



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title:	BSMS Internship / INTR464
Weight:	(0-0-3)
Pre-requisite:	Completions of at least 90 credit hours and minimum of CGPA 2
NQF Level: 8	NQF Notional Hours / Credits: 240 Notional Hours 24hrs

Description: In today's turbulent economic environment, a country workforce is increasingly pivotal to business success. Stemmed from the desire and sense of responsibility that Ahlia University has against the society and their own students, and as part of their vision, of being leaders in the market of higher education, they do understand the need to invest in their capital made of partially their students in order to equip the market with talented workforce. Based on this INTR 464 course was introduced, representing a structured opportunity to incorporate academic, professional and personal skills development which enables the student to gain a planned and directed learning experience. It enables the student to integrate knowledge gained through their classroom learning with the competencies made available through actual experience in a professional setting. The internship programme requires a minimum of 120 hours of work at the internship worksite. Students will receive academic credit after a successful completion of the programme. The numbers of credits that are earned by the student as a result of successful completion of the internship programme are 3 credits.

Objective:

The BSMS Internship is a form of experiential learning and the aims are:

1. To provide students from the college with an opportunity to integrate knowledge, skills and competencies learned in the classroom with practical application and skills enhancement in a related work-based/professional environment.
2. To give students an opportunity to gain experience of a relevant work environment and to develop links with professionals in the field they are considering for a future career.
3. To ultimately enhance student employability and at the same time to build relationships between the university, businesses and the local community.
4. To give employers an opportunity to guide and also evaluate future talent in the field of Multimedia: 3D Design and Modeling, Image processing, Voice processing, Animation and video processing, web design, and distributed systems.

Semester:

Instructor (s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate critical knowledge and understanding of applying concepts and theories of Multimedia	Knowledge: Theoretical Understanding (Level 8)
A2	Contemporary Trends, Problems and Research: Demonstrate creativity in the application of knowledge and research skills to generate information and data useful to the organization related to Multimedia	Knowledge: practical application (Level 8)
A3	Professional Responsibilities: Operate specialist level leads to decision-making to support the organization in relation to Multimedia	Competence: Autonomy and Responsibility (Level 8)
B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem solving: Use special quantitative skills to solve practical real-world problems in the area of Multimedia	Skills: Communication, ICT and Numeracy (Level 8)
B2	B2. Modeling and Design : NA	N/A
B3	Application of methods and tools: Demonstrate the use of specialist level skill in Multimedia applications.	Knowledge: practical application (Level 8)
C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	C1. Analytical: Use range of approaches to critically analyze and evaluate internal and external criticism in the area of Multimedia	Generic, Problem Solving and Analytical Skills (Level 8)
C2	C2. Synthetic: Demonstrate insight, interpretation and creativity to draw conclusions in Multimedia	Generic, Problem Solving and Analytical Skills (Level 8)
C3	C3. Creative: Make informed judgments in situations by the use of critical analysis in the area of Multimedia	Generic, Problem Solving and Analytical Skills (Level 8)
D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	D1. Communication Communicate effectively with a variety of stakeholders of the organization who manifest different levels of technical expertise and knowledge in various specializations in Multimedia	Skills: Communication, ICT and Numeracy (Level 8)
D2	D2. Teamwork and leadership: Demonstrate leadership and teamwork skills to support the organization in Multimedia related projects	Competency: Autonomy, Responsibility, and context (Level 8)
D3	D3. Organizational and development: Lead Projects in the area of Multimedia and propose recommendations for decision making	Competency: Autonomy, Responsibility, and context (Level 8)

D4	D4. Ethics and social responsibility: Operate specialist level in various functions in light of ethical and social norms in a way that contribute to the social responsibility of the organization.	Competency: Autonomy, Responsibility, and context (Level 8)
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Teaching and Learning Methods		
<ul style="list-style-type: none"> • On the job Training, • Mentoring, Tasks, Supervision <p>Note: <i>academic supervision, site supervision, observation, and learning by doing, all aided by Internship program guidelines</i></p>		
Assessment/Grading Scheme		
<p>Student report (two monthly and one final report), site supervisor evaluation (mid and final), and academic supervisor evaluation.</p> <p>The student will be given grade <u>PASS</u> or <u>FAIL</u> based on his/her total points achieved on the undertaken Tasks. A letter grade <u>P</u> will be issued for the student if he/she obtained 70 points or more on the tasks shown above in the grading Scheme table and a letter grade <u>F</u> if he/she obtained less than 70 points.</p>		
No.	Tasks	Weightage %
1.	Site Supervisor Mid Evaluation	25
2.	Site Supervisor Final Evaluation	25
3.	Academic Supervisor Evaluation	10
4.	Student Bi-monthly Report 1	10
5.	Student Bi-monthly Report 2	10
6.	Student Final Report	20
7.	Total	100



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 327 -Multimedia Softwares II
Weight: (2-2-3)
Prerequisite: ITMS 307
NQF Level Allocated: 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

Description: This course builds on the knowledge gained from a previous course (ITMS 307). The students will practice mainly two dimension graphs and animation professional software's. The course will cover vector graphics and sound processing, how it works and how to create them using the appropriate software

Objective:

1. To understand the advanced concepts of vector graphics.
2. To apply the stages of creating vector base documents.
3. To understand the advanced concepts of sound processing.
4. To apply the phases of manipulating sound files.

Semester:

Instructor (s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate advanced knowledge and understanding of vector graphics and sound processing, how it works and how to create them using the appropriate software: Adobe Illustrator and Audacity.	Knowledge: theoretical understanding [Level 7]
A2	Contemporary Trends, Problems and Research: NA	
A3	Professional Responsibility: NA	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Describe the problems related to Vector graphics documents and Sound Files and solve them respectively by efficient vector graphics processing tool and Sound processing tool.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design, implements, and evaluates a vector graphics documents and sound files.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Apply appropriate methods, techniques, and tools used in modern vector graphics documents and sound files.	Knowledge: Practical Application [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically analyze a problem and choose the appropriate methods in a vector graphics documents and sound files to solve it.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: NA	
C3	Creative Thinking and innovation: Demonstrate creativity in relation to the concepts of vector graphics and sound files methods and techniques in an effective manner to create new ideas and concepts.	Knowledge: Practical Application [Level 7]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Show the ability to express and communicate ideas effectively, in written and oral form.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership: NA	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 6]
D4	Ethics and Social Responsibility: NA	

Course Structure (Outline)

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec	Lab				
1	4	-	A1	Introduction	Lecture/	-
2	2	2	A1, C1, D1	Adobe Illustrator getting to know the work area	Lecture	Oral Inquiry
3	2	2	A1, B1, B2, B3, D1	Paths	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
4	2	2	A1, B2, B3, C1, C3, D1	Selecting and aligning	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
5	2	2	A1, B2, B3, C1, D1	Creating shapes	Lecture/ Lab Demonstration	Oral Inquiry

					n/ Supervised Work	
6	2	2	A1,B1,B2	Transforming objects	Lecture/ Lab Demonstration/ Supervised Work	Quiz 1
7	2	2	A1, B2,B3,C1,D1	Drawing with the pen tool	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
8	2	2	A1, B2,B3,C1,D1	Color and painting	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
9	2	2	A1, B1, B2 B3, C1, D1,D3	Working with type and layers	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 1
10	2	2	A1, B1, B2, B3, C1, C3	Working with gradients	Lecture/ Lab Demonstration/ Supervised Work	Test
11	4	-	A1	Introduction to sound processing	Lecture	-
12	2	2	A1, C1, D1	Overview of Audacity	Lecture	Oral Inquiry
13	2	2	A1, B1, B2 B3, C1, D1,D3	Recording and editing	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 2
14	2	2	A1,B1,B2	Processing a sound, Applying effects	Lecture/ Lab Demonstration/ Supervised Work	Quiz 2
15	2	2	B1, B2, B3, C1, C3, D1,D3	Processing a sound, Applying effects, Revision	Lecture/ Presentation Of Projects By	Final Project

					Students	
16	1	1	A1, B1, B2, B3, C1, C3	All Topics		Final Exam

Teaching Materials:

Textbook(s):	1- Brian Wood, Adobe Illustrator CC Classroom in a book (2019 Release), Adobe Press, 2020,ISBN: 978-0135262160
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle .
Reference(s):	<ol style="list-style-type: none"> 1. Brian Wood, Adobe Illustrator CC Classroom in a book, Adobe Press, 2014,ISBN: 978-0-13-390565-6 2. Adobe Creative team, Adobe Illustrator CS6, Classroom in book, Adobe Press, 2012. 3. Aquent Creative Team, "AdobeIllustrator® CS4DigitalClassroom",Wiley Publishing, Inc, 2009. 4. Adobe Creative Team, "Adobe Illustrator CS4 Classroom in a Book", Adobe Press, 2008.

Assessment

Type of Assessment ¹	Description ²	ILOs ³	Weighting
Lab Project 1	Students will be asked (individually) to use and apply Adobe Illustrator tools to analyze and process logos, art works to develop new designs. The output of the project should be submitted electronically by the end of week 9 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	A1, B1, B2 B3, C1, D1,D3	5%
Lab Project 2	Students will be asked (individually) to use and apply Audacity Software to analyze and process sounds to develop new sounds files. The output of the project should be submitted electronically by the end of week 13 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	A1, B1, B2 B3, C1, D1,D3	5%

Quizzes (Average of two quizzes)	The quiz will consist of MCQs, short-answer, essay, problem solving questions, and practical questions. The duration of the quiz is 20 minutes and will be taken in Lab. The purpose of the quiz is to assess the students' knowledge and understanding of key concepts, principles theories and practical of Adobe Illustrator and Audacity.	A1,B1,B2	10%
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions. Feedback will be given to students to reaffirm their learning outcomes.	A1, D1	Formative
Test (Written and Practical)	The test will be an in-class 1-hour exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1, B1, B2, B3, C1, C3	30%
Final Project(Report and Presentation)	Students will be asked (individually) to use and apply Adobe Illustrator and Audacity tools to analyze, design, and develop a new complete project includes two dimension graphs, animation, vector graphics and sound processing. The output of the project should be submitted electronically by the end of week 15 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2, B3, C1, C3, D1,D3	10%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1, B2, B3, C1, C3	40%
Overall			100%

Admissions	
Pre-requisites	ITMS 307
Minimum number of students	8
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITCS 431 – Introduction to Data Analytics
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITCS 323

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course will introduce students to data analytics and equip them with some of its basic principles and tools. Students will learn concepts, techniques, and tools they need to deal with various facets of data analytics. Topics that will be covered include data formats, loading, and cleaning; data storage in relational and non-relational stores; data governance, data analysis using supervised and unsupervised learning using up to date standard tools. In addition, this course would enable students to identify, locate, analyze, and report on business data sources both qualitatively and quantitatively.

OBJECTIVES:

1. To critically analyze and interpret data using appropriate tools to support the decision-making process.
2. To use appropriate models of analysis, assess the quality of input, derive insight from results, and investigate potential issues.
3. To interpret data findings effectively to any audience, orally, visually and in written formats.

SEMESTER:
INSTRUCTOR:
OFFICE TEL:

ACADEMIC YEAR:

INTENDED LEARNING OUTCOMES (ILOS)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories</u> : Demonstrate critical knowledge and understanding of concepts of data analytics.	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research</u> : Demonstrate detailed knowledge of the current data analytics issues and research.	Knowledge: theoretical understanding [Level 8]
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Deal with advanced and complex real data analytics problems and solve them.	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design</u> : Apply standard research to design data analytics models that meet user requirements.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : Apply specialist skills and advanced data analytics tools to develop data analytics models.	Knowledge: Practical Application [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically analyze the performance of the developed data analytics models.	Generic Problem Solving & Analytical skills [Level 8]
C2	<u>Synthetic</u> : Identify and implement components of data analytics tools into one complete data analytics model.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative Thinking and innovation</u> : Demonstrate creativity for solving problems related to data analytics	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/Level
D1	<u>Communication</u> : Use special skills to convey complex information and ideas in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 8]
D2	<u>Teamwork and Leadership</u> : Operate Specialist level and work effectively as a member/leader of a team who may plan, design, and implement a data analytics model.	Competence: Autonomy, Responsibility and Context [Level 8]
D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to organize ideas and effectively allocate time in given assignments.	Competence: Autonomy, Responsibility and Context [Level 8]

D4	Ethical and Social Responsibility: NA	
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Course Structure (Outline)						
Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1,B3	<ul style="list-style-type: none"> • The Data Science Road Map <ul style="list-style-type: none"> ○ Find the problem ○ Understand the data ○ Exploratory Analysis ○ Extract Features 	Lecture/ Lab Demonstration	
2	2	2	A1	<ul style="list-style-type: none"> • Data Munging <ul style="list-style-type: none"> ○ String Manipulation ○ Regular Expressions ○ Data Cleaning 	Lecture	Oral Participation*
3	2	2	A1	<ul style="list-style-type: none"> • Visualizations and Simple Metrics <ul style="list-style-type: none"> ○ Exploratory metrics ○ Visualization techniques (histograms, bar charts, means, standard deviations, medians, and quantiles) 	Lecture	Oral Participation*
4	2	2	A1	<ul style="list-style-type: none"> • Machine Learning Overview <ul style="list-style-type: none"> ○ Background about machine learning 	Lecture	Oral Participation*
5	2	2	A1	<ul style="list-style-type: none"> • Machine Learning Classification <ul style="list-style-type: none"> ○ What Is a Classifier? ○ Binary versus Multiclass ○ Specific Classifiers ○ Evaluating Classifiers 	Lecture	Oral Participation*
6	2	2	A1, B3	<ul style="list-style-type: none"> • Unsupervised Learning: Clustering and Dimensionality Reduction 	Lecture/ In-Lab Supervised Work	Oral Participation*

				<ul style="list-style-type: none"> ○ Principal Component Analysis and Factor Analysis ○ Factor Analysis ○ Limitations of PCA ○ Clustering 		
7	2	2	A1	<ul style="list-style-type: none"> • Regression <ul style="list-style-type: none"> ○ Least Squares ○ Fitting Nonlinear Curves ○ Correlation of Residuals ○ Linear Regression ○ LASSO Regression and Feature Selection 	Lecture	Oral Participation*
8	2	2	A1, B3	<ul style="list-style-type: none"> • Data Encodings and File Formats <ul style="list-style-type: none"> ○ CSV Files ○ JSON Files ○ XML Files ○ HTML Files ○ Tar Files ○ GZip Files 	Lecture/ In-Lab Supervised Work	In-Lab Exercises*/ Oral Participation*
9	2	2	A1, B1, B2, B3	<ul style="list-style-type: none"> • Big Data <ul style="list-style-type: none"> ○ What Is Big Data? ○ Hadoop: The File System and the Processor ○ Using HDFS ○ Spark Overview ○ Spark Operations ○ Configuring Spark ○ Spark Tips 	Lecture/ In-Lab Supervised Work	In-Lab Exercises*/
10	2	2	A1, B1, B2, B3,	<ul style="list-style-type: none"> • Databases 	Lecture/ In-Lab Supervised Work	In-Lab Exercises*/ Oral Participation*/

