources	Student Affairs	UITS Student Help Desk Email

Academic Process Resources	**Campus Learning Resources**	**Campus Life Resources**	**Technical Resources**
Academic Calendar	KSU Library	Student Handbook	UITS Training Services
Registrar's Office	Student Disability Services	Wellbeing@KSU	Accessibility Statements and VPATs
FERPA - Family Educational Rights and Privacy Act	Academic Integrity Tips for Students	Department of Student Conduct and Academic Integrity	Software Downloads