

Ministry of Higher Education and Scientific Research

Supervision and Scientific Evaluation Body

Quality Assurance and Academic Accreditation Office

## Course Description Sample

**Subject: Design algorithms and programming techniques**

This course description provides a brief survey of the most important characteristics, expected learning output, showing whether students have made full use of the learning opportunities. These characteristics have to be matched with the description of the program.

1. Educational Institution	Shatt Al-Arab University College
2. Department / Center	Computer Science Department
3. Course Title /Code	Design algorithms and programming techniques
4. Lecturer Name	Dr. Ali K. Mattar
5. Type of Teaching	Attendance
6. Academic Year /Term	2022-2023
7. Total No. of Teaching Hours	90 Hours
8. Date of Preparing this Course Description	18.10.2022

### 9. Course Objectives

a. Providing students with the most important principles and basics of Design algorithms and programming techniques.

b. Teaching students how to apply Design algorithms and programming techniques.

c. Providing graduates with the necessary knowledge on Design algorithms and programming techniques job in organizations.

d. Improving the administrative skills in the field of Design algorithms and programming techniques.

e. Providing graduates with the skills of education and creative learning.

## 10. Course Output, Methodology and Evaluation

### (A) Cognitive Objectives

a. Enabling students to acquire knowledge and the art of Design algorithms and programming techniques.

b. Acquainting students with how to promote their personal knowledge.

c. Helping students to acquire knowledge in the art of Design algorithms and programming techniques.

d. Enabling students to sharpen their skills in the dynamic work environment.

e. Enabling students to invest their scientific abilities in their working place in the scope of Design algorithms and programming techniques.

f. Helping students to get the necessary knowledge to solve problems Design algorithms and programming techniques.

### (B) Skill Objectives Related to the Program:

a. Scientific Skills in the field of Design algorithms and programming techniques.

b. Leadership Skills in the field of Design algorithms and programming techniques.

c. Skills Related to Administrative Work Challenges of Design algorithms and programming techniques.

### Methods of Teaching and Learning

a. Using already- prepared lectures.

b. Using up-to-date data shows.

c. Homework

d. Adopting group discussions.

### Methods of Evaluation

a. Oral tests
b. Monthly tests
c. Daily quizzes
d. Students' Regular Attendance

**(C) Sentimental and Value Objectives**

a. Realizing ethical objectives.
b. Commitment to university traditions.
c. Compliance with the University Instructions and the Ministry Regulations.
d. Promoting students' personal abilities in educational scopes and how to behave well with others.

**Methods of Teaching and Learning**

a. Lectures on university instructions.
b. Educational guidance lectures.
c. Continuous directing.
d. Visiting State and private institutions.
e. Showing practical cases.

**Methods of Evaluation**

a. Daily quizzes.
b. Classroom discussions and commitment to ethics and sublime values.
c. Special marks for class activities.
d. Monthly and quarterly evaluation.

**D) General and Qualitative Skills (other skills related to the ability of employment and personal development)**

a. Enabling students to acquire the skill and art of Design algorithms and programming techniques.
b. Enabling students to apply creative thinking in Design algorithms and programming techniques.
c. Enabling students to use modern methods of analysis and conclusions.
d. Enabling students to Design algorithms and programming techniques.

## 11. Course Structure

Week	No of Hours	Required Learning Output	Title of Subject	Teaching Method	Evaluation
1	2	understanding the material	*How programmer thinking using algorithms	- lectures - case study -discussions	- oral tests -questions
2	2	understanding the material	*Data mining Algorithms and Big Data	- lectures - case study -discussions	- oral tests -questions
3	2	understanding the material	* Introduction to internet of things IOT	- lectures - case study -discussions	- oral tests -questions
4	2	understanding the material	*Applications of IOT	- lectures - case study -discussions	- lectures - case study -discussions
5	2	understanding the material	* location based services LBS	- lectures - case study -discussions	- lectures - case study -discussions
6	2	understanding the material	*Applications of LBS	- lectures - case study -discussions	- lectures - case study -discussions
7	2	understanding the material	* Introduction to Arduino programming world	- lectures - case study -discussions	- lectures - case study -discussions
8	2	understanding the material	* Arduino applications	- lectures - case study -discussions	- lectures - case study -discussions