			C1	<ul style="list-style-type: none"> ○ Relational Databases and MySQL ○ Key-Value Stores ○ Wide Column Stores ○ Document Stores 		Major Test
11	2	2	A1, A2, B1, B2, B3, D1, D3	<ul style="list-style-type: none"> • Natural Language Processing <ul style="list-style-type: none"> ○ Tokenization ○ Central Concept: Bag-of-Words ○ Word Weighting: TF-IDF ○ n-Grams ○ Stop Words ○ Lemmatization and Stemming ○ Synonyms 	Lecture/ In-Lab Supervised Work/ Independent Learning	In-Lab Exercises*/ Oral Participation*/ Assignment 1
12	2	2	A1, B1, B2, B3, C1, C2, C3	<ul style="list-style-type: none"> • Time Series Analysis <ul style="list-style-type: none"> ○ Time Series versus Time-Stamped Events ○ Resampling and Interpolation ○ Smoothing Signals ○ Logarithms and Other Transformations ○ Trends and Periodicity ○ Windowing 	Lecture/ In-Lab Supervised Work	Lab Project1
13	2	2	A1, B1, B2, B3, C1, C2, C3	<ul style="list-style-type: none"> • Probability <ul style="list-style-type: none"> ○ The Uniform Distribution and Pseudorandom Numbers ○ Nondiscrete, Noncontinuous Random Variables ○ Binomial Distribution ○ Poisson Distribution 	Lecture/ In-Lab Supervised Work	Lab Project2 Oral Participation*

				<ul style="list-style-type: none"> ○ Normal Distribution 		
14	2	2	A1, A2, B1, B2, B3, D1, D3	<ul style="list-style-type: none"> • Statistics <ul style="list-style-type: none"> ○ Bayesian versus Frequentist ○ Hypothesis Testing ○ Multiple Hypothesis Testing ○ Hypothesis Testing: t-Test ○ Bayesian Statistics 	Lecture/ In-Lab Supervised Work/ Independent Learning	Assignment 2 (Literature Review)
15	2	2	A2, B1, B2, B3, C1, C2, C3, D1, D2, D3	Student Projects	Project Supervision	Evaluation of Project Presentations and Reports
16	2	-	A1, B1, B2, C1	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	The Data Science Handbook 1st Edition, Field Cady (2017), Wiley
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	1- Predictive Analytics For Dummies, 2nd Edition, Anasse Bari (2016), For Dummies 2- Predictive Analytics: The Power to Predict Who Will Click, Buy, Lie, or Die, Eric Siegel (2016), Wiley; 2 edition 3- Data Analytics for Beginners: Basic Guide to Master Data Analytics, Paul Kinley (2016), Create Space Independent Publishing Platform.

ASSESSMENTS:

Method of Assessment	Description	Learning Outcomes	Weighting
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1	Formative
In-Lab Exercises	Each of the lab exercises consists of a set of practical tasks to be implemented by students individually in class as shown in the above weekly structure. Students work will be observed and directly during the lab sessions.	B3	Formative
Assignments	Two assignments for Literature review. Average will be taken.	A2, D1, D3	15%
Lab Projects	Students will be asked to use and apply appropriate development tools to develop data analytics models. Students has to code, test and deploy interactive data analytics models.	B1, B2, B3, C1, C2, C3	10%
Major Test	The test will be an in-class 90 minutes exam that will consist of short-answer, essay, and problem solving questions and cover the topics studied in the first 8 weeks.	A1, B1, B2, C1	20%
Project	Each group of 2-4 students has to develop a data analytics models for solving a real world problem. Each group has to go through all phases of system development cycle, and submit a report and present the work in the class.	A2, B1, B2, B3, C1, C2, C3, D1, D2, D3	15%
Final Exam	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, analysis, essay, and problem-solving questions.	A1, B1, B2, C1	40%
Overall:			100 %

14. Admissions	
Pre-requisites	ITCS323
Minimum number of students	8
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY**

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITCS 452 – Advanced Mobile Computing
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITCS 427

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course will provide students with both broad and in-depth knowledge, and a critical understanding of up-to-date mobile computing from different viewpoints: infrastructures, principles and theories, technologies, and applications in different domains. In addition, this course emphasizes concepts pertains to Mobile Adhoc Network and Wireless Sensor Network and different applications based on routing protocols. The course will provide an advanced in-depth overview of the mobile computing subject area, including the latest research. This course aims at the discovery of comprehensive and important current issues in mobile computing and communications.

OBJECTIVES:

1. To master the current trends of mobile computing technologies.
2. To illustrate current and up-to-date architectures and protocols in Mobile computing.
3. To evaluate critical design tradeoffs associated with different mobile technologies, architectures, interfaces, and business models.
4. To exemplify the impact of usability, security, privacy and commercial viability of different mobile technologies.
5. To enhance the different applications that mobile computing offers to people, employees, and businesses.
6. To critically describe the possible future of advanced mobile computing technologies and applications.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

INTENDED LEARNING OUTCOMES (ILOS)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories:</u> Demonstrate <i>critical knowledge and understanding for concepts of mobile computing.</i>	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research:</u> Demonstrate <i>detailed knowledge and understanding of specialist computing issues emerging mobile computing technologies.</i>	Knowledge: theoretical understanding [Level 8]
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving:</u> Use <i>specialist level of up-to-date advanced mobile computing problems and solve them.</i>	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design:</u> <i>Plan and undertake projects to design advanced and up-to-date mobile applications</i>	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools:</u> <i>Demonstrate creativity application of advanced specialized and up-to-date mobile programming tools while developing mobile application.</i>	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic:</u> <i>Critically analyze the performance of the developed and most successful mobile applications.</i>	Generic Problem Solving & Analytical skills [Level 8]
C2	<u>Synthetic:</u> Demonstrate insight in integrating components of an application.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative Thinking and innovation:</u> <i>Identify and Implement solutions for problems related to current mobile computing through investigation of different protocols, tools, and technologies.</i>	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/Level
D1	<u>Communication</u> : Use Specialist skills to communicate complex information and ideas in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership</u> : Operate Specialist skills to work effectively as a member/leader of a team who may plan, design, and implement a mobile application.	Competence: Autonomy, Responsibility and Context [Level 8]
D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to lead projects and organize ideas and effectively allocate time in given assignments.	Competence: Autonomy, Responsibility and Context [Level 8]
D4	<u>Ethical and Social Responsibility</u> : NA	

Course Structure (Outline)						
Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Mobile Computing- An Overview: <ul style="list-style-type: none"> Motivations, Concepts, Challenges, and Applications Of Mobile Computing. Introduction to mobile development, and SPA Overview of iOS and Android operating system. Types of mobile apps (Native, Web, Hybrid) 	Lecture	
2	2	2	A1	<ul style="list-style-type: none"> Describe Mobile Foundation components and architecture Integrate with data sources Understand and be able to differentiate the different types of client-side development enabled by Mobile Foundation 	Lecture	Oral Participation*

3	2	2	A1	<ul style="list-style-type: none"> • Configure and use the CLI • Manage the server profile • Create and manage apps • Create and manage adaptors 	Lecture	Oral Participation*
4	2	2	A1	<ul style="list-style-type: none"> • Add the Mobile Foundation SDK to an application • Connect to the Mobile Foundation Server • Customize the startup process • Use WL resources requests to connect to server side resources • Debug an application 	Lecture	Oral Participation*
5	2	2	A1	<ul style="list-style-type: none"> • Add the Mobile Foundation SDK to an application • Connect to the Mobile Foundation Server • Customize the startup process • Use WL resources requests to connect to server side resources • Debug an application 	Lecture	Oral Participation*
6	2	2	A1, B3	<ul style="list-style-type: none"> • Create Mobile Foundation adaptors • Test adaptors using the OpenAPI Specification • Invoke Java code from adaptors 	Lecture/ In-Lab Supervised Work	Oral Participation*

7	2	2	A1	<ul style="list-style-type: none"> • Invoke adapters from other adapters • Use Mobile First server side APIs 	Lecture	Oral Participation*
8	2	2	A1, B1, B2, B3	<ul style="list-style-type: none"> • Configure Push notifications • Implement and test Push and SMS Notification mechanisms 	Lecture/ In-Lab Supervised Work	In-Lab Exercises*/ Oral Participation*
9	2	2	A1, B1, B2, B3	<ul style="list-style-type: none"> • Describe the OAuth 2.0 based Mobile Foundation security framework • Manage device enrollment • Create predefined security checks • Create custom security checks 	Lecture/ In-Lab Supervised Work	In-Lab Exercises*/
10	2	2	A1, B1, B2, B3, C1	<ul style="list-style-type: none"> • Describe the OAuth 2.0 based Mobile Foundation security framework • Manage device enrollment 	Lecture/ In-Lab Supervised Work	In-Lab Exercises*/ Oral Participation*/ Major Test
11	2	2	A1, A2, B1, B2, B3, D1, D3	<ul style="list-style-type: none"> • Create predefined security checks • Create custom security checks 	Lecture/ In-Lab Supervised Work/ Independent Learning	In-Lab Exercises*/ Oral Participation*/ Assignment 1
12	2	2	A1, B1, B2, B3, C1, C2, C3	<ul style="list-style-type: none"> • Build and deploy applications and adapters to multiple environments • Configure Mobile Foundation Server settings 	Lecture/ In-Lab Supervised Work	Lab Project1 Oral Participation*

13	2	2	A1, B1, B2, B3, C1, C2, C3	<ul style="list-style-type: none"> • Configure and deploy adapters • Migrating from earlier releases 	Lecture/ In-Lab Supervised Work	Lab Project2
14	2	2	A1, A2, B1, B2, B3, D1, D3	<ul style="list-style-type: none"> • Understand the capabilities provided by Mobile Foundation Operational Analytics • Enable access to raw and analytic reporting • Use the Analytics REST API • Access client-side crash logs • Use MobileFirst Analytics to capture custom user analytics 	Lecture/ In-Lab Supervised Work/ Independent Learning	Assignment 2 (Literature Review)
15	2	2	A2, B1, B2, B3, C1, C2, C3, D1, D2, D3	Student Projects	Project Supervision	Evaluation of Project Presentations and Reports
16	2	-	A1, A2, B1, B2, C1	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	C1000-003 IBM Mobile Foundation v8.0 Application Development Online Certification Video Learning Success Bundle. Esoftcert, PTNR01A998WXY; 1st edition (July 7, 2019)
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle

REFERENCE(S):	<p>1- Cory Beard, William Stallings (2015). Wireless Communications Networks and Systems Global Edition, Pearson Higher Ed. ISBN: 9781292108711</p> <p>2- Herve Franceschi (2017). Android App Development, Jones & Bartlett Learning. ISBN: 978-1284092127</p> <p>3- Trish Cornez, Richard Cornez (2015). Android Programming Concepts, Jones & Bartlett Learning. ISBN: 978-1284070705.</p> <p>4- Kyle Mew (2017). Android Design Patterns and Best Practices, Packt Publishing. ISBN: 978-1786467218.</p> <p>5- Clifton I. G. (2015) Android User Interface Design: Implementing Material Design for developers, 2nd Edition Addison-Wesley Professional. ISBN:</p>
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ASSESSMENTS:

Method of Assessment	Description	Learning Outcomes	Weighting
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1	Formative
In-Lab Exercises	Each of the lab exercises consists of a set of practical tasks to be implemented by students individually in class as shown in the above weekly structure. Students work will be observed and directly during the lab sessions.	B3	Formative
Assignments	Two assignments for Literature review. Average will be taken.	A2, D1, D3	15%
Lab Projects	Students will be asked to use and apply appropriate development tools to develop and manipulate specific mobile applications. Students has to code, test and deploy interactive mobile applications with more emphasizes on the use of creative efficient modern User Interfaces, communication, telephony, graphics and multimedia components.	B1, B2, B3, C1, C2, C3	10%
Major Test	The test will be an in-class 90 minutes exam that will consist of short-answer, essay, and	A1, B1, B2, C1	20%

	problem solving questions and cover the topics studied in the first 8 weeks.		
Project	Each group of 2-4 students has to develop a mobile application for solving a real world problem. Each group has to go through all phases of system development cycle, and submit a report and present the work in the class.	A2, B1, B2, B3, C1, C2, C3, D1, D2, D3	15%
Final Exam	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, analysis, essay, and problem-solving questions.	A1, B1, B2, C1	40%
Overall:			100 %

14. Admissions	
Pre-requisites	ITCS 427
Minimum number of students	8
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE**

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 201 - Introduction to Multimedia Systems

WEIGHT: (3 - 0 - 3)

PREREQUISITE: ITCS 101

NQF Level Allocated: Level 6

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course focuses on building the theoretical knowledge about Multimedia Systems. It emphasize on learning the architecture, techniques, tools and development phases of Multimedia Systems. Students will understand the underlying concepts of multimedia, and gain knowledge about the state-of-the-art in this field.

OBJECTIVES:

1. To understand the basic concepts, components, and tools of Multimedia Systems.
2. To develop an understanding of the elements constituting the development of effective multimedia systems.
3. To identify the evolution, latest trends, and state-of-the-art in multimedia technology, standards, and applications.

SEMESTER:
INSTRUCTOR:
OFFICE TEL.:
EMAIL:

ACADEMIC YEAR:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories:</u> <i>Demonstrate detailed knowledge and understanding related to fundamental elements of multimedia systems.</i>	Knowledge: theoretical understanding [Level 6]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	
B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving:</u> <i>Use some advanced skill to solve them by using a variety of multimedia technologies.</i>	Knowledge: Practical Application [Level 6]
B2	<u>Modeling and Design:</u> Design multimedia systems by choosing appropriate components and models that satisfy user requirements.	Knowledge: Practical Application [Level 6]
B3	<u>Application of Methods and Tools:</u> NA	

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic:</u> <i>Evaluate different multimedia technologies and problems needed for developing multimedia systems.</i>	Generic Problem Solving & Analytical skills [Level 6]
C2	<u>Synthetic:</u> NA	
C3	<u>Creative:</u> <i>Deal with defined issues in designing multimedia components and systems.</i>	Generic Problem Solving & Analytical skills [Level 6]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/ Level
D1	<u>Communication:</u> <i>Use basic skills to communicate ideas in oral and written form.</i>	Communication, ICT and Numeracy Skills [Level 6]

D2	<u>Teamwork and Leadership: NA</u>	
D3	<u>Organizational and Developmental Skills: NA</u>	
D4	<u>Ethics and Social Responsibility: NA</u>	

Course Structure (Outline)						
Week	Hours		ILOs	Topic s	Teaching Method	Assessment Method
	Lecture					
1	3		A1	Syllabus and Creating Moodle accounts Introductions: <ul style="list-style-type: none"> Information Systems overview 	Lecture/ Class Discussion	-
2	3		A1	Introduction to multimedia systems: <ul style="list-style-type: none"> What is multimedia? History of multimedia. Components of multimedia systems 	Lecture/ Class Discussion	Oral Participation *
3	3		A1	Introduction to multimedia: <ul style="list-style-type: none"> Web and Internet multimedia applications. Transition from conventional media to digital media. 	Lecture/ In- Class Supervised Work	Quiz1
4	3		A1, B1, C1	Computer Fonts and Hypertext: <ul style="list-style-type: none"> Usage of text in Multimedia. Families and faces of fonts. Outline fonts. 	Lecture/ In- Class Supervised Work	Oral Participation *
5	3		B1,B2,C1,C3,D 1	Computer Fonts and Hypertext: <ul style="list-style-type: none"> Bitmap fonts. International character sets and hypertext. Digital font's techniques 	Lecture/ In- Class Supervised Work	Assignment1
6	3		A1, B2	Audio fundamentals and representations: <ul style="list-style-type: none"> Digitization of sound. Frequency and bandwidth. Decibel system. Data rate. Audio file format. Sound synthesis. 	Lecture/ In- Class Supervised Work	Oral Participation *

