



Jordan University of Science and Technology
Faculty of Science & Arts
Basic Sciences And Humanities Department

HSS211CS Data Structures - JNQF Level: 7

First Semester 2023-2024

Course Catalog

3 Credit Hours. This course introduces the students to data structures using an object-oriented programming language. This includes logical and physical representation of data structures, collection types, array-based lists, linked lists, stacks, queues, basics of algorithm analysis, binary trees, binary search trees, hashing, and heaps. Applications and algorithms based on data structures are covered in this course. Problem-solving skills will be stressed and applied to solving computing problems throughout the semester. Weekly homework experiments will provide hands-on experience in topics covered in this course.

Text Book

Title	Data Structures Using C++
Author(s)	D. S. Malik
Edition	2nd Edition
Short Name	Textbook
Other Information	Textbook

Instructor

Name	Miss Noor Zaghal
Office Location	A1 L3
Office Hours	Sun : 08:00 - 08:30 Sun : 10:30 - 12:30 Mon : 08:00 - 08:30 Mon : 13:00 - 13:30 Tue : 08:00 - 08:30 Tue : 10:30 - 11:30 Wed : 08:00 - 08:30 Wed : 13:00 - 13:30
Email	noorzaghal@just.edu.jo

Instructor

Name	Mrs. Wafa' Alqarqaz
Office Location	-
Office Hours	Sun : 08:30 - 09:30 Sun : 11:30 - 12:30 Mon : 09:30 - 10:00 Tue : 08:30 - 09:30 Tue : 11:30 - 12:30 Wed : 09:30 - 10:00 Thu : 08:30 - 09:30
Email	waalqarqaz@just.edu.jo

Instructor	
Name	Dr. Rasha Obeidat
Office Location	-
Office Hours	Sun : 11:30 - 13:00 Tue : 11:30 - 13:30 Wed : 08:30 - 09:30 Thu : 11:30 - 13:00
Email	rmobeidat@just.edu.jo

Instructor	
Name	Miss Ghadeer Obeidat
Office Location	A1-L3
Office Hours	Sun : 11:30 - 12:30 Mon : 10:00 - 11:30 Tue : 11:30 - 12:30 Wed : 10:00 - 11:30 Thu : 11:30 - 12:30
Email	gnobiedat@just.edu.jo

Instructor	
Name	Dr. OMAR ALMOUSA
Office Location	-
Office Hours	Sun : 13:30 - 15:30 Mon : 08:00 - 09:00 Tue : 14:30 - 15:30 Thu : 12:30 - 14:30
Email	osalmousa@just.edu.jo

Instructor	
Name	Dr. Dana EIRushaidat
Office Location	-

Office Hours	Sun : 10:30 - 11:30 Sun : 12:30 - 14:00 Mon : 10:00 - 11:00 Tue : 10:30 - 11:30 Tue : 12:30 - 13:30 Thu : 10:30 - 11:30
Email	dmelrushaidat@just.edu.jo

Class Schedule & Room

Section 1:
Lecture Time: Sun, Tue, Thu : 08:30 - 09:30
Room: G2122

Section 2:
Lecture Time: Sun, Tue, Thu : 08:30 - 09:30
Room: G2121

Section 3:
Lecture Time: Sun, Tue, Thu : 09:30 - 10:30
Room: G2122

Section 4:
Lecture Time: Sun, Tue, Thu : 10:30 - 11:30
Room: G2120

Section 5:
Lecture Time: Sun, Tue, Thu : 10:30 - 11:30
Room: G2122

Section 6:
Lecture Time: Sun, Tue, Thu : 11:30 - 12:30
Room: G2120

Section 7:
Lecture Time: Sun, Tue, Thu : 11:30 - 12:30
Room: G2121

Section 8:
Lecture Time: Mon, Wed : 08:30 - 10:00
Room: G2122

Section 9:
Lecture Time: Mon, Wed : 10:00 - 11:30
Room: G2122

Section 10:
Lecture Time: Sun, Tue, Thu : 12:30 - 13:30
Room: M2008

Section 11:
Lecture Time: Sun, Tue, Thu : 09:30 - 10:30
Room: E2117

Section 12:

Lecture Time: Sun, Tue, Thu : 10:30 - 11:30

Room: PH2101

Section 13:

Lecture Time: Sun, Tue, Thu : 10:30 - 11:30

Room: C2011

Section 14:

Lecture Time: Mon, Wed : 11:30 - 13:00

Room: G2122

Section 15:

Lecture Time: Sun, Tue, Thu : 12:30 - 13:30

Room: G2122

Prerequisites		
Line Number	Course Name	Prerequisite Type
822411	HSS241MATH Discrete Mathematics	Prerequisite / Study
1761120	SE112 Introduction To Object- Oriented Programming	Prerequisite / Pass
902411	MATH241 Discrete Mathematics	Prerequisite / Study
821123	HSS112SE Introduction To Object- Oriented Programming	Prerequisite / Pass

Tentative List of Topics Covered		
Weeks	Topic	References
Week 1	Big O Notation	Ch1 From Textbook
Weeks 2, 3	Array-Based Lists	Ch3 From Textbook
Weeks 3, 4, 5	Linked Lists	Ch5 From Textbook
Weeks 5, 6	Stack	Ch7 From Textbook
Weeks 6, 7	Queues	Ch8 From Textbook
Weeks 8, 9	Recursion	Ch6 From Textbook
Weeks 10, 11	Searching algorithms and Hashing	Ch9 From Textbook
Weeks 11, 12	Binary Trees	Ch11 From Textbook
Weeks 13, 15	Graphs	Ch12 From Textbook
Week 14	Sorting Algorithms	Ch10 From Textbook

Mapping of Course Outcomes to Program Outcomes and NQF Outcomes	Course Outcome Weight (Out of 100%)	Assessment method

Able to understand, describe, and implement several data structures such as Lists, Stacks, Queues, and trees. [1SO1] [1L7K1]	50%	First Exam, Second Exam, Final Exam
Able to utilize the Recursion technique to write functions that solve various programming problems. [1SO1] [1L7K1]	7%	Second Exam
Write and analyze sorting and searching algorithms. [1SO1] [1L7K1]	15%	Final Exam
Explain how represent, traverse, compute the shortest paths in Graphs structures. [1SO1] [1L7K1]	8%	Final Exam
Being able to Implement and evaluate a computing-based solution of real-life problems using suitable data structures and by utilizing the recursion, search and sorting techniques they learned [1SO2] [1L7S1]	20%	lab

Relationship to Program Student Outcomes (Out of 100%)					
SO1	SO2	SO3	SO4	SO5	SO6
80	20				

Relationship to NQF Outcomes (Out of 100%)	
L7K1	L7S1
80	20

Evaluation	
Assessment Tool	Weight
First Exam	20%
Second Exam	20%
lab	20%
Final Exam	40%

Policy	
Attendance	Attendance is very important for the course. In accordance with university policy, students missing more than 20% of total classes are subject to failure. Penalties may be assessed without regard to the student's performance. Attendance will be recorded at the beginning or end of each class
Exams	All exams will be CLOSE-BOOK; necessary algorithms/equations/relations will be supplied if required.
Quizzes	No makeup for quizzes. Every student is expected to do the quizzes in his/her section.
Assignments	Assignments must be submitted before due date, there will be discussions for the assignments scheduled after submissions.