**Ministry of Higher Education and Scientific Research**

**Supervision and Scientific Evaluation Body**

**Quality Assurance and Academic Accreditation Office**

**Course Description Sample**

**Subject: Multimedia Computing**

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| This course description provides a concise summary of the main features of the course and the learning outcomes expected of the student, demonstrating whether the student has made the most of the learning opportunities available. It must be linked to the programme description. |

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| 1. Educational Institution | Shatt Al Arab University College |
| 2. Department / Center | Computer Techniques Engineering |
| 3. Course Title /Code | Multimedia Computing |
| 4. Lecturer Name | Dina Ayad AbdulJabbar Dhahi |
| 5. Type of Teaching | Weekly |
| 6. Academic Year /Term | Two semesters / Fourth academic year |
| 7. Total No. of Teaching Hours | 120 hours (2 theory + 2 practical) |
| 8. Date f Preparing this Course Description | 2024/10/10 |

9. **Course Objectives**

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| Clarify the concept of multimedia along with an explanation of its applications and components. |

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

(A) **Cognitive Objectives**

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| If the student successfully completes this course, they will be able to:   1. Identify the basic concepts of multimedia computing. 2. Distinguish between the different and varied components of multimedia. 3. Describe the various forms of data representation and the sub-types of each form. 4. Use methods and algorithms for performing some basic processing in the field of multimedia, such as:  * Arithmetic and Logical operations on images * Image histogram modification and equalization * Image, Audio, and Video compression |

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

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| If the student successfully completes this course, they will be able to:   1. Identify the appropriate file formats used to represent data in its various forms. 2. Apply algorithms and techniques used in image processing and file compression of various types and formats. 3. Build integrated programs using MATLAB commands and functions to implement the mentioned algorithms and techniques. 4. Analyze the results of the mentioned algorithms and techniques for performance evaluation. 5. Use HTML commands to build web pages containing multimedia. |

**Methods of Teaching and Learning**

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| 1. Theoretical presentation of the course syllabus. 2. Group discussions on practical application examples. 3. Writing and practically applying programs in the lab. |

**Methods of Evaluation**

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| 1. Written tests (midterm and surprise). 2. Direct oral questions through discussions during lectures. 3. Practical tests (midterm and surprise) in the lab. |

(C) **Sentimental and Value Objectives**

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| If the student successfully completes this course, they will be able to:   1. Recognize the requirements of the engineering profession and the ethical responsibility, in addition to the need for lifelong learning to enhance self-capabilities scientifically and practically. 2. Connect life problems with suitable programming solutions for each problem. |

**Methods of Teaching and Learning**

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| Students are assigned to tackle a practical applied problem in their specialization and analyze the problem during their study period, then design a suitable solution, and finally implement the solution programmatically according to economic and realistic standards. |

**Methods of Evaluation**

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| Results will be presented for class discussion and shared with other students. |

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

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| 1. Build ideas and communicate them effectively verbally and in writing. 2. Manage time and work within deadlines. 3. Participate constructively in groups. |

11. **Course Structure**

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| **Week** | **No of Hours** | **Required Learning Output** | **Title of Subject** | **Teaching Method** | **Evaluation** |
| 1-2 | 4 theoretical  +  4 practical | that He is student Able to understand the basics of media Multiple | Introduction to Multimedia | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| HyperText and HyperMedia |
| 6-3 | 8 theoretical  +  8 practical | that He is student capable​ that He remembers Types , Components and Applications of Media Multiple | Components of Multimedia | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| Multimedia Research Topics and Projects |
| Multimedia Applications |
| Multimedia on the web |
| 7 | 2 theoretical  +  2 practical | that He is student Able to distinguish between species Different For data Media  Multiple | Multimedia Data Basics | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| 8-13 | 12 theoretical  +  12 practical | that He is student Able to that Understand Image Properties Graphics features and that distinguish differences existing  Between them, as well To be understood How to acting the pictures  Digitally And its types | Graphics and Image Data Representation (1) | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| Graphics and Image Data Representation (2) |
| Image Digitization |
| Spatial resolution and quantification |
| Type of Image |
| Image file formats |
| 14-19 | 12 theoretical  +  12 practical | that He is student Able to that Applies Mathematical operations And logical which can Implement it on  Pictures, in addition to operations Other  Associated By processing The  histogram Image , the student will also be able to that Applies And analyzes  Roads used in  pressure the pictures | Arithmetic operation on image | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| Logical operation on image |
| Image histogram |
| Histogram modification and histogram equalization |
| Image compression techniques (1) |
| Image compression techniques (2) |
| 20-24 | 10 theoretical  +  10 practical | that He is student Able to that Understand File properties Sound and distinguish its types, And also on To understand How to acting Files  Sound Digitally | Sound and Audio Basics | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| Digitization of Sound |
| Nyquist Theorem |
| Synthetic Sound |
| Quantization and transmission of audio |
| 25 | 2 theoretical  +  2 practical | that He is student Able to that Applies Methods used to compress audio files, as well as that Analyze This is amazing Ways and features features Each one From it For the purpose Rate it | Compression of Audio | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| 26-28 | 6 theoretical  +  6 practical | that He is student Able to understand the properties of files Video and that Distinguish between its types, and also understand it . How to acting Files  Video Digitally | Video Basics | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| Video Color Models |
| Types of Video Signals |
| 29 | 2 theoretical  +  2 practical | that He is student Able to that Applies Methods used to compress files Video, as well as on that Analyze This is amazing Ways and features features all  one From it For the purpose Rate it | Video Compression | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |
| 30 | 2 theoretical  +  2 practical | that He is student Able to understand the basics and characteristics of media networks . Multiple | Multimedia over networks | Theoretical presentation using diagrams Illustration + practical lectures + seminars Discussion | Achievement test + discussion and question + homework |

12.**Infrastructure**

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| a. Textbooks |  |
| b. References | 1. Electrical Technology B.L Theraja  2. Electric Circuit , Schaums outline Series |
| c. Recommended books and periodicals (journals, reports, etc.) |  |
| d. Electronic references, internet websites, etc | Google |

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

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| 11. Structure Infrastructure | |
| **Fundamentals of “Multimedia”** , Ze-Nian Li, Mark S. Drew Prentice Hall, 2004. | 1-​ Books The reporter Required |
|  | 2-​ the reviewer Home ( Sources ) |
| * **“Digital Image Processing Using MATLAB** ”, Rafael C. Gonzalez, Richard E. Woods, and Steven   L. Eddins, Prentice Hall, 2004.   * **Digital video processing**​ A. M. Tekalp , Prentice Hall, 2005. * **“The data compression book”** , Mark Nelson, Imprint: M & T Books, Publisher: IDG Books Worldwide, Inc., January 1, 1991. | A Books References that Recommended With it (Fields Scientific , Reports) |
| **Multimedia Tutorial** ” tutorialspoint .  https:// [www.tutorialspoint.com//multimedia/index.htm](http://www.tutorialspoint.com//multimedia/index.htm) | for - the reviewer electronic , Sites  The Internet .... |

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| 12. plan development The decision Academic |
| changing Vocabulary the plan Academic For the decision So that It is done the focus In a way greater on Applications Media Multiple in area Internet And phones Smart. |