7	3		B1,B2,C1,C3,D 1	Audio fundamentals and representations: <ul style="list-style-type: none"> • MIDI. • Wavetable, • Compression and transmission of audio on Internet. 	Lecture/ In-Class Supervised Work	Assignment 2
8	3		A1, B1, B2, C1	Image Fundamentals and representations: <ul style="list-style-type: none"> • Colour Science. • Colour. • Colour Models. • Colour palettes. • Dithering, 2D Graphics. • Image. • Compression and File Formats: GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS, PDF 	Lecture/ In-Class Supervised Work	Oral Participation *
9	3		A1, C1	Image Fundamentals and representations: <ul style="list-style-type: none"> • Basic Image Processing. • White balance correction. • Dynamic range correction. • Gamma correction. • Photo Retouching. 	Lecture/ In-Class Supervised Work	Quiz 2
10	3		A1, B1, C1	Video and Animation: <ul style="list-style-type: none"> • Video Basics. • How Video Works. • Broadcast Video Standards. • Analog video. • Digital video. • Video Recording and Tape formats. 	Lecture/ In-Class Supervised Work	Major Test
11	3		A1, B2, C1	Video and Animation: <ul style="list-style-type: none"> • Shooting and Editing Video (Use Adobe Premier for editing). • Video Compression and File Formats. • Video compression based on motion compensation. • MPEG-1, MPEG-2, MPEG-4, MPEG-7, MPEG-21. 	Lecture/ In-Class	Oral Participation *
12	3		A1, B1	Video and Animation: <ul style="list-style-type: none"> • Animation: Cell Animation. • Computer Animation. • Morphing. 	Supervised Work	Oral Participation *

13	3		A1	Multimedia Authoring: • Multimedia Authoring Basics.	Lecture/ In-Class Supervised	Oral Participation *
14	3		B1,B2,C1,C3,D 1	Multimedia Authoring: • Some Authoring Tools.	Lecture/ Independent Learning	Assignment 3
15	3			• Revision.		
16			A1, B1, B2, C1, C3	All Topics	Final Exam	

TEACHING MATERIALS

TEXTBOOK(S): 1. Tim Morris, “Multimedia Systems Delivering, Generating and Interacting with Multimedia”, 2012, Springer London.

HANDOUT(S): Power point slides, <http://www.ahlia.edu.bh/moodle>.

REFERENCE(S):

1. Ze-Nian Li, Mark S. Drew, Jiangchuan Liu, “Fundamentals of Multimedia (2nd ed.)”, 2014, Springer International Publishing.
2. Tay Vaughan, “Multimedia making it work”, 2014, McGraw-Hill Education; 9 edition.
3. An Introduction to Digital Multimedia 2nd Edition, 2013, Jones & Bartlett Learning; 2 edition, ISBN 144968839X-978-1449688394.
4. Vic Costello, “Multimedia Foundations: Core Concepts for Digital Design, 2nd Edition”, 2017, T&F/FOCAL PRESS.

ASSESSMENTS

Type of Assessment	Description	ILOs	Weighting
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during	D1, A1	Formative
Quizzes	The test will be an in-class 30 minutes quiz that will consists of short-answer and problem solving questions. Also, it covers the topics as shown in the above weekly structure.	A1	10%
Assignments	The assignments are to evaluate the students on the analysis and design of multimedia components. A Soft copy submission is required by the end of specified dates through the course page in Moodle where answers will be checked by Turnitin against plagiarism.	B1, B2, C1, C3, D1	20%
Major Test	The written test will be an in-class 1:30 hour test that will consists of MCQs, short-answer, essay, and problem solving questions and cover the topics studied in the first 8 weeks.	A1, B1, C1	30%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B1, B2, C1, C3	40%
Overall			100%

13. Admissions	
Pre-requisites	ITCS 101
Minimum number of students	5
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 205 - Internet Applications and Services

Weight: (2 - 2 - 3)

Prerequisite: ITCS 101

NQF Level Allocated: Level 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

Description: This course focuses on designing and implementing websites using HTML5 and CSS3. Students get hands-on practice working with fundamentals through superior techniques to get the most out of their experience by teaching them the basics coding for web design, HTML5 and CSS3. In addition, students learn the new features of HTML5 and CSS3 styles.

Objectives:

1. To critically understand the basic concepts and terminology of static web sites.
2. To acquire the foundation of design techniques for static web sites.
3. To gain the different techniques of designing and development for entire static web sites using HTML 5 and CSS 3.

Semester:
Instructor:
Office Tel:
Email:

Academic Year:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate knowledge and understanding of Web Design, how to plan, organize, and create a website from start to finish using HTML5 and CSS3.	Knowledge: theoretical understanding [Level 7]
A2	Contemporary Trends, Problems and Research:	N/A
A3	Professional Responsibility:	N/A

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving:	N/A
B2	Modeling and Design: Design the architecture of static websites by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Employ appropriate methods, techniques, and tools used in modern Multimedia practical packages and web design methods to design websites.	Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Analyze websites through source coding to explore the content of pages.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic:	N/A
C3	Creative: Use a range of a creative approach to develop insightful projects ideas in the term of design and layout during the lab sessions.	Knowledge: Practical Application/ Generic Problem Solving [Level 7]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Express and communicate ideas effectively through storyboards and oral form through presentations.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership:	N/A
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas for developing websites and to manage resources efficiently.	Competence: Autonomy, Responsibility and Context [Level 6]
D4	Ethics and Social Responsibility:	N/A

Course Structure (Outline)

Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Introduction: <ul style="list-style-type: none"> • Introduction to HTML5 • Editing HTML5 • First HTML5 Example 	Lecture, Exercises, Lab Demonstration	-
2	2	2	A1, D1	Using HTML5: <ul style="list-style-type: none"> • Headings • Linking • Images, alt Attribute • Void Elements 	Lecture, Lab Demonstration	Oral Participation
3	2	2	B2, B3, C1, C3, D1, D3	Using HTML5: <ul style="list-style-type: none"> • Using Images as Hyperlinks • Special Characters and Horizontal Rules • Lists 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
4	2	2	B2, B3, C1, C3, D1, D3	Using HTML5: <ul style="list-style-type: none"> • Tables 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
5	2	2	B2, B3, C1, C3, D1, D3	Using HTML5: <ul style="list-style-type: none"> • Forms 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
6	2	2	A1, B3	Using HTML5: <ul style="list-style-type: none"> • New HTML5 Form input: <ul style="list-style-type: none"> input Type color input Type date input Type datetime input Type datetime-local input Type email input Type month input Type number input Type range input Type search input Type tel input Type time input Type url input Type week 	Lecture, Exercises, Lab Demonstration	Quiz 1

7	2	2	B2, B3, C1, C3, D1, D3	Using HTML5: <ul style="list-style-type: none"> input and datalist Elements and autocomplete Attribute input Element autocomplete Attribute datalist Element 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
8-9	4	4	B2, B3, C1, C3, D3	Using HTML5: <ul style="list-style-type: none"> Page-Structure Elements: header Element nav Element figure Element and figcaption Element article Element summary Element and details Element section Element aside Element meter Element footer Element Text-Level Semantics: mark Element and wbr Element 	Lecture, Exercises, Lab Demonstration	Lab Test
10	2	2	B2, B3, C1, C3, D3	Using CSS3: <ul style="list-style-type: none"> Introduction to CSS Inline Styles Embedded Style Sheets 	Lecture, Exercises, Lab Demonstration	In-Lab Project Part A
11	2	2	B2, B3, C1, C3, D1, D3	Using CSS3: <ul style="list-style-type: none"> Linking External Style Sheets Positioning Elements: Absolute Positioning, z-index Backgrounds 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
12	2	2	B2, B3, C1, C3, D1, D3	Using CSS3: <ul style="list-style-type: none"> Box Model and Text Flow Media Types and Media Queries Drop-Down Menus 	Lecture, Exercises, Lab Demonstration	In-Lab Project Part B

13	2	2	A1, B3	Using CSS3: <ul style="list-style-type: none"> • Text Shadows • Rounded Corners • Color • Box Shadows 	Lecture, Exercises, Lab Demonstration	Quiz 2
14	2	2	B2, B3, C1, C3, D1, D3	Using CSS3: <ul style="list-style-type: none"> • Linear Gradients; Introducing Vendor Prefixes • Reflections • Image Borders 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
15	2	2	B2, B3, C1, C3, D1, D3	Using CSS3: <ul style="list-style-type: none"> • Animation; Selectors • Transitions and Transformations • Transition and transform Properties • Skew • Transitioning Between Images 	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
16			A1, B2, B3, C1, C3, D1, D3	All Topics and Final Programming Project presentations to be given by students.	Discussion, Tutorial	In-Lab Project Part C Final Exam

Teaching Materials:

Textbook(s):	Ranjan Parekh, (2017), Principles of Multimedia 2 nd Edition, McGraw Hill.
Handout(s):	Available on http://www.ahlia.edu.bh/moodle .
Reference(s):	<ol style="list-style-type: none"> 1. Tay Vaughan, (2017), Multimedia: Making It Work, Ninth Edition, McGraw Hill. 2. Prabhat K. Andleigh, Kiran Thakrar, (2015), Multimedia Systems Design, Pearson. 3. Ramesh Bangia, and Laxmi Publications, (2015), Introduction to Multimedia. 4. Z-N. Li, M.S. Drew, and J. Liu, (2014), Fundamentals of Multimedia, 2nd Edition, Springer.

Assessments:

Type of Assessment	Description	ILOs	Weighting
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
In-Lab Exercises	Lab exercises cover problem solving questions and help students in mastering the topics.	B2, B3	Formative
In-Lab Project	The lab project consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. The lab project assesses the students' skills in developing and designing websites. In addition, each student will present his website.	B2, B3, C1, C3, D1, D3	25%
Quizzes	The test will be an in-class 20 minutes quiz that will consist of short-answer and problem solving questions. Also, it covers the topics as shown in the above weekly structure.	A1, B3	10%
Lab Test	The test will be for two hours and used to assess students in the implementation of topics studied in the first 9 weeks.	B2, B3, C1, C3, D3	25%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B2, B3, C1, C3	40%
Overall			100%

Admissions

Minimum number of students	5
Maximum number of students	20

Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.ahlia.edu.bh/integrity for more information).



College of Information Technology
Department of Multimedia Science
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 302: Human Computer Interaction (HCI)

Weight: (2 - 2 - 3)

Prerequisite: ITCS 222

NQF Level Allocated: Level 7

NQF Notional Hours/ Credits: 120 notional hours/ 12 NQF credit

Description: The course is intended to introduce the concepts of human-computer interaction (HCI), a discipline concerned with the design, evaluation, and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them. It will cover theories of human psychology, human information processing, user interface design principles, information presentation, and issues involved in using technologies for different purposes.

Objective:

- ✓ To understand the advanced theories, tools and techniques in HCI.
- ✓ Differentiate between a good or bad design.
- ✓ To implement the basics of interaction design and design rules.
- ✓ To gather and understand user requirements.
- ✓ To apply appropriate HCI techniques to design systems that are usable by different users.
- ✓ To provide students with the knowledge and skills needed to create highly usable software systems.

Semester:

Instructor (s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate advanced understanding of essential facts, concepts, principles, and theories relating to the human computer interaction.	Knowledge: theoretical understanding [Level 7]
A2	Contemporary Trends, Problems and Research:	
A3	Professional Responsibility:	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Solve real life problems using efficient interactive systems design.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design and evaluate user interface of low and medium complexity.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Implement graphical user interfaces with modern software tools.	Knowledge: Practical Application [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically evaluate and analyze the system design and user interfaces	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: Demonstrate creativity to produce a high quality interactive HCI system design from its basic components.	Knowledge: Practical Application [Level 7]
C3	Creative Thinking and innovation:	

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
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D1	Communication: Show ability to describe an interactive system design appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership:	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context[Level 6]
D4	Ethics and Social Responsibility:	

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Introduction to usability of Interactive Systems	Lecture	-
2-3	4	4	A1, D1	Guidelines, Principles, and Theories	Lecture	Oral Inquiry
4-5	4	4	A1,B1,C1, D3	Evaluating Interface Designs	Lecture/ Lab Demonstration / Supervised Work	Assignment 1
6	2	2	A1, B1,C1, C2,D1	Direct Manipulation and Virtual Environments	Lecture/ Lab Demonstration / Supervised Work	Oral Inquiry
7-8	4	4	A1, B1,B2, B3,C1, C2, D1,D3	Menu Selection, Form Fill- in, and Dialog Boxes	Lecture/ Presentation Of Projects By Students	Project 1

9	2	2	A1,B1, B2, B3,C1, C2	Command and Natural Languages	Lecture/ Lab Demonstration / Supervised Work	Test
10	2	2	A1, B2,D1	Collaboration and Social Media Participation	Lecture/ Lab Demonstration / Supervised Work	Oral Inquiry
11- 12	4	4	B1,B2, B3, D3	Design Issues	Lecture/ Lab Demonstration / Supervised Work	Assignment 2
13	2	2	A1, B2,B3, C1, C2,D1	Balancing Function and Fashion	Lecture/ Lab Demonstration / Supervised Work	Oral Inquiry
14	2	2	A1, B1,B2, B3,C1, C2,	Information Search	Lecture/ Presentation of Projects By Students	Project 2
15	2	2	A1,C1, C2,D1	Information Visualization	Lecture/ Lab Demonstration / Supervised	Oral Inquiry
16	2		A1,B1, C1,C2	All Topics		Final Exam

* **Formative assessment:** (Oral Inquiry) Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions. Feedback will be given to students to reaffirm their learning outcomes.

Teaching Materials:

Textbook(s):	1. Rogers, Sharp, and Preece "Interaction Design: Beyond Human Computer Interaction", Preece, John Wiley & Sons, 4 th , 2015. 2. Ben Shneiderman and Catherine Plaisant, Designing the User Interface, 5 th Edition. Addison Wesley, 2010.
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle .
Reference(s):	1. Prophets Agency, "Trends in Interactive Design 2013", on Jan 28, 2013, http://www.slideshare.net/ProphetsAgency/trends-in-interactive-design-2013 .

2. Rogers, Sharp, and Preece "Interaction Design: Beyond Human Computer Interaction", Preece, John Wiley & Sons, 3rd, 2011.

