



## Course Specification of Object Oriented Programming

Course No ( ..... )

2020/2021

Head of Department	Vise Dean for Quality Assurance	Dean of the Faculty	Dean of Academic Development center and Quality
Dr. Ahmed Al-shalabi	Dr. Anwar Al-Shamiri	Dr. Nagi Al-Shibani	Assoc. Prof. Dr.Huda Al.Emad
<b>Rector of Sana'a University</b> Prof. Dr. Qassim Mohammed Abbas			



I. Course Identification and General Information:					
1	Course Title:	Object Oriented Programming			
2	Course Code & Number:	.....			
3	Credit hours:	C.H			Total
		Th.	Seminar	Pr.	
		2	-	2	-
4	Study level/ semester at which this course is offered:	2 <sup>nd</sup> Level – 2 <sup>nd</sup> Semester			
5	Pre –requisite (if any):	Computer Programming			
6	Co –requisite (if any):	None			
7	Program (s) in which the course is offered:	CS			
8	Language of teaching the course:	English/Arabic			
9	Study System	Term based system			
10	Mode of delivery:	Full Time			
11	Location of teaching the course:	Faculty of Computer and Information Technology			
12	Prepared By:	Dr. Musa Ghurab			
13	Date of Approval				

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## II. Course Description:

This course is aimed at students who wish to learn Object Oriented Programming. This course teaches the basics of object-oriented programming including the essential concepts of objects classes, objects and relations such as Association, Composition, Aggregation, Inheritance, members, Polymorphism, Interface, operator overloading, and more advanced topics and how to apply these concepts.

## III. Course Intended learning outcomes (CILOs) of the course (maximum 8CILOs)

Reference  
PILOs (Only  
write code numb  
of referenced  
Program Intende  
learning outcome

a1.	Show understanding of Object Oriented Programming concepts.	A3, A5
a2.	Show understanding of the role that methods play in an object-oriented program including inheritance and polymorphism.	A3, A5
b1.	Explore how object-oriented design principles were used	B2
b2.	Analyze problems involving repetition	B4
c1.	Design classes and use objects	C4
c2.	write efficient and effective applications	C1, C6
d1.	Work in groups and individuals	D1

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<b>(A) Alignment Course Intended Learning Outcomes of Knowledge and Understanding to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
a1- Show understanding of Object Oriented Programming concepts.	Lectures Tutorial	Assignments Test Quiz
a2- Show understanding of the role that methods play in an object-oriented program including inheritance and polymorphism.	Lectures Tutorial	Assignments Test Quiz

<b>(B) Alignment Course Intended Learning Outcomes of Intellectual Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
b1- Explore how object-oriented design principles were used	Lectures Projects Presentations	Test Quiz Discussion Individual assignments
b2- Analyze problems involving repetition	Lectures Projects Presentations	Test Quiz Discussion Individual assignments

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<b>( C ) Alignment Course Intended Learning Outcomes of Professional and Practical Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
c1-Design classes and use objects	Lectures Group projects	Assignments Discussion
c2-write efficient and effective applications	Group projects	Assignments Discussion

<b>(D) Alignment Course Intended Learning Outcomes of Transferable Skills to Teaching Strategies and Assessment Strategies:</b>		
Course Intended Learning Outcomes	Teaching strategies	Assessment Strategies
d1- Work in groups and individuals	Group projects	Presentation

<b>IV. Course Content:</b>					
<b>A – Theoretical Aspect:</b>					
Order	Units/Topics List	Learning Outcomes	Sub Topics List	Number of Weeks	contact hours
1	Introduction	a1, b1	Introduction to Computers, Programming, Primitive Data	1	2

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			Types and Operations		
2	Basic Statements and control flow using classes	a1, a2, b1, c1, c2	Selection Statements, Loops, Methods Arrays, Strings and Text I/O, Exceptions and Assertions	2	4
3	Classes and Objects	a1, a2, b2, c2	Classes and Objects	1	2
4	OOP Concepts	a1, a2, b1, b2, c1, c2	Abstraction Encapsulation,	3	6
5	OOP Concepts	a1, a2, b1, b2, c1, c2	Inheritance, Polymorphism, Interface and operator Overloading	4	8
6	Exception Handling	a1, a2, b1, c1, c2	Exception Handling	1	2
7	Files and Streams	a1, a2, b1, b2, c1, c2	Introduction Files and Streams How to Handel Text I/O Object I/O	2	4
<b>Number of Weeks /and Units Per Semester</b>				<b>14</b>	<b>28</b>

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<b>B - Practical Aspect: (if any)</b>				
Order	Tasks/ Experiments	Number of Weeks	contact hours	Learning Outcomes
1	Introduction	1	2	a1, b1
2	Basic Statements and control flow using classes	2	4	a1, a2, b1, c1, c2
3	Objects and Classes	1	2	a1, a2, b2, c2
4	OOP Concepts (Abstraction, Encapsulation)	3	6	a1, a2, b1, b2, c1, c2
5	OOP Concepts (Inheritance, Polymorphism, Interface and operator Overloading)	3	6	a1, a2, b1, b2, c1, c2
6	Exception Handling	1	2	a1, a2, b1, c1, c2
7	Files and Streams	2	4	a1, a2, b1, b2, c1, c2
<b>Number of Weeks /and Units Per Semester</b>		<b>13</b>	<b>26</b>	

