اعتماد
NCAAA

T4

2020

Course Specifications

Course Title:	Digital Photography
Course Code:	CSI 530
Program:	Computer Sciences and Information Technology
Department:	Computer Science and Information
College:	Science at Al-Zulfi
Institution:	Majmaah

VISION رؤية
2030
المملكة العربية السعودية
KINGDOM OF SAUDI ARABIA

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Table of Contents

A. Course Identification

1. Credit hours: 3	

2. Course type
a. ☐ University   College   Department ___   Others
b.   Required   ■ Elective

3. Level/year at which this course is offered: leve l 7

4. Pre-requisites for this course (if any)**:** Math 220

5. Co-requisites for this course (if any)**: Nil**

6. Mode of Instruction (mark all that apply)

No	Mode of Instruction	Contact Hours	Percentage
1	Traditional classroom	44	80 %
2	Blended	3	5 %
3	E-learning	3	5 %
4	Correspondence	3	5 %
5	Other	3	5 %

7. Contact Hours (based on academic semester)

No	Activity	Contact Hours
1	Lecture	30
2	Laboratory/Studio	30
3	Tutorial	-
4	Others (specify)	-
	Total	60

B. Course Objectives and Learning Outcomes

1. Course Description

This course is intended to introduce students to the basic concerns in digital photography as a fine art medium, and the computer as a darkroom. Includes digital imaging techniques of scanning, colorcorrection, retouching, composition, content and more. Hardware, image input and output processes,and software are also discussed
As such, after completing this course:
The student should demonstrate a basic knowledge of fundamental digital photographic theory andmake images which correspond to basic photographic design and communication principles.
Students will also demonstrate proficiency in the use of image manipulation software and digital imaging applications in addition to utilizing major computer hardware components and accessories,including scanners, printers, CD recorders and storage devices while managing the color digital workflow through all production stages from image capture to final output. Students will also be able to demonstrate an awareness of contemporary aesthetic, legal and ethical considerations in digital imaging.

2. Course Main Objective

student will be able to:

1. Understand film exposure, print development and print presentation
2. Identify and understand the basic components of a camera
3. become proficient at the technical aspect of photographing with a digital camera.
4. Students will be working with those images in post processing including digital editing, saving, sizing, and posting of those images
5. To develop and practice skills using digital photography tools and the Internet including emailing and posting to a web site.
6. To learn to shoot with digital cameras maximizing the quality of the output from them.
7. To appreciate more about the "Photographer's Art" through the study of historic and contemporary trends and to apply that appreciation to and through your own work.

3. Course Learning Outcomes

	CLOs	Aligned PLOs
1	**Knowledge and Understanding**	
1.1	Understand the main abstract concepts related to thefield of Digital Photography	K2
1.2	understanding of the core concepts of digital photography such as Histogram and color processing	
1.3	Understand film exposure, print development and print presentation	
1.4	Identify and understand the basic components of a camera	
2	**Skills :**	
2.1	Analyze and implement the main algorithms to acquire better photographs	S1
2.2	Compare the different pictures produced by different cameras and also evaluate the performanceof different algorithms	
2.3	Evaluate the use of natural and artificial light and its relation to the photographic process	
2.4	Explore and implement alternative film and electronic processes	
3	**Values:**	
3.1	Setup and Evaluate the use and functions of a 4x5 camera	C1
3.2	Explore and implement advanced digital exposure methods	
3.3	Applying enhancement methods on digital images based on Matlab toolboxes.	
3.1	Compare and evaluate advanced studio and location lighting techniques	

C. Course Content

No	List of Topics	Contact Hours
1	Introduction to Digital Photography: Image formation, History of Photography, sampling and pixels	6
2	Introduction to Digital Cameras: choosing a camera, in-camera image processing, composing good photographs	6
3	Introduction to Software for Digital Photography: Photoshop image basics, image enhancement, image combination	3
4	Introduction to Light: Light & reflection, photographic lighting,	6
5	Introduction to Exposure: Photons & sensors, autofocus, exposure metering	6
6	Introduction to Optics: Lenses & apertures, practical photographic lenses.	6
7	Histograms and Software Tools: Thresholding, Gamma curve,	6
8	Color and Artifacts: Trichromatic theory, noise & ISO, noise Removal	6
Total		45

