Ministry of Higher Education and Scientific Research

Supervision and Scientific Evaluation Body

Quality Assurance and Academic Accreditation Office

Course Description Sample

Subject: ------Information Theory----------

This course description provides a brief survey of the most important characteristics, expected learning output, showing whether students have made full use f 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
3. Course Title /Code	Information Theory
4. Lecturer Name	*Asst lec. Dhuha Kh.Altmemi*
5. Type of Teaching	Attendance
6. Academic Year /Term	Year
7. Total No. of Teaching Hours	60
8. Date f Preparing this Course Description	28/9/2022

9. **Course Objectives**

An elementary approach to information theory
Strengthens the student in the knowledge of the field of communication
Comprehensive course for understanding probability

10. **Course Output, Methodology and Evaluation**

(A) **Cognitive Objectives**

A1- Acquisition of mathematical knowledge to understand the communication model
A 2- Study coding languages
A3- Understand the terminology of the course on the multiplicity of ideas in one course
A4- Understand and use the vocabulary of the probability

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

B1 - Forming a mathematical sense
B2 - The ability to present and discuss frequently asked questions in sports ideas
B3 - Acquisition of sports skills

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**

C1- Gain accuracy and perseverance

C2- Understand the relationship between public life possibilities
C 3- Feeling of enjoyment and enjoyment of studying the curriculum
C4- Ability to solve problems

Methods of Teaching and Learning

Classification of modalities based on educational level and attendance.

Methods of Evaluation

Determine the level and degree to be reached.

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

D1- Integration with the work team
D2 - hard work
D 3- Doing multiple tasks
D 4- Honesty and perfect

11. **Course Structure**

Week	No of Hours	Required Learning Output	Title of Subject	Teaching Method	Evaluation
1	2	**Operations Applied To Information + Communication System Model**		- lectures - case study -discussions	- oral tests -questions
2	2	**Random Variable + Probability + Sum Of Probabilities**		- lectures - case study -discussions	- oral tests -questions
3	2	**Complementary Probability + Probability Of Intersection Or Joint Probability**		- lectures - case study -discussions	- oral tests -questions

4	2	**The Probability Of Mutually Exclusive Choice + The Conditional Probability**		- lectures - case study -discussions	- lectures - case study -discussions
5	2	**Self-Information And Ambiguity**		- lectures - case study -discussions	- lectures - case study -discussions
6	2	**Conditional Ambiguity**		- lectures - case study -discussions	- lectures - case study -discussions
7	2	**Shared Information**		- lectures - case study -discussions	- lectures - case study -discussions
8	2	**Common Entropy, Conditional Entropy, And Common Information Upstream Coding**		- lectures - case study -discussions	- lectures - case study -discussions
9	2	**Entropy**		- lectures - case study -discussions	- lectures - case study -discussions
10	2	**Common Entropy**		- lectures - case study -discussions	- lectures - case study -discussions
11	2	**Conditional Entropy**		- lectures - case study -discussions	- lectures - case study -discussions
12	2	**Common Entropy, Conditional Entropy, And Common Information**		- lectures - case study -discussions	- lectures - case study -discussions
13	2	**Source Coding**		- lectures - case study -discussions	- lectures - case study -discussions
14	2	**Entropy and the Arabic language**		- lectures - case study -discussions	- lectures - case study -discussions
15	2	**Entropy and the Arabic language**		- lectures - case study	- lectures - case study

				-discussions	-discussions
16	2	**Entropy and language**		- lectures - case study -discussions	- oral tests -questions
17	2	**Memory source entropy**		- lectures - case study -discussions	- oral tests -questions
18	2	**Surplus**		- lectures - case study -discussions	- oral tests -questions
19	2	**Excess Of Language**		- lectures - case study -discussions	- lectures - case study -discussions
20	2	**Memory Surplus**		- lectures - case study -discussions	- lectures - case study -discussions
21	2	**Entropy Rate**		- lectures - case study -discussions	- lectures - case study -discussions
22	2	**Upstream Coding Issue**		- lectures - case study -discussions	- lectures - case study -discussions
23	2	**Instant Decoder**		- lectures - case study -discussions	- lectures - case study -discussions
24	2	**Prefix**		- lectures - case study -discussions	- lectures - case study -discussions
25	2	**Oscillatory Theory (Kraft)**		- lectures - case study -discussions	- lectures - case study -discussions
26	2	**Huffman's Algorithm**		- lectures - case study -discussions	- lectures - case study -discussions
27	2	**Information Compression**		- lectures - case study -discussions	- lectures - case study -discussions

28	2	**Lossless Compression Algorithms**		- lectures - case study -discussions	- lectures - case study -discussions
29	2	**Loss Information Compression Algorithms**		- lectures - case study -discussions	- lectures - case study -discussions
30	2	**Channel Encoding**		- lectures - case study -discussions	- lectures - case study -discussions

12.**Infrastructure**

a. Textbooks	Schaum's Summaries of Possibilities Series book
b. References	Schaum's Summaries of Possibilities Series book
c. Recommended books and periodicals (journals, reports, etc.)	IEEE, Elsevier
d. Electronic references, internet websites, etc	google

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

Add some important topics to the course