<b>V. Teaching strategies of the course:</b>
<ul style="list-style-type: none"> <li>• Lectures</li> <li>• Tutorial</li> <li>• Practical lab Work</li> <li>• Case study</li> <li>• Small Project</li> </ul>

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## VI. Assignments:

No	Assignments	Aligned CILOs(symbols)	Week Due	Mark
1	Build simple classes	a1, b2, c2	3 <sup>rd</sup>	1
2	Write simple program	a1, b2, c2	5 <sup>th</sup>	2
3	Write simple program	a1, b2, c2	10 <sup>th</sup>	2
4	Small Project	a1, a2, b1, b2, c1, c2	13 <sup>th</sup>	5

## VII. Schedule of Assessment Tasks for Students During the Semester:

No.	Assessment Method	Week Due	Mark	Proportion of Final Assessment	Aligned Course Learning Outcomes
1	assignments	3 <sup>rd</sup> , 5 <sup>th</sup> , 10 <sup>th</sup>	5	5%	a1, b2, c2
2	Mid-Test	8 <sup>th</sup>	10	10%	a1, a2, b1, b2, c1, c2
3	Small Project	13 <sup>th</sup>	5	5%	a1, a2, b1, b2, c1, c2
4	Lab Exam	8 <sup>th</sup> , 15 <sup>th</sup>	20	20%	a1, a2, b1, b2, c1, c2
5	Final Exam	16 <sup>th</sup>	60	60%	a1, a2, b1, b2, c1, c2

## VIII. Learning Resources:

- *Written in the following order: (Author - Year of publication - Title - Edition - Place of publication - Publisher).*

### 1- Required Textbook(s) ( maximum two ).

1. Deitel & Deitel, 2016, "*Visual C# How to Program*", 6<sup>th</sup> Edition, Pearson Educat

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<b>2- Essential References.</b>	
	1. Deitel & Deitel, 2016, " <b>C# 6 for Programmers</b> ", 6 <sup>th</sup> Edition, Pearson Education
<b>3- Electronic Materials and Web Sites etc.</b>	
	1- <a href="https://docs.microsoft.com/en-us/dotnet/csharp/">https://docs.microsoft.com/en-us/dotnet/csharp/</a>

<b>IX. Course Policies:</b>	
Unless otherwise stated, the normal course administration policies and rules of the Faculty of Computer and Information Technology apply. For the policy, see: ----- -----	
The University Regulations on academic misconduct will be strictly enforced. Please refer to -----	
<b>1</b>	<b>Class Attendance:</b> A student should attend not less than 75 % of total hours of the subject; otherwise he will not be able to take the exam and will be considered as exam failure. If the student is absent due to illness, he/she should bring a proof statement from university Clinic
<b>2</b>	<b>Tardy:</b> For late in attending the class, the student will be initially notified. If he repeated lateness in attending class, he will be considered as absent.
<b>3</b>	<b>Exam Attendance/Punctuality:</b> A student should attend the exam on time. He is Permitted to attend an exam half one hour from exam beginning, after that he/she will not be permitted to take the exam and he/she will be considered as absent in exam.
<b>4</b>	<b>Assignments &amp; Project</b> The assignment is given to the students after each chapter; the student has to submit all the assignments for checking on time.
<b>5</b>	<b>Cheating:</b> For cheating in exam, a student will be considered as fail. In case the cheating is repeated three times during his/her study the student will be disengaged from the Faculty.
<b>6</b>	<b>Plagiarism:</b> Plagiarism is the attending of a student the exam of a course instead of another student. If the examination committee proofed a plagiarism of a student, he

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	will be disengaged from the Faculty. The final disengagement of the student from the Faculty should be confirmed from the Student Council Affair of the university.
7	<b>Other policies:</b> <ul style="list-style-type: none"><li>- Mobile phones are not allowed to use during a class lecture. It must be closed, otherwise the student will be asked to leave the lecture room</li><li>- Mobile phones are not allowed in class during the examination.</li><li>- Lecture notes and assignments my given directly to students using soft or hard copy</li></ul>

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## Faculty of Computer & Information Technology

### Department of Computer Science

### Program of Computer Science

### Course Specification of Object Oriented Programming

Course No ( ..... )

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## Template for Course Plan (Syllabus)

I. - Information about Faculty Member Responsible for the Course:							
Name of Faculty Member		Office Hours					
Location & Telephone No.		SAT	SUN	MON	TUE	WED	THU
E-mail							

II. Course Identification and General Information:					
1-	Course Title:	Object Oriented Programming			
2-	Course Number & Code:	.....			
3-	Credit hours:	C.H			Total
		Th.	Seminar	Pr.	
		2	-	2	-
4-	Study level/year at which this course is offered:	2 <sup>nd</sup> year – 2 <sup>nd</sup> Semester			
5-	Pre –requisite (if any):	Computer Programming			
6-	Co –requisite (if any):	None			
7-	Program (s) in which the course is offered	CS			
8-	Language of teaching the course:	English/Arabic			