Assessment

Method of Assessment	Description	Learning Outcomes	Weighting
Assignment 1	The assignment consists of some short-answer and essay questions on object oriented concepts and theories covered in class up to week 3. Soft copy submission is required by the end of the 4 th week through the course page in Moodle where answers will be checked by Turnitin against plagiarism.	A1, B1, C1, D3	10%
Assignment 2	The assignment consists of some short-answer and essay questions on object-oriented concepts and theories covered in class up to week 11, the student are required to design a conceptual design using appropriate software. Soft copy submission is required by the end of the 12 th week through the course page in Moodle where answers will be checked by Turnitin against plagiarism.	B1, B2, B3, D3	10%
Project 1	Students will be asked (individually) to use all the steps in the HCI development methodology, you need to also practice how to make informed design decisions by applying knowledge about humans, and the design principles and guidelines. In addition, the project will also provide an opportunity for enhancing communication and collaboration skills, and time management skills.	B1, B2, B3, C1, C2, D1, D3	5%
Project 2	Students will be asked (individually) to use a structured and disciplined approach to develop a human-centered interactive system from scratch. Each student starts by choosing a topic/system to do, followed by HCI analysis and design including evaluations, and ends with delivering a prototype. The developed system and associated issues will be presented.	B1, B2, B3, C1, C2, D1, D3	5%
Test (Written)	The written test will be an in-class 1-hour test that will consists of MCQs, short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1, B1, B2, B3, C1, C2	30%

Final Exam	The final exam is comprehensive and will be of two hours duration. It will consist of MCQs, short-answer, essay and problem-solving questions in interactive systems concepts and theories. Students will be asked also to design a conceptual design using the appropriate methods and techniques and to define and model precisely the required objects and highlight their components and relationships.	A1, B1, C1, C2	40%
Overall:			100 %

Admissions	
Pre-requisites	ITCS 222
Minimum number of students	8
Maximum number of students	25



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title:	ITMS 307 – Multimedia Software I
Weight:	(2 - 2 - 3)
Prerequisite:	ITMS 205
NQF Level Allocated:	Level 7
NQF Notional Hours / Credits:	120 notional hours / 12 NQF credit

Description: This course is to cover the concepts and technologies as two dimensional: one dimension introduces the students to the essential practical packages such as the world of digital video, video-capture card, a quick tour of Premiere, Premiere editing video and transitions, a quick tour of Photoshop, adjusting color in images, automatically fixing colors, working with text. The other dimension illustrates the multimedia project management process theoretically.

Objective:

1. To critically understand the concepts of multimedia project management.
2. To cover both theoretical and practical issues of an image processing tool.
3. To cover both theoretical and practical issues of a video processing tool.
4. To develop advanced skills for developing movies utilizing specialized multimedia tools.

Semester:

Instructor(s):

Office Telephone: Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate critical knowledge and understanding of multimedia, essential practical packages, design concepts, video-capture card, a quick tour of Premiere, a quick tour of Photoshop, and adjusting color in images.	Knowledge: theoretical understanding [Level 7]
A2	Contemporary Trends, Problems and Research: NA	
A3	Professional Responsibility: NA	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Describe the problems related to design images, image processing, design video, and video processing and solve them by efficient image processing tool or video processing tool.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design, implements, and evaluates an images and video.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Apply appropriate methods, techniques, and tools used in modern Multimedia practical packages.	Knowledge: Practical Application [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically analyze a problem and choose the appropriate methods in multimedia tools to solve this problem.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: NA	
C3	Creative Thinking and innovation: Demonstrate creativity in relation to the development of new design ideas using multimedia tools.	Knowledge: Practical Application [Level 7]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Show the ability to express and communicate ideas effectively, in written and oral form.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership: NA	
D3	Organizational and Developmental Skills: NA	Competence: Autonomy, Responsibility and Context [Level 6]
D4	Ethics and Social Responsibility: NA	

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Introduction The world of digital video	Lecture	Oral Participation
2	2	2	A1, C1	Video-capture card	Lecture	Oral Participation
3	2	2	B1,B2,B3	A quick tour of Premiere	Lecture/ group discussion/ In Lab exercise	Oral Participation
4	2	2	B2,B3,C1, C3	Premiere Editing Video and Transitions	Lecture/ group discussion / In Lab exercise	Oral Participation
5	2	2	B2,B3,C1, D1	Editing Video and Transitions	Lecture/ group discussion / In Lab exercise	Oral Participation
6	2	2	A1,B1,B2, B3	Titles and Credits and Creating a DVD	Lecture	Quiz 1/ Lab Project 1
7-8	4	4	A1	Introduction A Quick Tour of Photoshop	Lecture	Oral Participation
9-10	4	4	B1,B2,B3, C1,D1	Adjusting Color in Images Automatically fixing colors	Lecture	Oral Participation/ Test
11	2	2	B2,B3	Fixing Exposure Problems	Lecture/ group discussion /In Lab exercise	Oral Participation
12	2	2	B2,B3,C1, D1	Adjusting brightness and contrast	Lecture / In Lab exercise	Oral Participation
13	2	2	B1,B2,B3, C1	Repairing and Retouching Images	Lecture/ group discussion	Quiz 2/ Lab Project 2

14	2	2	B2,B3,C1	Using the Healing brush tool, Working with Text, Editing a text layer	Lecture/ group discussion / In Lab exercise	Oral Participation
15	2	2	B1,B2,B3, C1, C3,D1	Using the Healing brush tool, Working with Text, Editing a text layer, Revision	Lecture/ group discussion	Oral Participation/ Final Project
16	1	1	A1,B1,B2, B3,C1, C3	All Topics	Final Exam	16

* Formative assessment

Teaching Materials:

Textbook(s):	1. Maxim Jago, Adobe Premiere Pro CC Classroom in a book, Adobe Press, 2016, ISBN: 978-0-13-430998-9 2. Andrew Faulkner, Conrad Chavez, Adobe Photoshop CC Classroom in a book, Adobe Press, 2016, ISBN: 978-0-13-430813-5
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s):	1. Adobe Premiere Pro CC, Classroom in book, Adobe Press, 2014. 2. Adobe Creative team, Adobe Premiere Pro CS6, Classroom in a book, Adobe Press, 2012. 3. Adobe Creative team, Adobe Photoshop CS6, Classroom in book, Adobe Press, 2012. 4. Adobe Premiere Pro CS4, Classroom in book, Adobe Press, 2009. 5. Adobe Systems, "Adobe Photoshop Elements 4.0, Adobe Premiere 2.0, Classroom in a book", Adobe Press, 2006. 6. Adobe Photoshop Element 4.0, Adobe, 2006.

Assessment

Method of Assessment	Description	Learning Outcomes	Weighting
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions. Feedback will be given to students to reaffirm their learning outcomes.	A1, D1	Formative
Lab Project 1	Students will be asked (individually) to use and apply Adobe Premiere tools to videos and process video to enhance videos or develop new images. The output of the project should be submitted electronically by the end of week 6 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B3, C1, D1	5%
Lab Project 2	Students will be asked (individually) to use and apply Adobe Photoshop tools to analyze and process image to enhance images or develop new images. The output of the project should be submitted electronically by the end of week 13 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2, D1	5%
Quizzes (Average of two quizzes)	The quiz will consist of MCQs, short-answer, essay, problem solving questions, and practical questions. The duration of the quiz is 20 minutes and will be taken in Lab. The purpose of the quiz is to assess the students' knowledge and understanding of key concepts, principles theories and practical of Adobe Premiere and Photoshop.	A1,B1,B2, D1	10%
Test (Written and Practical)	The test will be an in-class 1hour 20 minutes exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied from week 1 to 11.	A1, B1, B2, B3, C1	30%
Final Project (Report and Presentation)	Students will be asked (individually) to use and apply Adobe Premiere tools and Adobe Photoshop tools to analyze, design, and develop a new complete project includes titles, images, and videos. The output of the project should be submitted electronically by the end of week 15 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2, B3, C1, C3, D1	10%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions.	A1, B1, B2, B3, C1, C3	40%
Overall:			100 %

Admissions	
Pre-requisites	ITMS 205
Minimum number of students	8
Maximum number of students	20



الجامعة الأهلية
AHLIA UNIVERSITY
BAHRAIN

COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 313 – Game Development I
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITCS 221 and ITCS209
NQF Level Allocated: 7
NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course introduces the principles and essential concepts of game development. The course explores game-related concerns such as the game loop, rules, and game object design and implementation. During the course, students will be introduced to modern game platforms, and the effect of their differences, evolution, and limitations, on game programming. Through this course, the student will be able to develop 2D games through the gained tools and techniques. Students will experience the complete game development lifecycle and implementation using a high-level game development framework to design and develop a computer game.

- OBJECTIVES:**
1. To design the architecture and infrastructure needed to support a complete game project.
 2. To design the purposeful 2D game and engaging user experiences.
 3. To write clear and efficient code in the programming languages relevant to professional game development, following appropriate coding standards and industry practices.
 4. To build systems that employ common approaches to game AI, game physics, game networking, game graphics (2-D), operating systems and file formats.
 5. To implement effective design, production and testing techniques (including appropriate project engineering and management) through all phases of game development.
 6. Explore the rapidly expanding games industry from various perspectives.

SEMESTER:
INSTRUCTOR:
OFFICE TEL:
EMAIL:

ACADEMIC YEAR:

INTENDED LEARNING OUTCOMES (ILOS)

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories</u> : <i>Demonstrate advanced knowledge</i> of essential concepts and principles related to Game theory and Game Genre.	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research</u> : NA	
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : <i>Use advanced game skills</i> to prepare game stories and scenarios.	<u>Knowledge: Practical Application</u> [Level 7]
B2	<u>Modeling and Design</u> : Undertake research to design game using an integrated development environment (IDE).	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools</u> : <i>Apply advanced level skills of gaming techniques</i> to create and destroy game objects	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : <i>Critically evaluate</i> 2D games techniques to develop effective and efficient games.	<u>Generic Problem Solving & Analytical skills</u> [Level 7]
C2	<u>Synthetic</u> : NA	
C3	<u>Creative</u> : <i>Formulate solutions that are evidence-based</i> in designing 2D games.	<u>Generic Problem Solving & Analytical skills</u> [Level 7]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/Level
D1	<u>Communication</u> : <i>Use advanced skills to communicate</i> ideas in oral and written form.	<u>Communication, ICT and Numeracy Skills</u> [Level 7]
D2	<u>Teamwork and Leadership</u> : NA	
D3	<u>Organizational and Developmental Skills</u> : <i>Operate at an advanced level and organize ideas effectively within the allocate time in given assignment or project.</i>	<u>Competence: Autonomy, Responsibility and Context</u> [Level 7]

D4	<u>Ethical and Social Responsibility: NA</u>	

Course Structures (Outline)						
Week	Lec	Lab	ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
1	2	2	A1	Syllabus, Introduction Lab Demonstration	Lecture/ Lab Demonstration	
2	2	2	A1, B1, B3, D1	Thinking like a designer: - You are a game designer - Definition of a Game - History of Games Lab: - Introduction to Scratch Lab	Lecture/ In- Lab Supervised Work/ Class Discussion	Oral Participation* / In-Lab Exercises
3	2	2	A1	Game Analysis Frameworks - Common Frameworks for Ludology - MDA – Mechanics, Dynamics and Aesthetics - Formal, Dramatic and Dynamic Elements Lab: - Scratch Lab Game Elements	Lecture/ Lab Demonstration / In-Lab Supervised Work	Oral Participation* / Quiz 1
4	2	2	A1, B1, B3	The Layer Tetrad: - The Inscribed Layer - The Dynamic Layer - The Cultural Layer - Responsibility of the Designer Lab: - Introduction to Unity Game Engine	Lecture/ In- Lab Supervised Work	Oral Participation* / In-Lab Exercises
5	2	2	A1, B1, B3	Puzzle Design: - Puzzles are almost everywhere - Scott Kim on Puzzle Design Lab: - Setting up Unity Layout - Puzzle game example	Lecture/ In- Lab Supervised Work	Oral Participation* / In-Lab Exercises

6	2	2	A1,B1, B3, D1	Digital Game Industry: <ul style="list-style-type: none"> - About the game industry - Game Education - Getting into the Industry - Don't wait to start making games Lab: <ul style="list-style-type: none"> - Digital game example 	Lecture/ In-Lab Supervised Work	Oral Participation* / In-Lab Exercises
7	2	2	A1, D1	Introducing Development Environment - Unity: <ul style="list-style-type: none"> - Introducing development environment - Running Unity - Learning Your way Around Unity Lab: <ul style="list-style-type: none"> - Unity Environment 	Lecture/ In-Lab Supervised Work	Oral Participation* / Quiz 2
8	2	2	A1, B1,B2, B2, D3	Introducing Language : C# <ul style="list-style-type: none"> - Understanding the features of C# - Reading and understanding C# - Creating a new project - Making a new C# Script - Variables - Unity Variable types - Unity Game objects and components Lab: <ul style="list-style-type: none"> - Basic C# Program 	Lecture/ In-Lab Supervised Work	In-Lab Exercises / In-Class Exercises* / Assignment
9	2	2	A1, B1,B3, D1	Boolean Operations and Conditionals <ul style="list-style-type: none"> - Booleans - Comparison operators - Conditional Statements Lab: <ul style="list-style-type: none"> - Simple Programs using C# 	Lecture/ In-Lab Supervised Work	Oral Participation* / In-Lab Exercises
10-11	4	4	A1, B1, B2, C1, C3	Loops <ul style="list-style-type: none"> - Introduction to Gaming Loops - Types of Loops - Jump statements within loops Lab: <ul style="list-style-type: none"> - Game designing loops 	Lecture/ In-Lab Supervised Work	In-Lab Exercises / In-Class Exercises* / Major Test (week10)

12-13	4	4	A1, B1,B2, B2, D3	Lists and arrays <ul style="list-style-type: none"> - C# Collections - List - Arrays - Multidimensional arrays - Jagged Arrays - Whether to choose array or list - Lab : Summary exercise for list and collections	Lecture/ In-Lab Supervised Work	In-Lab Exercises/ Assignment 2 / Quiz 3 (week13)
14-15	4	4	A1,B1, B2, B3, C1, C3, D1, D3	Debugging <ul style="list-style-type: none"> - Getting started with Debugging - Stepping through code with Unity engine - Summary of Unity C# coding techniques Lab: Debugging Unity C# Coding techniques	Lecture/ In-Lab Supervised Work	In-Class Exercises*/ Evaluation of Project Presentation and Report
16	2		A1,B1,B2, C1,C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	Introduction to Game Design, Prototyping and Development From Concept to Playable with Unity and C#, Jeremy Gibson Bond, Addison Wesley. 2 nd ed., ISBN-13: 978-0134659862, 2018
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	Learning C# by Developing games with Unity 5.x, Greg Lukosek, Packt Publishing, 2 nd Edition, ISBN 978-1-78528-759-6, 2016 Mastering Unity 2D Game Development Second Edition, Ashley Godbold, Simon Jackson, Packt Publishing , 2 nd Edition, ISBN - 978-1786463456, 2016

ASSESSMENTS:

Type of Assessment	Description	ILOs	Weighting
Oral Participation	The learners will be assessed in oral participation against their understanding the knowledge, this assessment is formative to support the learners progression throughout the course	A1, D1	Formative
Quizzes	Three written quizzes to be conducted with different question types like: MC, and short- answer. Each quiz is for 30 minutes. The average of best two quizzes will be considered.	A1	5%
Assignments	Assignment to be given to students, worth five marks. The assignment will assess students' skills in modeling, designing a 2D game.	B1, B2, D3	5%
Project	Project consisting of several phases in which the student should model, design, and implement a 2D game for a scenario or story his/ her choice.	B1, B2, B3, C1, C3, D1, D3	20%
Major Test	The major test is a written, in-class 90 minutes test. It will cover topics studied in the first 9 weeks. The test will include several types of questions such as: short- answer, and design and modeling.	A1, B1, B2, C1, C3	20%
Final Exam	The final exam is a comprehensive, written exam and will be of two hours. It will consist of design and modeling, short-answer and essay questions.	A1, B1, B2, C1, , C3	40%
In-Lab Exercises	To assess students skills in using lab exercises and evaluating the skills based on design skills exhibited.	B1, B3	10%
In-Class Exercises	Exercises cover design, modeling and normalization of a database.	B2, C1	Formative

14. Admissions

Pre-requisites	ITCS 201
Minimum number of students	6
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 325 – Web Applications Design

Weight: (2-2-3)

Prerequisite: ITMS 205

NQF Level Allocated: 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

Description: This course introduces students to the basic concepts and terminology of dynamic web sites. Students will have a better understanding of the different disciplines that collectively make up dynamic web sites: client side scripting (JavaScript) and server side scripting (PHP)

Objective:

1. To understand the basic concepts and terminology of dynamic web sites
2. To acquire the foundation of client side scripting (JavaScript) and server side scripting (PHP).
3. To gain the different techniques of designing and developing entire dynamic websites (client and server side scripting)
4. To create entire dynamic websites.