9	2	understanding the material	*Classical computing and Quantum in physics	- lectures - case study -discussions	- lectures - case study -discussions
10	2	understanding the material	* understanding quantum computing	- lectures - case study -discussions	- lectures - case study -discussions
11	2	understanding the material	*Applications of Quantum Computing	- lectures - case study -discussions	- lectures - case study -discussions
12	2	understanding the material	* phone application programming language with flutter	- lectures - case study -discussions	- lectures - case study -discussions
13	2	understanding the material	* flutter and dart applications	- lectures - case study -discussions	- lectures - case study -discussions
14	2	understanding the material	*phone application programming language with Kolten	- lectures - case study -discussions	- lectures - case study -discussions
15	2	understanding the material	*introduction to networking	- lectures - case study -discussions	- lectures - case study -discussions
16	2	understanding the material	*how to deal with networking in real life	- lectures - case study -discussions	- lectures - case study -discussions
17	2	understanding the material	* Introduction to python (what can it offer today?)	- lectures - case study -discussions	- lectures - case study -discussions
18	2	understanding the material	*learning python programming language /1	- lectures - case study -discussions	- lectures - case study -discussions
19	2	understanding the material	*learning python programming language /2	- lectures - case study -discussions	- lectures - case study -discussions
20	2	understanding the material	* Introduction to machine learning	- lectures - case study -discussions	- lectures - case study -discussions

21	2	understanding the material	* deep learning as machine learning	- lectures - case study -discussions	- lectures - case study -discussions
22	2	understanding the material	* deep fake ( fuzzy reality )	- lectures - case study -discussions	- lectures - case study -discussions
23	2	understanding the material	* Augmented reality and meta verse	- lectures - case study -discussions	- lectures - case study -discussions
24	2	understanding the material	* What is the cognitive computing?	- lectures - case study -discussions	- lectures - case study -discussions
25	2	understanding the material	*Applications of cognitive computing	- lectures - case study -discussions	- lectures - case study -discussions
26	2	understanding the material	* Introduction to cryptosystems	- lectures - case study -discussions	- lectures - case study -discussions
27	2	understanding the material	* Applications of cryptosystems	- lectures - case study -discussions	- lectures - case study -discussions
28	2	understanding the material	* what is biometric traits characteristics	- lectures - case study -discussions	- lectures - case study -discussions
29	2	understanding the material	*biometric cryptosystem	- lectures - case study -discussions	- lectures - case study -discussions
30	2	understanding the material	* biometric and classical cryptosystem	- lectures - case study -discussions	- lectures - case study -discussions

## 12. Infrastructure

a. Textbooks	None
b. References	1- Chris Bernhardt, "Quantum computing for everyone", MIT , 2019.

	2- Francois Chollet ,“Deep Learning with Python”, Manning Publications Co. , 2018 .
c. Recommended books and periodicals (journals, reports, etc.)	1-Toshinori Muankata, “Fundamentals of the New Artificial Intelligence”, Springer , 2008
d. Electronic references, internet websites, etc	<a href="https://online.wlu.ca/news/2019/02/12/how-algorithm-design-applied">https://online.wlu.ca/news/2019/02/12/how-algorithm-design-applied</a>  <a href="https://www.udemy.com/course/algorithms-and-programming-techniques/">https://www.udemy.com/course/algorithms-and-programming-techniques/</a>

**13. The Plan of Improving the Course**

a. Studying labor market needs.
b. Be informed of the experiences of other countries in the field of Design algorithms and programming techniques.
c. Be informed of research work published in national and international journals in the field of Design algorithms and programming techniques.