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9-	<b>System of Study:</b>	Term based system
10-	<b>Mode of delivery:</b>	Full Time
11-	<b>Location of teaching the course:</b>	Faculty of Computer and Information Technology

### III. Course Description:

This course is aimed at students who wish to learn Object Oriented Programming. This course teaches the basics of object-oriented programming including the essential concepts of objects classes, objects and relations such as Association, Composition, Aggregation, Inheritance, members, Polymorphism, Interface, operator overloading, and more advanced topics and how to apply these concepts.

### IV. Intended learning outcomes (ILOs) of the course:

<ul style="list-style-type: none"> <li>Brief summary of the knowledge or skill the course is intended to develop:</li> </ul>	
a1.	Show understand Object Oriented Programming concepts.
a2.	Show understand the role that methods play in an object-oriented program including inheritance and polymorphism.
b1.	Explore how object-oriented design principles were used
b2.	Analyze problems involving repetition
c1.	Design classes and use objects
c2.	write efficient and effective applications
d1.	Work in groups and individuals

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V. Course Content:			
<ul style="list-style-type: none"> <li>Distribution of Semester Weekly Plan of Course Topics/Items and Activities.</li> </ul>			
A – Theoretical Aspect:			
Order	Topics List	Week Due	Contact Hours
1	Introduction	1 <sup>st</sup>	2
2	Basic Statements and control flow using classes	2 <sup>nd</sup> ,3 <sup>rd</sup>	4
3	Classes and Objects	4 <sup>th</sup>	2
4	OOP Concepts (Abstraction, Encapsulation)	5 <sup>th</sup> -7 <sup>th</sup>	6
5	Midterm Exam	8 <sup>th</sup>	2
6	OOP Concepts(Inheritance, Polymorphism, Interface and operator Overloading)	9 <sup>th</sup> – 12 <sup>th</sup>	8
7	Exception Handling	13 <sup>th</sup>	2
8	Files and Streams	14 <sup>th</sup> ,15 <sup>th</sup>	4
9	final Exam	16 <sup>th</sup>	2
Number of Weeks /and Units Per Semester		16	32

B – Practical Aspect: (if any)			
Order	Topics List	Week Due	Contact Hours

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1	Introduction	1 <sup>st</sup>	2
2	Basic Statements and control flow	2 <sup>nd</sup> ,3 <sup>rd</sup>	4
3	Objects and Classes	4 <sup>th</sup>	2
4	OOP Concepts (Abstraction, Encapsulation)	5 <sup>th</sup> -7 <sup>th</sup>	6
5	Mid-Test	8 <sup>th</sup>	2
6	OOP Concepts (Inheritance, Polymorphism, Interface and operator Overloading)	9 <sup>th</sup> -11 <sup>th</sup>	6
7	Exception Handling	12 <sup>th</sup>	2
8	Files and Streams	13 <sup>th</sup> ,14 <sup>th</sup>	4
9	Final Exam	15 <sup>th</sup>	2
<b>Number of Weeks /and Units Per Semester</b>		<b>15</b>	<b>30</b>

#### VI. Teaching strategies of the course:

- Lectures
- Tutorials
- Practical lab Work
- Case study
- Small Project

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VII. Assignments:			
No	Assignments	Week Due	Mark
1	Build simple classes	3 <sup>rd</sup>	1
2	Write simple program	5 <sup>th</sup>	2
3	Write simple program	10 <sup>th</sup>	2
4	Small Project	13 <sup>th</sup>	5

VIII. Schedule of Assessment Tasks for Students During the Semester:				
Assessment	Type of Assessment Tasks	Week Due	Mark	Proportion of Final Assessment
1	assignments	3 <sup>rd</sup> , 5 <sup>th</sup> , 10 <sup>th</sup>	5	5%
2	Mid-Test	8 <sup>th</sup>	10	10%
3	Small Project	13 <sup>th</sup>	5	5%
4	Lab Exam	8 <sup>th</sup> , 15 <sup>th</sup>	20	20%
5	Final Exam	16 <sup>th</sup>	60	60%

IX. Learning Resources:
<ul style="list-style-type: none"> <li>Written in the following order: (Author – Year of publication – Title – Edition – Place of publication – Publisher).</li> </ul>
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<b>2- Essential References.</b>
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<b>X. Course Policies:</b>	
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اللجنة الإشرافية			
م.	الاسم	الصفة	التوقيع
١	أ.م.د. عبد الماجد الخليدي	نائب عميد الكلية للشؤون الأكاديمية	
٢	أ.م.د. احمد مجاهد	نائب عميد مركز التطوير الأكاديمي وضمان الجودة	
٣	د. حسين الأشول	ممثل المركز في الكلية	
٤	أ.د. إبراهيم المطاع	نائب رئيس الجامعة للشؤون الأكاديمية	

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