Semester:

Instructor (s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate advanced understanding of concepts, and specialized theories relating to dynamic websites.	Knowledge: theoretical understanding [Level 7]
A2	Contemporary Trends, Problems and Research: NA	
A3	Professional Responsibility: NA	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Identify real life problems and solve them by designing efficient and effective dynamic websites.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design the architecture of dynamic websites by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Apply appropriate tools such as JavaScript, Apache, PHP and MySQL for creating dynamic web sites.	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Analyze source code in various scripts and remediate any bug found.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: NA	

C3	Creative Thinking and innovation: Demonstrate creativity in designing dynamic websites.	Knowledge: Practical Application [Level 7]
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D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]
D2	Teamwork and Leadership: NA	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 6]
D4	Ethics and Social Responsibility: NA	

Course Structure (Outline)

Course Structure (Outline)						
Wee k	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Introduction	Lecture	-
2	2	2	A1, B3	Introduction to JavaScript and the Web	Lecture/ lab Demonstration	In-Lab Exercise
3	2	2	A1, B3	Data Types and Variables	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1, B2, B3, C1, C3	Decisions, Loops, and Functions	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1,B1, B2, B3, C1, C3, D1	HTML Forms	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry/ Assignment
6	-	4	A1, B1, B2, B3, C1, C3	Handling Forms with JavaScript	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

7	2	2	A1,B1, B2, B3, C1, C3, D1	Using JavaScript with DOM	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry/ Assignment
8	2	2	A1, B3	Introduction to PHP	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1,B1, B2, B3, C1, C3, D1	PHP Installation	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry/ In-Lab Exercise
10	2	2	A1,B1,B2,C1	PHP Basics and Types	Lecture/ Lab Demonstration/	Test
11	2	2	A1,B1, B2, B3, C1, C3, D1	PHP: Variables and Operators and	Lecture/ Lab Demonstration/	Assignment
12	2	2	A1,B1, B2, B3, C1, C3	PHP: Functions and Arrays	Lecture/ Lab Demonstration/	In-Lab Exercise
13	2	2	A1,B1, B2, B3, C1, C3	PHP: Database Connections	Lecture/ Lab Demonstration/	In-Lab Exercise
14	2	2	A1,B1, B2, B3, C1, C3	Administrating MySQL	Lecture/ Lab Demonstration/	In-Lab Exercise
15	2	2	A1,B1,B2,B3, C1,C3,D1, D3	Students Presentations And Reports Of Research Projects	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16			A1, B1, C1, C3	All Topics		Final Exam

* Formative assessment

Teaching Materials:

Textbook(s):	Joel Murach and Ray Harris (2017), <i>Murach's PHP and MySQL Websites</i> , Mike Murach & Associates; 3rd Enhanced edition, ISBN: 978-1943872381
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle .
Reference(s):	1- Branko Ajzele, "Mastering PHP 7: Design, Configure, Build and Test Professional Web Applications", Packt Publishing, ISBN: 978-1785882814

	<p>2- Robin Nixon (2014), <i>Learning PHP, MySQL, JavaScript, CSS & HTML5: A Step-by- Step Guide to Creating Dynamic Websites</i>, O'Reilly Media, ISBN: 978-1-4919-4946-7</p> <p>3- Er. Rajiv Chopra1 and Dr. Sushila Madan, "A Practical T-P3R2 Model to Test Dynamic Websites", <i>Journal of Information Engineering and Applications</i>, ISSN 2224-5782 (print) ISSN 2225-0506 (online) Vol 2, No.6, pages 44-47, 2012</p>
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Assessment

Method of Assessment	Description	Learning Outcomes	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in dynamic websites. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and advanced understanding of key concepts of dynamic websites using appropriate software.	A1,B1,B2, B3, C1,C3,D1	10%
Test	The test will be an in-class 1-hour exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2, C1	25%
	Each of the four practical exercises consists of a set of		

In-Lab Exercises	practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of dynamic websites. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	10%
Project Report And Presentation	Starting from weak 4, each student will be asked to develop a small dynamic website project using appropriate software.	B1,B2,B3, C1, C3, D1, D3	15%
Final Exam	The final exam is comprehensive, and will be of two hours duration. It will consist of short-answer, essay and problem- solving questions to be done on computers.	A1, B1, C1,C3	40%
Overall:			100 %

Admissions	
Pre-requisites	ITMS 205
Minimum number of students	8
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 335: Web Programming I
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITMS205

NQF Level Allocated: 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course provides students with the knowledge and skills needed to understand, Core Programming, Object-Oriented Programming, General Software Development, Web Applications, Desktop Applications, Databases, Build the User Interface by Using HTML5, and Format the User Interface by Using CSS, Code by Using JavaScript.

OBJECTIVES:

1. Understand Core Programming, Object-Oriented Programming & General Software Development
2. Understand Web Applications, Desktop Applications & Databases
3. Manage the Application Life Cycle
4. Build the User Interface by Using HTML5
5. Format the User Interface by Using CSS
6. To gain the different techniques of designing and developing entire dynamic websites (JavaScript).

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOs)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories</u> : Demonstrate advanced understanding of concepts, and specialized theories relating to desktop Applications & Databases.	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research</u> : NA	
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Use advanced level skills to identify real life problems	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design</u> : Undertake research to design the architecture of Application by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools</u> : Apply advanced and appropriate tools for creating dynamic web sites.	Knowledge: Practical Application [Level 7]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically evaluate case studies and recommend suitable solutions Applications.	Generic Problem Solving & Analytical skills [Level 7]
C3	<u>Creative Thinking and innovation</u> : Demonstrate creativity in designing dynamic websites and Desktop Applications & Databases.	Generic Problem Solving & Analytical skills [Level 7]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/Level
D1	<u>Communication</u> : Use advanced skills to communicate technical information in appropriate oral and written forms to a variety of audiences.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership</u> : NA	
D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 8]
D4	<u>Ethical and Social Responsibility</u> : NA	

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Introduction to Object-Oriented Programming	Lecture	-
2	2	2	A1, D1	Understanding General Software Development	Lecture/ lab Demonstration	Oral Inquiry * In-Lab Exercise
3	2	2	A1, B1,B2, B3,C1,C3	Understanding Web Applications	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1,B2, B3,C1,C3	Understanding Desktop Applications	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1, B1,B2, B3,C1,C3, D1	Understanding Databases	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry* In-Lab Exercise
6	2	2	A1,B1,B2,B3, C1,C3	Managing the Application Life Cycle	Lab Demonstration/ Supervised Work	Quiz 1
7	2	2	A1, B2,B3,C2, D1	Building the User Interface by Using HTML5: Text, Graphics, and Media	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
8	2	2	B1,B2, B3,C1,C3	Building the User Interface by Using HTML5: Organization, Input, and Validation	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	B1,B2, B3,C1,C3	Understanding CSS Essentials: Content Flow, Positioning, and Styling	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1,B2,C1	Major Test	Lecture/ Lab Demonstration/	Major Test

					Supervised Work	
11	2	2	A1, B2,B3,D1	Understanding CSS Essentials: Layouts	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
12	2	2	A1,B1,B2,B3, C1,C3	Managing Text Flow by Using CSS	Lecture/ Lab Demonstration/ Supervised Work	Quiz 2
13	2	2	B1,B2, B3,C1,C3	Managing the Graphical Interface by Using CSS	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	B1,B2, B3,C1,C3	Understanding JavaScript and Coding Essentials	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	B1,B2,B3,C1,C3, D1,D3	Creating Animations, Working with Graphics, and Accessing Data	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16	2	2	A1, B1,B2, B3, C1,C3	JavaScript Coding for the Touch Interface, Device and Operating System resources, and More		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	<ul style="list-style-type: none"> Software Development Fundamentals, Microsoft Official Academic Course, 2013, ISBN: 978-1-118-02687-8 HTML5 Application Development Fundamentals, Microsoft Official Academic Course, 2013, ISBN: 978-1118359938
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle

REFERENCE(S):	<p>David Paquette, Simon Timms, "ASP.NET Core Application Development: Building an application in four sprints (Developer Reference) 1st Edition", 2016, Microsoft Press, ISBN: 978-1509304066</p> <p>Mithun Pattankar, Malendra Hurbuns, "Mastering ASP.NET Web API: Build powerful HTTP services and make the most of the ASP.NET Core Web API platform", 2017, Packt Publishing, ISBN: 978-1786463951</p>
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ASSESSMENTS:

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Quizzes	The quizzes consist of essay, problem-solving and research based theoretical questions regarding topics in Dot NET. The purpose of the quizzes is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of Dot NET.	A1,B1,B2,B3 , C1,C3	20%
Major Test	The test will be an in-class 60 minute exam that will consist of short-answer, essay, and create web or windows application and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each practical exercise consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of programming application. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	5%

Project Report And Presentation	Starting from week 6, each student will be asked to develop a small Application project.	B1,B2,B3,C1 ,C3, D1,D3	10%
Final Exam	The final exam is comprehensive and practical, and will be of 120 minute duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

14. Admissions	
Pre-requisites	ITMS205
Minimum number of students	8
Maximum number of students	20



الجامعة الأهلية
AHLIA UNIVERSITY
BAHRAIN

COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 336: Web Programming II
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITMS 335

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course provides an introduction to HTML5, CSS3, and JavaScript. This course helps students gain basic HTML5/CSS3/JavaScript programming skills. This course is an entry point into both the Web application and Windows Store apps training paths. The course focuses on using HTML5/CSS3/JavaScript to implement programming logic, define and use variables, perform looping and branching, develop user interfaces, capture and validate user input, store data, and create well-structured application.

OBJECTIVES:

1. Describe the new features of HTML5, and create and style HTML5 pages.
2. Create HTML5 forms by using different input types, and validate user input by using HTML5 attributes and JavaScript code
3. Send and receive data to and from a remote data source by using XMLHttpRequest objects and jQuery AJAX operations.
4. Use common HTML5 APIs in interactive and advanced Web applications.
5. Create advanced Web applications that support offline operations.
6. Create advanced HTML5 Web pages that can adapt to different devices and form factors

SEMESTER:
INSTRUCTOR:

ACADEMIC YEAR:

OFFICE TEL:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOS)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories:</u> Demonstrate advanced understanding of concepts, and specialized theories relating to .NET Framework, the .NET Platform and dynamic websites using client object.	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving:</u> Identify real life problems and Design the solution to a given problem. Gather, and organize material from various sources independently (including library, electronic and online resources), and critically evaluate its significance.	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design:</u> Design the architecture of specialized Application by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools:</u> Apply appropriate advanced tools such as Dot Net Framework, IIS, Html 5 and SQL Server for creating dynamic web sites.	Knowledge: Practical Application [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic:</u> Analyze case studies and recommend suitable solutions Applications.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative:</u> creative thinking, applying the concepts effectively to new situations.	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/Level
D1	<u>Communication</u> : Show ability to communicate technical information in appropriate oral and written forms to a variety of audiences.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership</u> : NA	
D3	<u>Organizational and Developmental Skills</u> : NA	
D4	<u>Ethical and Social Responsibility</u> : NA	

1. Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Overview of HTML and CSS & Creating and Styling HTML Pages	Lecture	-
2	2	2	A1, B1,B2, B3,C1,C3, D1	Introduction to the Document Object Model	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	A1, B1,B2, B3,C1,C3, D1	Introduction to jQuery	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
4	2	2	A1, B1,B2, B3,C1,C3, D1	Creating Forms to Collect and Validate User Input Using HTML5 Attributes and JavaScript	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1, B1,B2, B3,C1,C3, D1	Communicating with a Remote Server Using the XMLHttpRequest Object	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
6	2	2	A1, B1,B2, B3,C1,C3, D1	Sending and Receiving Data by Using the jQuery Library	Lab Demonstration/ Supervised Work	In-Lab Exercise

7	2	2	A1, B3, D1	Pseudo-classes and Pseudo-elements	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
8	2	2	A1, B1,B2, B3,C1,C3, D1	Creating Objects and Methods by Using JavaScript	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1, B1,B2, B3,C1,C3, D1	Creating Custom Objects	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1,B2,C1	Major Test	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1, B3, D1	Creating Interactive Pages by Using HTML5 APIs	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
12	2	2	A1, B1,B2, B3,C1,C3, D1	Reacting to Browser Location and Content	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
13	2	2	A1, B1,B2, B3,C1,C3, D1	Caching Offline Data by Using the Application Cache API	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1, B1,B2, B3,C1,C3, D1	Programmatically Drawing Graphics by Using the Canvas API	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	A1, B1,B2,B3,C1,C3 , D1	Understanding Web Workers	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16	2	2	A1, B1,B2, B3, C1,C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	<ul style="list-style-type: none"> Course 20480: Programming in HTML5 with JavaScript and CSS3, Microsoft Press Training Guide, 2013, ISBN: 978-0735674387
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	<p>Dino Esposito, "Modern Web Development: Understanding domains, technologies, and user experience (Developer Reference)", Microsoft Press, 2016, ISBN: 978-1509300013</p> <p>Dino Esposito, "Programming Microsoft ASP.NET MVC (3rd Edition) (Developer Reference) 3rd Edition", Microsoft Press, 2014, ISBN: 978-0735680944</p>

ASSESSMENTS:

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Quizzes	The quizzes consist of essay, problem-solving and research based theoretical questions regarding topics in Dot NET and client object. The purpose of the quizzes is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of Dot NET, Html 5 and client object.	A1,B1,B2,B3, C1,C3	20%
Major Test	The test will be an in-class 90 minute exam that will consist of short-answer, essay, and create web or windows application and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each practical exercise consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the	B1,B2, B3,C1,C3,	5%

	student's skills in the field of programming application. Students work will be observed and evaluated directly during the lab sessions.	D1	
Project Report And Presentation	Starting from week 6, each student will be asked to develop a small Application project.	B1,B2,B3,C1,C3, D1	10%
Final Exam	The final exam is comprehensive and practical, and will be of 120 minute duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

14. Admissions	
Pre-requisites	ITMS 335
Minimum number of students	8
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 341 - Digital Marketing Technologies

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 325

NQF Level Allocated: Level 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: Through this course, the students will acquire the ability to develop website planning, development and Search Engine Optimization strategy. The course will help the participant execute Keyword search, understand the tools to find keywords (paid and free); and learn Google Adwords. During the course, students will actually plan Search Engine Optimization (SEO) of a website, set up the SEO process; learn about Content Marketing, on-page, and off-page optimization; the tools for Webmaster as well as Mobile SEO. In addition, during this course, the students will learn about the opportunities for targeted advertising in social media and how to execute advertising campaigns that resonate with the audience.

