Course Syllabus

1	**Course title**	Data Structure-1 Lab
2	**Course number**	1901235
3	**Credit hours**	1
	Contact hours (theory, practical)	3 practical
4	**Prerequisites/corequisites**	Simultaneously with Data Structures 1 (1901233)
5	**Program title**	Computer Science
6	**Program code**	01
7	**Awarding institution**	The University of Jordan
8	**School**	King Abdullah II School of Information Technology
9	**Department**	Computer Science
10	**Course level**	2
11	**Year of study and semester (s)**	Second year or later
12	**Other department (s) involved in teaching the course**	-
13	**Main teaching language**	English
14	**Delivery method**	☒Face to face learning ☐Blended ☐Fully online
15	**Online platforms(s)**	☒Moodle ☒Microsoft Teams ☐Skype ☐Zoom ☐Others……
16	**Issuing/Revision Date**	10/2022

17 Course Coordinator:

Name: D r Bilal Abu Saleh
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Contact hours:
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18 Other instructors:

22

Name: Fatima Badwan

Office number:

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Office number: lab 202

19 Course Description:

This course explores how different data structures are implemented and their main applications, so the student can analyze any problem and identify the computer requirements appropriate to its solution.

It includes Practical implementation of Records, Practical implementation of Classes and Struct, Inheritance and Composition. Practical implementation of overloading and Templates.
Practical implementation of Stacks and Queues.

The students assessment will be based on practical quizzes and exams

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20 Course aims and outcomes:

A- Aims:

The main goal of this course is to provide concepts about object oriented design of C++, and its practical application in different contiguous data structures.

B- Students Learning Outcomes (SLOs): Upon successful completion of this course students will be able to…

A- Knowledge and Understanding: Students should …

A1) Understand basic concepts of object oriented programming; structures, classes.

A2) Understand the concepts of inheritance and composition.

A3) Know about templates and overloading

A4) Understand the usage and implement basic List contiguous data structure.

A5) Understand the usage and implement basic Stack contiguous data structure.

A6) Understand the usage and implement basic Queue contiguous data structure.

A7) Understand the implementation and usage of contiguous stack and its STL version.

A8) Understand implementation and usage of contiguous queue and its STL version.

B- Intellectual skills: with the ability to …

B1) Comparison between object oriented and structural programming.

B2) Build a complete model for a data structure using the contiguous implementation.

B3) Contrast the structure and function of different data structures discussed in Class

C- Subject specific skills – with ability to …

B Subject specific skills: with ability to

C1) Build and write a complete C++ program with proper use of classes, objects and data structures.

C2) Solve a real life scenarios by writing a complete C++ program with all the features required

D- Transferable skills - with ability to
D1) Possess good programming style. D2) Develop advanced structures and algorithms into complete programs. D3) Choose the appropriate data structures for a certain project. D4) Maintain the usefulness of the program, including software reusability and maintenance.

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21. Topic Outline and Schedule:

Week	Lecture	Topic	Teaching Methods*/platform	Evaluation Methods**	References
1	1.1	**C++ Review**	Face to face lecturing/meeting	in class questions + project	Chapters1-8
2	2.1	Records (Structs)	Face to face lecturing/meeting	in class questions + project	Chapter9
3	3.1	Classes & data abstraction example	Face to face lecturing/meeting	in class questions + project	Chapter10
4	4.1	Classes & data abstraction example	Face to face lecturing/meeting	in class questions + project	Chapter10
5	5.1	Inheritance and composition	Face to face lecturing/meeting	in class questions + project	Chapter11

6	6.1	Inheritance and composition	Face to face lecturing/meeting	in class questions + project	Chapter 11
7	7.1	Overloading and Templates	Face to face lecturing/meeting	in class questions + project	Chapter 13
8	8.1	Overloading and Templates	Face to face lecturing/meeting	in class questions + project	Chapter 13
9	9.1	• Stack	Face to face lecturing/meeting	in class questions + project	Chapter 17
10	10.1	•stack	Face to face lecturing/meeting	in class questions + project	Chapter 17

11	11.1	•Queue	Face to face lecturing/meeting	in class questions + project	Chapter 17
12	12.1	•Queue	Face to face lecturing/meeting	in class questions + project	Chapter 17

22 Evaluation Methods:

Opportunities to demonstrate achievement of the SLOs are provided through the following assessment methods and requirements:

Evaluation Activity	Mark	Topic(s)	SLOs	Period (Week)	Platform
Projects and Quizzes	100	All	All	Every week	E-learning

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23 Course Requirements

students should have a

- Computer
- Internet connection
- Account on MS Teams, Moodle
- MS Visual Studio (C++)

24 Course Policies:

A- Attendance policies:

Maximum allowable absence 15% of number of lectures per semester.

B- Absences from exams and handing in assignments on time:

Students are expected are expected to completely adhere to the assignments strict deadlines, absolutely no exceptions are given.

It's student's responsibility to inform his instructor about his absence from any exam during period not exceeding 3 days.

If you miss the midterm, then a makeup exam will not be provided unless you submit a valid absence excuse, within three days from the midterm, to your lecturer. This excuse must be signed and stamped from the UJ hospital in order to be valid. If your lecturer accepts the excuse then you will be able to take the makeup. You need to follow up the departmental announcements regarding the makeup date and time. Please note that the lecturer may either accept or reject your excuse based on UJ regulations.

C- Health and safety procedures:

Full safety of the computer labs.

D- Honesty policy regarding cheating, plagiarism, misbehavior:

Students' cheating, plagiarism and misbehavior will be transformed to special committee.

E- Grading policy + Weighting (i.e. weight assigned to exams as well as other student work)

Intended grading scale

0 – 40	**F**
41-49	**D-**
50-53	**D**
54-57	**D+**
58-61	**C-**
62-66	**C**
67-70	**C+**
71-75	**B-**
76-79	**B**
80-84	**B+**
85-89	**A-**
90-100	**A**

F- Available university services that support achievement in the course:

Equipped Computer labs.

G- Statement on Students with disabilities

Students with Disabilities: Students with disabilities who need special accommodations for this class are encouraged to meet with the instructor and/or their academic advisor as soon as possible. In order to receive accommodations for academic work in this course, students must inform the course instructor and/or their academic advisor, preferably in a written format, about their needs no later than the 4th week of classes.

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25 References:

A- Required book(s), assigned reading and audio-visuals:

C++ programming: program design including data structures, by D.S. Malik, 8th edition.

B- Recommended books, materials, and media:

C++ Plus Data Structures, 3rd Edition, by Nell Dale, Jones & Bartlett Learning.

26 Additional information:

الحظة1: في حالة التغيب عن امتحان ال Mid Term لن يكون هناك امتحان تعويضي إال في حالة وجود عذر وحالة طارئة من المستشفى. على الطالب إبراز العذر لمدرس المادة في فتره ال تتجاوز الثالثة أيام من تاريخ االمتحان, وللمدرس الحق في قبول أو رفض العذر , وحسب التعليمات.

مالحظة2: لتفادي المشاكل واألخطاء التي تنتج, ال يجوز إجراء الربط الداخلي بأي حال من االحوال.

For more details on University regulations please visit http://www.ju.edu.jo/rules/index.htm

Moodle:

http://elearning.ju.edu.jo/

Name of Course Coordinator: Dr Bilal Abu Salih Signature: ---------- Date: 10/2022	
Head of Curriculum Committee/Department: ---------- Signature: ----------	
Head of Department:	Signature: .....
Head of Curriculum Committee/Faculty:	- Signature: .....
Dean:	Signature: .....