D. Teaching and Assessment
1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.0	**Knowledge and Understanding**		
1.1	Understand the main abstract concepts related to thefield of Digital Photography	▪ **Direct Teaching:** Lectures, PowerPoint slides and discussion.	- Homework tasks - Quiz - Midterms - Final Exam
1.2	understanding of the core concepts of digital photography such as Histogram and color processing		
1.3	Understand film exposure, print development and print presentation		- E-learning - Internet search

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
1.4	Identify and understand the basic components of a camera	**Aimed Teaching** Discovery and Oral Questions	- Oral Exam
2.0	**Skills**		
2.1	Analyze and implement the main algorithms to	**Indirect Teaching:** Brainstorming - Free Discovery –Inquiry	- HW Exercises - Lab Exam - Oral Exam - Presentations
2.2	acquire better photographs		
2.3	Compare the different pictures produced by different cameras and also evaluate the performance of different algorithms		
2.4	Evaluate the use of natural and artificial light and its relation to the photographic process		
3.0	**Values**		
3.1	Setup and Evaluate the use and functions of a 4x5 camera	**Course Project: (Work group)** critical thinking and ability to seek solutions.	Introduce group project and case study approaches to enable students to have an experience in problem solving situations.
3.2	Explore and implement advanced digital exposure methods		
3.3	Applying enhancement methods on digital images based on Matlab toolboxes.		

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score
1	Homework 1	2	2%
2	QUIZ 1	3	5%
3	Homework 2	4	2%
4	QUIZ 2	5	5%
5	Midterm 1	6	10%
6	Homework 3	7	2%
7	QUIZ 3	8	5%
8	Homework 4	9	2%
9	QUIZ 4	10	5%
10	Midterm 2	11	10%
11	Lab Exam/ Project Evaluation	14	12%
12	Final Exam	16	40%

*Assessment task (i.e., written test, oral test, oral presentation, group project, essay, etc.)

E. Student Academic Counseling and Support

Arrangements for availability of faculty and teaching staff for individual student consultations and academic advice:
- Determine meeting appointments for the weak' students to solve their problems and give them academic advices.
- One office hour daily
- Dealing a workshops.
- Motivate students

F. Learning Resources and Facilities

1. Learning Resources

Required Textbooks	Michael Freeman's Digital Photography Reference System: The Complete Photographer's Library, in a Box 1st Edition by Michael Freeman (Author) ,2019, ISBN-13: 978-0240813141
Essential References Materials	Digital Photography Essentials Hardcover – Tom Ang (Author) DK; 1st edition (May 16, 2011) , **978-0756682149** SBN-10 : 0756682142
Electronic Materials	https://core.ac.uk/download/pdf/4395699.pdf https://study.com/academy/lesson/how-to-create-digital-images.html https://sites.psu.edu/ist130arp14/
Other Learning Materials	Matlab toolboxes: Image processing

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classroom - Laboratory
Technology Resources (AV, data show, Smart Board, software, etc.)	Data show – Smart Board
Other Resources (Specify, e.g. if specific laboratory equipment is required, list requirements or attach a list)	Matlab software – Weka – Python Programming

G. Course Quality Evaluation

Evaluation Areas/Issues	Evaluators	Evaluation Methods
1. Questionnaires (course evaluation) filled by the students and acquired electronically by the University	Students	Indirect Assessment
2. Students-faculty management meetings		
3. Departmental internal review of the course.	Department Council	Questionnaires
4. Discussion with the industrial partnersto enhance the courses in order to meet their needs.	Stockholders	Meetings
5. Midterms and Final Exam	Course CoordinatorStaff	Direct Assessment
6. Project Evaluation		

Evaluation areas (e.g., Effectiveness of teaching and assessment, Extent of achievement of course learning outcomes, Quality of learning resources, etc.)
Evaluators (Students, Faculty, Program Leaders, Peer Reviewer, Others (specify)
Assessment Methods (Direct, Indirect)

H. Specification Approval Data

Council / Committee	
Reference No.	
Date	