OBJECTIVES:

1. To identify and apply best practices in digital marketing.
2. To learn how to plan and apply strategy, data and business techniques to be successful in digital marketing.
3. To apply the practical knowledge, tools, and techniques involved with SEO.
4. To use various techniques to rank any webpage on Top of search engines; advance On-Page and Off-Page Optimization, Directory Submission, Keyword research, etc.
5. To create and maintain a positive online image and to effectively manage their company/product's reputation.

SEMESTER:
INSTRUCTOR:
OFFICE TEL.:
EMAIL:

ACADEMIC YEAR:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories:</u> Demonstrate <i>advanced knowledge and understanding</i> of concepts related to digital marketing	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving:</u> Use <i>advanced level of skills</i> to solve problem by adding digital marketing components.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design:</u> <i>Undertake research</i> to design the architecture of digital content management and strategies that satisfy market specifications.	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools:</u> Apply <i>advanced skills, techniques, and tools</i> to create and manage digital marketing projects.	Knowledge: Practical Application [Level 7]

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic:</u> <i>Critically evaluate existing</i> digital marketing problems and user requirements to explore the areas of enhancement.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic:</u> NA	
C3	<u>Creative:</u> <i>Demonstrate creativity</i> in implementing digital content projects.	Generic, Problem Solving and Analytical Skills [Level 7]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/ Level
D1	<u>Communication:</u> Use advanced level of skills to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]

D2	<u>Teamwork and Leadership:</u> NA	
D3	<u>Organizational and Developmental Skills:</u> Operate advanced level of responsibility to organize ideas and effectively allocate time.	Competence: Autonomy, Responsibility and Context [Level 7]

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Course Overview, Syllabus, Expectations, Technology. <ul style="list-style-type: none"> • Introduction of the digital marketing • Digital vs. Real Marketing • Digital Marketing Channels 	Lecture, Class Discussion,	-
2	2	2	A1, B3	<ul style="list-style-type: none"> • Creating initial digital marketing plan • Content management • SWOT analysis 	Lecture, Laboratory	Oral Participation
3	2	2	A1, B3	<ul style="list-style-type: none"> • Web design • Optimization of Web sites • MS Expression Web 	Lecture, Laboratory	Oral Participation
4	2	2	A1, B1, B2 B3, C1, D1	<ul style="list-style-type: none"> • SEO Optimization • Writing the SEO content 	Lecture, Laboratory	Lab Project 1
5	2	2	A1, B3	<ul style="list-style-type: none"> • Google AdWords- creating accounts • Google AdWords- types 	Lecture, Laboratory	Oral Participation
6	2	2	A1, B1, B3 D1, D3	<ul style="list-style-type: none"> • Introduction to CRM • CRM platform • CRM models 	Lecture, Laboratory	Assignment 1
7	2	2	A1, B3	<ul style="list-style-type: none"> • Introduction to Web analytics • Web analytics – levels • Introduction of Social Media Marketing 	Lecture, Exercises, Laboratory	Oral Participation
8	2	2	A1, B1, B2, B3, C1,	<ul style="list-style-type: none"> • Creating a Facebook page • Visual identity of a Facebook page • Types of publications 	Lecture, Laboratory	Major Exam

9	2	2	A1, B3	<ul style="list-style-type: none"> • Business opportunities and Instagram options • Optimization of Instagram profiles 	Lecture, Laboratory	Oral Participation
10	2	2	A1, B3	<ul style="list-style-type: none"> • Integrating Instagram with a Web Site and other social networks • Keeping up with posts 	Lecture, Laboratory	Oral Participation
11	2	2	A1, B1, B2 B3, C1, D1	<ul style="list-style-type: none"> • Business tools on LinkedIn • Creating campaigns on LinkedIn • Analyzing visitation on LinkedIn 	Lecture, Laboratory	Lab Project 2
12	2	2	A1, B1, B3 D1, D3	<ul style="list-style-type: none"> • Creating business accounts on YouTube • YouTube Advertising • YouTube Analytics 	Lecture, Laboratory	Assignment 2
13	2	2	A1, B3	<ul style="list-style-type: none"> • Facebook Ads • Creating Facebook Ads • Ads Visibility 	Lecture, Laboratory	Oral Participation
14	2	2	A1, B3	<ul style="list-style-type: none"> • E-mail marketing • E-mail marketing plan • E-mail marketing campaign analysis • Keeping up with conversions <p>Digital Marketing Budgeting:</p> <ul style="list-style-type: none"> • resource planning • cost estimating • cost budgeting • cost control 	Lecture, Laboratory	Oral Participation
15	2	2	B1, B2, B3, C1, D1, D3	Student Projects	Project Supervision	Evaluation of Project Presentations and Reports
16	2	2	A1, B2, B3, C1, C3	All Topics	Lessons learned and closing	Final Final Exam

TEACHING MATERIALS

TEXTBOOK(S): 1. Ryan, D. (2017). Understanding Digital Marketing: Marketing Strategies for Engaging

- the Digital Generation, Kogan Page Limited.
2. The Beginner's Guide to Digital Marketing (2015).

HANDOUT(S): Power point slides, <http://www.ahlia.edu.bh/moodle>.

- REFERENCE(S):**
1. Digital Marketer.Pulizzi,J.(2014) Epic Content Marketing, Mcgraw Hill Education.
 2. The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns, Ian Dodson (2016), Wiley; 1 edition.
 3. Digital Marketing For Dummies, Ryan Deiss (2017), For Dummies; 1 edition
 4. Introduction to Search Engine Marketing and AdWords: A Guide for Absolute Beginners, Todd Kelsey (2017), Apress; 1st ed. edition

ASSESSMENTS

Type of Assessment	Description	ILOs ³	Weighting
Lab Project 1	Students will be asked (individually) to creating Websites; Writing the SEO content; SEO Optimization; Google AdWords; CRM Platform. The output of the project should be submitted electronically by the end of week 8 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2 B3, C1, D1	5%
Lab Project 2	Students will be asked (individually) to creating Social Media Marketing Plan; Making a Facebook page; Budgeting; Final presentation. The output of the project should be submitted electronically by the end of week 13 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2 B3, C1, D1	5%
Assignments 1 & 2	Two assignments consist of some short-answer and essay questions on object oriented concepts and theories covered in class. Soft copy submission is required by the end of the 4th week and 11 th week through the course page in Moodle where answers will be checked by Turnitin against plagiarism. (Average will be taken.)	B1, D1, D3	15%
Major Exam (Written)	The written test will be an in-class 1:30 hour test that will consists of MCQs, short-answer, essay, and problem solving questions and cover the topics studied in the first 8 weeks.	A1, B1, B2, B3, C1	20%

Final Project (Report And Presentation)	Students will be asked (individually) to use a structured and disciplined approach to develop a digital marketing project. Each student starts by choosing a themes to do, followed by design, creation including evaluations, and ends with delivering a project. The developed system and associated issues will be presented.	B1, B2, B3, C1, D1, D3	15%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B2, B3, C1, C3	40%
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Overall			100%

13. Admissions	
Pre-requisites	ITMS 325
Minimum number of students	5
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 341 - Digital Marketing Technologies

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 325

NQF Level Allocated: Level 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: Through this course, the students will acquire the ability to develop website planning, development and Search Engine Optimization strategy. The course will help the participant execute Keyword search, understand the tools to find keywords (paid and free); and learn Google Adwords. During the course, students will actually plan Search Engine Optimization (SEO) of a website, set up the SEO process; learn about Content Marketing, on-page, and off-page optimization; the tools for Webmaster as well as Mobile SEO. In addition, during this course, the students will learn about the opportunities for targeted advertising in social media and how to execute advertising campaigns that resonate with the audience.

OBJECTIVES:

1. To identify and apply best practices in digital marketing.
2. To learn how to plan and apply strategy, data and business techniques to be successful in digital marketing.
3. To apply the practical knowledge, tools, and techniques involved with SEO.
4. To use various techniques to rank any webpage on Top of search engines; advance On-Page and Off-Page Optimization, Directory Submission, Keyword research, etc.
5. To create and maintain a positive online image and to effectively manage their company/product's reputation.

SEMESTER:
INSTRUCTOR:
OFFICE TEL.:
EMAIL:

ACADEMIC YEAR:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories:</u> Demonstrate <i>advanced knowledge and understanding</i> of concepts related to digital marketing	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving:</u> Use <i>advanced level of skills</i> to solve problem by adding digital marketing components.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design:</u> <i>Undertake research</i> to design the architecture of digital content management and strategies that satisfy market specifications.	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools:</u> Apply <i>advanced skills, techniques, and tools</i> to create and manage digital marketing projects.	Knowledge: Practical Application [Level 7]

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic:</u> <i>Critically evaluate existing</i> digital marketing problems and user requirements to explore the areas of enhancement.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic:</u> NA	
C3	<u>Creative:</u> <i>Demonstrate creativity</i> in implementing digital content projects.	Generic, Problem Solving and Analytical Skills [Level 7]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/ Level
D1	<u>Communication:</u> Use advanced level of skills to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]

D2	<u>Teamwork and Leadership:</u> NA	
D3	<u>Organizational and Developmental Skills:</u> Operate advanced level of responsibility to organize ideas and effectively allocate time.	Competence: Autonomy, Responsibility and Context [Level 7]

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Course Overview, Syllabus, Expectations, Technology. <ul style="list-style-type: none"> Introduction of the digital marketing Digital vs. Real Marketing Digital Marketing Channels 	Lecture, Class Discussion,	-
2	2	2	A1, B3	<ul style="list-style-type: none"> Creating initial digital marketing plan Content management SWOT analysis 	Lecture, Laboratory	Oral Participation
3	2	2	A1, B3	<ul style="list-style-type: none"> Web design Optimization of Web sites MS Expression Web 	Lecture, Laboratory	Oral Participation
4	2	2	A1, B1, B2 B3, C1, D1	<ul style="list-style-type: none"> SEO Optimization Writing the SEO content 	Lecture, Laboratory	Lab Project 1
5	2	2	A1, B3	<ul style="list-style-type: none"> Google AdWords- creating accounts Google AdWords- types 	Lecture, Laboratory	Oral Participation
6	2	2	A1, B1, B3 D1, D3	<ul style="list-style-type: none"> Introduction to CRM CRM platform CRM models 	Lecture, Laboratory	Assignment 1
7	2	2	A1, B3	<ul style="list-style-type: none"> Introduction to Web analytics Web analytics – levels Introduction of Social Media Marketing 	Lecture, Exercises, Laboratory	Oral Participation
8	2	2	A1, B1, B2, B3, C1,	<ul style="list-style-type: none"> Creating a Facebook page Visual identity of a Facebook page Types of publications 	Lecture, Laboratory	Major Exam

9	2	2	A1, B3	<ul style="list-style-type: none"> • Business opportunities and Instagram options • Optimization of Instagram profiles 	Lecture, Laboratory	Oral Participation
10	2	2	A1, B3	<ul style="list-style-type: none"> • Integrating Instagram with a Web Site and other social networks • Keeping up with posts 	Lecture, Laboratory	Oral Participation
11	2	2	A1, B1, B2 B3, C1, D1	<ul style="list-style-type: none"> • Business tools on LinkedIn • Creating campaigns on LinkedIn • Analyzing visitation on LinkedIn 	Lecture, Laboratory	Lab Project 2
12	2	2	A1, B1, B3 D1, D3	<ul style="list-style-type: none"> • Creating business accounts on YouTube • YouTube Advertising • YouTube Analytics 	Lecture, Laboratory	Assignment 2
13	2	2	A1, B3	<ul style="list-style-type: none"> • Facebook Ads • Creating Facebook Ads • Ads Visibility 	Lecture, Laboratory	Oral Participation
14	2	2	A1, B3	<ul style="list-style-type: none"> • E-mail marketing • E-mail marketing plan • E-mail marketing campaign analysis • Keeping up with conversions <p>Digital Marketing Budgeting:</p> <ul style="list-style-type: none"> • resource planning • cost estimating • cost budgeting • cost control 	Lecture, Laboratory	Oral Participation
15	2	2	B1, B2, B3, C1, D1, D3	Student Projects	Project Supervision	Evaluation of Project Presentations and Reports
16	2	2	A1, B2, B3, C1, C3	All Topics	Lessons learned and closing	Final Final Exam

TEACHING MATERIALS

TEXTBOOK(S): 1. Ryan, D. (2017). Understanding Digital Marketing: Marketing Strategies for Engaging

- the Digital Generation, Kogan Page Limited.
2. The Beginner's Guide to Digital Marketing (2015).

HANDOUT(S): Power point slides, <http://www.ahlia.edu.bh/moodle>.

- REFERENCE(S):**
1. Digital Marketer.Pulizzi,J.(2014) Epic Content Marketing, Mcgraw Hill Education.
 2. The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns, Ian Dodson (2016), Wiley; 1 edition.
 3. Digital Marketing For Dummies, Ryan Deiss (2017), For Dummies; 1 edition
 4. Introduction to Search Engine Marketing and AdWords: A Guide for Absolute Beginners, Todd Kelsey (2017), Apress; 1st ed. edition

ASSESSMENTS

Type of Assessment	Description	ILOs ³	Weighting
Lab Project 1	Students will be asked (individually) to creating Websites; Writing the SEO content; SEO Optimization; Google AdWords; CRM Platform. The output of the project should be submitted electronically by the end of week 8 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2 B3, C1, D1	5%
Lab Project 2	Students will be asked (individually) to creating Social Media Marketing Plan; Making a Facebook page; Budgeting; Final presentation. The output of the project should be submitted electronically by the end of week 13 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2 B3, C1, D1	5%
Assignments 1 & 2	Two assignments consist of some short-answer and essay questions on object oriented concepts and theories covered in class. Soft copy submission is required by the end of the 4th week and 11 th week through the course page in Moodle where answers will be checked by Turnitin against plagiarism. (Average will be taken.)	B1, D1, D3	15%
Major Exam (Written)	The written test will be an in-class 1:30 hour test that will consists of MCQs, short-answer, essay, and problem solving questions and cover the topics studied in the first 8 weeks.	A1, B1, B2, B3, C1	20%

Final Project (Report And Presentation)	Students will be asked (individually) to use a structured and disciplined approach to develop a digital marketing project. Each student starts by choosing a themes to do, followed by design, creation including evaluations, and ends with delivering a project. The developed system and associated issues will be presented.	B1, B2, B3, C1, D1, D3	15%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B2, B3, C1, C3	40%
Oral Participation	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Overall			100%

13. Admissions	
Pre-requisites	ITMS 325
Minimum number of students	5
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE**

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 347 – **Video Post-Production**

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 327

NQF Level Allocated: Level 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course introduces students to the basic concepts and terminology of video post-production as it is used in film and games. Students will have a better understanding of how stories are constructed in the editing room using various editing styles. Through demonstrations and hands-on experience, students will learn advanced editing techniques. To further enhance projects, students will create animated motion graphics using After Effects. Strong emphasis is placed on post-production techniques that improve the sound and image quality of the videos.

OBJECTIVES:

1. To understand the advanced concepts and terminology of video post-production as it is used in film, and games.
2. To acquire the techniques editors use to construct stories.
3. To gain the different advanced techniques of non-linear editing software.
4. To acquire the technique of professional style color correction.
5. To gain the advanced technique on how to create high quality motion graphics.

SEMESTER:
INSTRUCTOR:
OFFICE TEL.:
EMAIL:

ACADEMIC YEAR:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories:</u> Demonstrate advanced understanding of concepts, and specialized theories relating to video post-production.	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving:</u> Identify real life problems and solve them by designing efficient and effective video post-production films.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design:</u> Design the sketch of video post-production film by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools:</u> Apply multimedia software and tools such as video editing, audio processing, and vector based software that assists in the creation of video post-production film.	Knowledge: Practical Application [Level 7]

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic:</u> Critically analyze a video post-production film and remodel part/some/all objects found within the film.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic:</u> NA	
C3	<u>Creative:</u> Demonstrate creativity in designing the video post-production film.	Knowledge: Practical Application [Level 7]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/ Level
D1	<u>Communication</u> : Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 6]
D2	<u>Teamwork and Leadership</u> : NA	
D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 6]
D4	<u>Ethical and Social Responsibility</u> : NA	

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Introduction	Lecture	-
2	2	2	A1, B1, B2, B3, C1, C3	Video Editing Techniques	Lecture/ lab Demonstration	In-Lab Exercise
3	2	2	A1, B1, B2, B3, C1, C3	Principles of Continuity Editing	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1, B2, B3, C1, C3, D1	Parallel Editing	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
5	2	2	A1, B1, B2, B3, C1, C3, D3	Sound Design / Sound Mixing	Lecture/ Lab Demonstration/ Supervised Work	Assignment
6	-	4	A1, B1, B2, B3, C1, C3	Scene Breakdowns	Lab Demonstration/ Supervised Work	In-Lab Exercise
7	2	2	A1, B1, B2, B3, C1, C3, D3	Creating Effective Motion Graphics	Lecture/ Lab Demonstration/ Supervised Work	Assignment

8	-	4	A1, B1, B2, B3, C1, C3	Advanced Motion Graphics Techniques	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1,B1, B2, B3, C1, C3	Editing for Documentary	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1,B2,C1	Exploring Compositing Techniques	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1,B1,B2,B3, C1,C3,D3	Compositing in Motion 1	Lecture/ Lab Demonstration/ Supervised Work	Assignment
12	2	2	A1,B1, B2, B3, C1, C3, D1	Compositing in Motion 2	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
13	2	2	A1,B1, B2, B3, C1, C3	Compositing in Motion 3	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1,B1, B2, B3, C1, C3	DVD design and build	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	B1,B2,B3,C1,C3, D1,D3	Students Presentations And Reports Of Research Projects	Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16			A1, B1,B2, B3 C1, C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S): 1. Adobe Creative Team (2013), Adobe After Effects CC Classroom in a book, Adobe Press, ISBN: 978-0-321-92960-0

HANDOUT(S): Power point slides, <http://www.ahlia.edu.bh/moodle>.

- REFERENCE(S):** 1. Ciaran Wills (2002), "Video segmentation for post-production", Proc. SPIE 4676, Storage and Retrieval for Media Databases pp. 158

ASSESSMENTS

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in video post-production. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of video post-production.	A1,B1,B2,B3, C1,C3,D3	10%
Major Test	The test will be an in-class 1-hour exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each of the four practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of video post-production. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	10%
Project Report And Presentation	Starting from weak 4, each student will be asked to composite a short film.	B1,B2,B3,C1,C3,D1,D3	15%
Final Exam	The final exam is comprehensive and practical, and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

13. Admissions	
Pre-requisites	ITMS 327
Minimum number of students	5
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE**

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 350 – Desktop Publishing

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 327

NQF Level Allocated: Level 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course introduces students to the basic concepts and terminology of desktop publishing. Students will have a better understanding of desktop publishing design and production techniques. Through demonstrations and hands-on experience, students will learn how to design and create attractive publications.

OBJECTIVES:

1. To understand the advanced concepts and terminology of desktop publishing
2. To acquire the advanced techniques from basic page setup through use of specialized techniques such as type manipulation and graphic effects.
3. To acquire the knowledge of graphic formats and conventions that give publications a quality look.
4. To gain the technique on how to write and edit the document (newsletter, advertising flyer, booklet) to enhance the message.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL.:

EMAIL:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories</u> : Demonstrate advanced understanding of concepts, and specialized theories relating to desktop publishing.	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research</u> : NA	
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving</u> : Identify real life problems and solve them by designing efficient and effective documents.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design</u> : Design the sketch of document by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools</u> : Apply multimedia software and tools such as desktop publishing software that assists in the creation of state of the art desktop publishing document.	Knowledge: Practical Application [Level 7]

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic</u> : Critically analyze a desktop publishing document and remodel part/some/all objects found within the document.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic</u> : NA	
C3	<u>Creative</u> : Demonstrate creativity in designing the state of the art desktop publishing document.	Knowledge: Practical Application [Level 7]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/ Level
D1	<u>Communication</u> : Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 6]
D2	<u>Teamwork and Leadership</u> : NA	
D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 6]
D4	<u>Ethical and Social Responsibility</u> : NA	

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Introduction	Lecture	-
2	4	-	A1	Introduction to design principals	Lecture	-
3	2	2	A1, B1, B2, B3, C1, C3	Working with Text Part 1	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1, B2, B3, C1, C3	Working with Text Part 2	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1,B1,B2,B3, C1,C3,D3	Working with Graphics Part 1	Lecture/ Lab Demonstration/ Supervised Work	Assignment
6	-	4	A1, B1, B2, B3, C1, C3, D1	Working with Graphics Part 2	Lab Demonstration/ Supervised Work	Oral Inquiry
7	2	2	A1,B1,B2,B3, C1,C3,D3	Creating Simple Publication Part 1	Lecture/ Lab Demonstration/ Supervised Work	Assignment

8	-	4	A1, B1, B2, B3, C1, C3	Creating Simple Publication Part 2	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1, B1, B2, B3, C1, C3	Building More Complex Publications Part 1	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1,B2,C1	Building More Complex Publications Part 2	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1,B1,B2,B3, C1,C3,D3	Creating Multi-page Publications Part 1	Lecture/ Lab Demonstration/ Supervised Work	Assignment
12	2	2	A1,B1, B2, B3, C1, C3, D1	Creating Multi-page Publications Part 2	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
13	2	2	A1, B1, B2, B3, C1, C3	Fine-Tuning Publications	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1, B1, B2, B3, C1, C3	Mail Merge	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	B1,B2,B3,C1,C3, D1,D3	Students Presentations And Reports Of Research Projects	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16			A1, B1,B2, B3 C1, C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S): 1. Adobe Creative Team (2016), Adobe InDesign CC Classroom in a book, Adobe Press, ISBN: 978-0-13-390439-0

HANDOUT(S): Power point slides, <http://www.ahlia.edu.bh/moodle>.

REFERENCE(S): 1. Paul Stiff (2006), "The optimism of modernity: recovering modern reasoning in typography", The Stafford Papers.

ASSESSMENTS

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in desktop publishing. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of desktop publishing.	A1,B1,B2,B3, C1,C3,D3	10%
Major Test	The test will be an in-class 1-hour exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each of the four practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of desktop publishing. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	10%
Project Report And Presentation	Starting from weak 4, each student will be asked to create a state of the art desktop publishing document (newsletter, advertising flyer, booklet).	B1,B2,B3,C1,C3,D1,D3	15%

Final Exam	The final exam is comprehensive and practical, and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

13. Admissions	
Pre-requisites	ITMS 327
Minimum number of students	5
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 351 – Graphics and Multimedia

Weight: (2-2-3)

Prerequisite: ITMS 205

NQF Level Allocated: Level 7

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

Description: This course is to cover the concepts and technologies as two dimensional: one dimension introduces the students to the essential practical packages such as the world of digital video, video-capture card, a quick tour of Premiere, Premiere editing video and transitions. The other dimension deals with vector graphics.

Objective:

1. To critically understand the concepts of vector graphics.
2. To apply the stages of creating vector base documents.
3. To cover both theoretical and practical issues of a video processing tool.
4. To develop advanced skills for developing movies utilizing specialized multimedia tools.

Semester:

Instructor:

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate critical knowledge and understanding of the vector graphics and video processing, how it works and how to create them using the appropriate software, a quick tour of Adobe Illustrator and a quick tour of Adobe Premiere.	Knowledge: theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: N/A	
A3	Professional Responsibility: N/A	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Describe and solve problems related to Vector graphics documents processing and Video Files processing by using efficient vector graphics processing tool and Video editing tool.	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]
B2	Modeling and Design: Design, implements, and evaluates a vector graphics documents and video files.	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]
B3	Application of Methods and Tools: Apply appropriate methods, techniques, and tools used in modern vector graphics documents and video files practical packages.	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically analyze a problem and choose the appropriate methods in a vector graphics documents tools and video files tools to solve this problem.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: N/A	
C3	Creative: Demonstrate creativity in relation to apply the concepts of vector graphics and video files methods and techniques effectively to create new ideas and concepts.	Generic Problem Solving & Analytical skills [Level 7]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Show the ability to express and communicate ideas effectively, in written and oral form.	Communication, ICT and Numeracy Skills [Level 7]
D2	Teamwork and Leadership: N/A	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 6]
D4	Ethics and Social Responsibility: N/A	

Course Structure (Outline)

Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lecture	Lab				
1	4	-	A1	Introduction	Lecture/	-
2	2	2	A1, B1,B2, B3,C1,C3	Adobe Illustrator getting to know the work area	Lecture	In-Lab Exercise
3	2	2	A1, B1,B2, B3,C1,C3	Paths	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
4	2	2	A1, B1,B2, B3,C1,C3	Selecting and aligning	Lecture/ Lab Demonstration/ Supervised	In-Lab Exercise
5	2	2	A1, B1,B2, B3,C1,C3	Creating shapes	Lecture/ Lab Demonstration/ Supervised	In-Lab Exercise
6	2	2	A1, B1,B2, B3,C1,C3, D1	Transforming objects	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry

7	2	2	B2,B3,C1,D1	Drawing with the pen tool	Lecture/ Lab Demonstrati on/ Supervised Work	In-Lab Exercise
8	2	2	A1, B1,B2, B3,C1,C3	Color and painting	Lecture/ Lab Demonstrati on/ Supervised Work	In-Lab Exercise
9	2	2	A1, B1, B2 B3, C1, D1,D3	Working with type, layers	Lecture/ Lab Demonstrati on/ Supervised Work	Lab Project 1
10	2	2	A1, B1, B2, B3, C1, C3	Working with gradients	Lecture/ Lab Demonstrati on/ Supervised Work	Test
11	4	-	A1	Introduction The world of digital video	Lecture	-

12	2	2	A1, B1,B2, B3,C1,C3	Video-capture card	Lecture	In-Lab Exercise
13	2	2	A1, B1,B2, B3,C1,C3, D1	A quick tour of Premiere	Lecture/ group discussion/ In Lab exercise	Oral Inquiry
14	2	2	A1, B1, B2 B3, C1, D1,D3	Premiere Editing Video and Transitions	Lecture/ group discussion / In Lab exercise	Lab Project 2
15	2	2	A1, B1, B2, B3, C1, C3, D1,D3	Titles and Credits and Creating a DVD	Lecture	Evaluation Of Project Presentations & Reports
16	1	1	A1, B1, B2, B3, C1, C3	All Topics		Final Exam

* Formative assessment

Teaching Materials:

Textbook(s):	<ol style="list-style-type: none"> 1. Brian Wood, Adobe Illustrator CC Classroom in a book (2019 Release), Adobe Press, 2019, ISBN: 978-0135262160 2. Maxim Jago, Adobe Premiere Pro CC Classroom in a book (2019 Release), Adobe Press, 2019, ISBN: 978-0135298893
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle .
Reference(s):	<ol style="list-style-type: none"> 1. Brian Wood, Adobe Illustrator CC Classroom in a book, Adobe Press, 2014, ISBN: 978-0-13-390565-6 2. Maxim Jago, Adobe Premiere Pro CC Classroom in a book, Adobe Press, 2015, ISBN: 978-0-13-430998-9 3. Adobe Creative team, Adobe Illustrator CS6, Classroom in book, Adobe Press, 2012. 4. Adobe Premiere Pro CC, Classroom in book, Adobe Press, 2014. 5. Adobe Creative team, Adobe Premiere Pro CS6, Classroom in a book, Adobe Press, 2012.

Assessments:

Type of Assessment	Description	ILOs	Weighting
Lab Project 1	Students will be asked (individually) to use and apply Adobe Illustrator software to analyze and process logos, art works to develop new designs. The output of the project should be submitted electronically by the end of week 9 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	A1, B1, B2 B3, C1, D1,D3	5%
Lab Project 2	Students will be asked (individually) to use and apply Adobe Premiere software to analyze and process video to enhance videos or develop new videos. The output of the project should be submitted electronically by the end of week 13 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	A1, B1, B2 B3, C1, D1,D3	5%

In-Lab Exercises	Each of the 7 practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of graphic and video editing. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	10%
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions. Feedback will be given to students to reaffirm their learning outcomes.	A1, D1	Formative
Test (Written and Practical)	The test will be an in-class 1-hour exam that will consist of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1, B1, B2, B3, C1, C3	30%
Final Project (Report and Presentation)	Students will be asked (individually) to use and apply Adobe Illustrator and Adobe Premiere tools to analyze, design, and develop a new complete project that includes titles, graphics, and videos. The output of the project should be submitted electronically by the end of week 15 to be tested and evaluated. Student project will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2, B3, C1, C3, D1,D3	10%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay and problem- solving questions.	A1, B1, B2, B3, C1, C3	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.ahlia.edu.bh/integrity for more information).



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 421: Web Programming II
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITMS 335

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course provides an introduction to HTML5, CSS3, and JavaScript. This course helps students gain basic HTML5/CSS3/JavaScript programming skills. This course is an entry point into both the Web application and Windows Store apps training paths. The course focuses on using HTML5/CSS3/JavaScript to implement programming logic, define and use variables, perform looping and branching, develop user interfaces, capture and validate user input, store data, and create well-structured application.

OBJECTIVES:

1. Describe the new features of HTML5, and create and style HTML5 pages.
2. Create HTML5 forms by using different input types, and validate user input by using HTML5 attributes and JavaScript code
3. Send and receive data to and from a remote data source by using XMLHttpRequest objects and jQuery AJAX operations.
4. Use common HTML5 APIs in interactive and advanced Web applications.
5. Create advanced Web applications that support offline operations.
6. Create advanced HTML5 Web pages that can adapt to different devices and form factors

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOs)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories:</u> <i>Demonstrate critical knowledge and understanding of concepts, and specialized theories relating to NET Platform and dynamic websites using client object.</i>	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving:</u> <i>Deal with advanced and complex situations to solve real life problems</i>	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design:</u> <i>Demonstrate creativity in designing the architecture of specialized Application with appropriate components and models that satisfy user specifications.</i>	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools:</u> <i>Apply specialist level of skills for creating dynamic web sites.</i>	Knowledge: Practical Application [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic:</u> <i>Critically analyze case studies and recommend suitable solutions Applications.</i>	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative:</u> <i>Demonstrate insights and creative thinking while applying the concepts effectively to new situations.</i>	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/Level
D1	<u>Communication:</u> <i>Demonstrate special and advanced skills to communicate technical information in appropriate oral and written forms to a variety of audiences.</i>	Communication, ICT and Numeracy Skills [Level 8]
D2	<u>Teamwork and Leadership:</u> NA	
D3	<u>Organizational and Developmental Skills:</u> <i>Demonstrate ability to organize ideas and effectively allocate time in given assignment.</i>	Competence: Autonomy, Responsibility and Context [Level 8]
D4	<u>Ethical and Social Responsibility:</u> NA	

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Overview of HTML and CSS & Creating and Styling HTML Pages	Lecture	-
2	2	2	A1, B1,B2, B3,C1,C3, D1	Introduction to the Document Object Model	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	A1, B1,B2, B3,C1,C3, D1	Introduction to jQuery	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
4	2	2	A1, B1,B2, B3,C1,C3, D1	Creating Forms to Collect and Validate User Input Using HTML5 Attributes and JavaScript	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1, B1,B2, B3,C1,C3, D1	Communicating with a Remote Server Using the XMLHttpRequest Object	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise Quiz 1
6	2	2	A1, B1,B2, B3,C1,C3, D1	Sending and Receiving Data by Using the jQuery Library	Lab Demonstration/ Supervised Work	In-Lab Exercise
7	2	2	A1, B3, D1	Pseudo-classes and Pseudo-elements	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry *
8	2	2	A1, B1,B2, B3,C1,C3, D1	Creating Objects and Methods by Using JavaScript	Lab Demonstration/ Supervised Work	In-Lab Exercise Quiz 2
9	2	2	A1, B1,B2, B3,C1,C3, D1	Creating Custom Objects	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1,B2,C1	Major Test	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1, B3, D1	Creating Interactive Pages by Using HTML5 APIs	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry *

12	2	2	A1, B1,B2, B3,C1,C3, D1	Reacting to Browser Location and Content	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
13	2	2	A1, B1,B2, B3,C1,C3, D1	Caching Offline Data by Using the Application Cache API	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1, B1,B2, B3,C1,C3, D1	Programmatically Drawing Graphics by Using the Canvas API	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	A1, B1,B2,B3,C1,C3, D1,D3	Understanding Web Workers	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16	2	2	A1, B1,B2, B3, C1,C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	<ul style="list-style-type: none"> Course 20480: Programming in HTML5 with JavaScript and CSS3, Microsoft Press Training Guide, 2013, ISBN: 978-0735674387
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	<p>Dino Esposito, "Modern Web Development: Understanding domains, technologies, and user experience (Developer Reference)", Microsoft Press, 2016, ISBN: 978-1509300013</p> <p>Dino Esposito, "Programming Microsoft ASP.NET MVC (3rd Edition) (Developer Reference) 3rd Edition", Microsoft Press, 2014, ISBN: 978-0735680944</p>

ASSESSMENTS:

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Quizzes	The quizzes consist of essay, problem-solving and research based theoretical questions regarding topics in Dot NET and client object. The purpose of the quizzes is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of Dot NET, Html 5 and client object.	A1,B1,B2,B3, C1,C3	20%
Major Test	The test will be an in-class 90 minute exam that will consist of short-answer, essay, and create web or windows application and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each practical exercise consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of programming application. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3, D1	5%
Project Report And Presentation	Starting from weak 6, each student will be asked to develop a small Application project.	B1,B2,B3,C1, C3, D1,D3	10%
Final Exam	The final exam is comprehensive and practical, and will be of 120 minute duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

14. Admissions	
Pre-requisites	ITMS 335

Minimum number of students	8
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title:	ITMS 426 – 3D Graphics Softwares
Weight:	(2 - 2 - 3)
Prerequisite:	ITMS 327
NQF Level Allocated:	Level 8
NQF Notional Hours / Credits:	120 notional hours / 12 NQF credit

Description: This course introduces students to the basic concepts and terminology of 3D computer graphics as it is used in film, visual effects, games, and animation. Students will have a better understanding of the different disciplines that collectively make up 3D computer graphics production. It will also give students a foundation for 3D Animation and 3D Game Development.

Objective:

1. To critically understand the basic concepts and terminology of 3D computer graphics as it is used in film, visual effects, games, and animation.
2. To acquire the foundation of 3D Animation and 3D Game Development.
3. To gain the different techniques of modeling, texturing, applying lights and rendering objects in 3D
4. To create advanced 3D animation movie.

Semester:

Instructor (s):

Office Telephone:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate critical understanding of concepts, and specialized theories relating to 3D Graphics.	Knowledge: theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: NA	
A3	Professional Responsibility: NA	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Identify real life problems and solve them by designing efficient and effective 3D graphics projects.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the architecture of 3D graphics projects by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	Application of Methods and Tools: Apply multimedia software and tools such as 3D, video editing, audio processing, vector-based software that assists in the creation of 3D graphics projects.	Knowledge: Practical Application [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically analyze 3D Scenes in different viewports within 3D software and remodel part/some/all objects found within the 3D Scenes.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic: NA	
C3	Creative Thinking and innovation: Demonstrate creativity in designing 3D graphics projects.	Knowledge: Practical Application [Level 8]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]
D2	Teamwork and Leadership: NA	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 7]
D4	Ethics and Social Responsibility: NA	

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	1	4	-	A1	Introduction	Lecture
2	2	2	2	A1, B3, C1, D1	3D Basic Concepts and Project Management	Lecture/ lab Demonstration
3	3	2	2	A1,B1, B2, B3, C1, C3	User Interface of Autodesk 3D Studio Max	Lecture/ lab Demonstration
4	4	2	2	A1,B1, B2, B3, C1, C3	First 3D Studio Max Animation	Lecture/ Lab Demonstration/ Supervised Work
5	5	2	2	A1,B1,B2,B3, C1,C3,D3	Modeling in 3D Studio Max Part I	Lecture/ Lab Demonstration/ Supervised Work
6	6	-	4	A1, B1, B2, B3, C1, C3	Exercises in Modeling	Lab Demonstration/ Supervised Work
7	7	2	2	A1,B1,B2,B3, C1,C3,D3	Modeling in 3D Studio Max Part II	Lecture/ Lab Demonstration/ Supervised Work
8	8	-	4	A1, B1, B2, B3, C1, C3	Exercises in Modeling	Lab Demonstration/ Supervised Work
9	9	2	2	A1, B3, C1, D1	Organic Poly Modeling	Lecture/ Lab Demonstration/ Supervised Work

10	10	2	2	A1,B1,B2,C1	Materials and Mapping	Lecture/ Lab Demonstration/ Supervised Work
11	11	2	2	A1,B1,B2,B3, C1,C3,D3	Introduction to the basics of Animation	Lecture/ Lab Demonstration/ Supervised Work
12	12	2	2	A1,B1, B2, B3, C1, C3	Advanced Animation	Lecture/ Lab Demonstration/ Supervised Work
13	13	2	2	A1,B1, B2, B3, C1, C3	Lighting	Lecture/ Lab Demonstration/ Supervised Work
14	14	2	2	A1,B1, B2, B3, C1, C3	Rendering and Character Studio	Lecture/ Lab Demonstration/ Supervised Work
15	15	2	2	B1,B2,B3,C1,C3,D1,D3	Students Presentations And Reports Of Research Projects	Presentation Of Projects By Students
16	16			A1, B1,B2, B3, C1,C3	All Topics	

* Formative assessment

Teaching Materials:

Textbook(s):	ASCENT, Center for Technical Knowledge, Autodesk 3ds Max 2018 Fundamentals: Autodesk Authorized Publisher, ISBN: 978-1946571397
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s):	Martin Poirier and Eric Paquette, "Rig Retargeting for 3D Animation", CHCCS Graphics Interface 2009 Conference Proceedings, Kelowna, BC, Canada, 25-27 May, pages 103-110, 2009

Assessment

Method of Assessment	Description	Learning Outcomes	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics	A1, D1	Formative

	covered during class lectures and lab sessions.		
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in 3D graphics projects. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of 3D graphics projects.	B1, B2, B3, C1, C3	10%
Major Test	The test will be an in-class 1-hour exam that will consist of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each of the practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of 3D Graphics. Students work will be observed and evaluated directly during the lab sessions.	B1, C3	10%
Project	Starting from week 4, each student will be	A1, B1, B2, B3, C1, C3, D1, D3	15%

Report And Presentation	asked to develop a small 3D graphics animation project.		
Overall:			100 %

Admissions	
Pre-requisites	ITMS 327
Minimum number of students	8
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE**

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 432 – Game Development II

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 313

NQF Level Allocated: 8

NQF Notional Hours / Credits: (2 - 2 - 3)

DESCRIPTION: This course focuses on gameplay interaction, artificial intelligence, networking and the use of industry standard middleware, game engines, and APIs. The students will develop a critical approach to the study of gameplay, interaction, and design. Through this course, the student will be able to develop and implement 3D games through the gained tools and techniques.

OBJECTIVES:

- 1.To develop multiple completed games, including 3D games, using common tools, languages, and software for the web, console, PC or mobile platforms.
2. To implement and analyze fundamental data structures and algorithms associated with game applications supporting gameplay mechanics.
3. To demonstrate development skills using multiple programming languages, development environments, and platforms, including advanced and/or experimental topics in game programming.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOS)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories:</u> <i>Demonstrate critical knowledge and understanding of essential concepts and principles related to 3D Game theory and game engines.</i>	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving:</u> <i>Use specialist skills to solve the collections of 3D game problems using 3D techniques.</i>	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design:</u> <i>Apply standard research to design a 3D game using an integrated development environment (IDE).</i>	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools:</u> <i>Demonstrate creativity in application of dynamic memory management techniques to create and destroy game objects.</i>	<u>Knowledge: Practical Application [Level 8]</u>

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic:</u> <i>Critically analyze to implement 3D game problems using 3D game engines.</i>	Generic Problem Solving & Analytical skills [Level 8]
C2	<u>Synthetic:</u> NA	
C3	<u>Creative:</u> <i>Demonstrate creativity in designing efficient 3D games using 3D game techniques.</i>	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal)		NQF Descriptor/Level
D1	<u>Communication:</u> <i>Use Special skills to express and communicate ideas in oral and written form.</i>	<u>Communication, ICT and Numeracy Skills [Level 8]</u>
D2	<u>Teamwork and Leadership:</u> NA	
D3	<u>Organizational and Developmental Skills:</u> <i>Operate specialist level to organize ideas and effectively allocate time in given assignment or project.</i>	<u>Competence: Autonomy, Responsibility and Context [Level 8]</u>
D4	<u>Ethical and Social Responsibility:</u> NA	

Course Structures (Outline)						
Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Syllabus, Introduction Lab Demonstration	Lecture/ Lab Demonstration	
2	2	2	B1, B2, B3, C1, C3	Introduction: - What is "gameplay?" - Character, camera, control - Game rules - A deeper look at the game engine architecture Lab: - C# - Unity Program	Lecture/ In-Lab Supervised Work/ Class Discussion	In-Lab Exercises
3	2	2	A1, B1, B2, B3, C1, C3	Understanding Classes: - Classes - Class Inheritance Object Oriented Thinking - Object Oriented Metaphor - Object Oriented Boids Implementation	Lecture/ Lab Demonstration / In-Lab Supervised Work	In-Lab Exercises
4	2	2	B1, B2, B3, C1, C3	Agile Mentality: - Manifesto for Agile software development - Scrum methodology - Creating your own burndown charts Lab: -C# Gaming classes and Agile	Lecture/ In-Lab Supervised Work	In-Lab Exercises

5	2	2	B1, B2, B3, C1, C3	Game Prototype Examples: Prototype-1 : Apple Picker <ul style="list-style-type: none"> - Purpose - Coding - GUI and Game management Lab: Apple Picker Design and Development	Lecture/ In- Lab Supervised Work	In-Lab Exercises
6	2	2	A1, B1, B2, B3, C1, C3, D1, D3	Prototype-2 : Mission Demolition <ul style="list-style-type: none"> - Game Prototype concepts - Art Assets - Coding the Prototype Lab: <ul style="list-style-type: none"> - Mission Demolition 	Lecture/ In- Lab Supervised Work	Lab Project 1 /In-Lab Exercises
7-8	4	4	B1,B2,B3, C1,C3	Prototype-3 : Space SHMUP <ul style="list-style-type: none"> - Getting started - Setting the Scene - Making the hero ship - Adding Some Enemies - Setting Tags, Layers and Physics - Making Enemies Damage the Player - Shooting - Adding Power Ups - Resolving Race Conditions in Code - Making Enemies Drop Powerups - Programming other enemies - Adding Particle effects and background Lab: <ul style="list-style-type: none"> - Space SHMUP Game prototype Design and implementation 	Lecture/ In- Lab Supervised Work	In-Lab Exercises
9	2	2	B1, B2, B3, C1, C3	Prototype 4: Prospector Solitaire <ul style="list-style-type: none"> -Getting Started, Build Settings -Importing images -Constructing cards -Prospector game 	Lecture/ In- Lab Supervised Work	Lab Test1 / In-Lab Exercises

9	2	2	B1,B2,B3, C1,C3	Prototype 5 Bartok: <ul style="list-style-type: none"> - Getting Started - Build Settings - Coding Bartok - Summary Lab: -Bartok game design	Lecture/ In- Lab Supervised Work	In-Lab Exercises
10-11	4	4	B1, B2, B3, C1, C3	Prototype 6 Word Game: <ul style="list-style-type: none"> - Word Game Prototype - About the word game - Passing the word list - Setting up the game - Laying out the screen - Adding interactivity - Adding Scoring - Adding Animation - Adding Color - Adding Summary Lab: Word Game Design and Implementation	Lecture/ In- Lab Supervised Work	In-Lab Exercises
12-13	4	4	B1, B2, B3, C1, C3	Prototype 7 Quick Snap <ul style="list-style-type: none"> - Getting Started - Quick Snap prototype - Building the scene - Coding the Game - Summary Lab: Quick Snap game design and implementation	Lecture/ In- Lab Supervised Work	Lab Test2 (week13) / In-Lab Exercises
14-15	4	4	A1, B1, B2, B3, C1, C3, D1, D3	Prototype 8 Omega Mage <ul style="list-style-type: none"> - Getting started - Building the scene - The mage character - Mouse interaction - Movement - The inventory and selecting elements - Casting the fire ground spell - Changing rooms - Spawning Enemies - Abstracting enemy 	Lecture/ In- Lab Supervised Work	Lab Project2

16	2	A1, B1, B2, C1, C3	All Topics		Final Exam
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TEACHING MATERIALS:

TEXTBOOK(S):	Introduction to Game Design, Prototyping and Development From Concept to Playable with Unity and C#, Jeremy Gibson Bond, Addison Wesley. 2 nd ed., ISBN-13: 978-0134659862, 2018
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	Learning C# by Developing Games with Unity 2019, Harrison Ferrone, PACT Publishing 4th Edition, ISBN- 1789532051, 2019 Unity Game Development Cookbook, Paris Buttfield-Addison, Jon Manning and Tim Nugent, O'Reilly Media Inc, First Edition, ISBN:978-1-491-99915-8,2019

ASSESSMENTS:

Type of Assessment	Description	ILOs	Weighting
Lab Tests	The student will be assessed through two practical tests, which will take two hours each. In each test, the students will be asked to develop a C# Unity game program for solving a game problem.	B1, B2, B3, C1, C3	40%
Lab Projects	Two lab projects to be given, each worth 10%. The project could cover any topic in the course.	A1, B1, B2, B3, C1, C3, D1, D3	20%
Final Exam	Final exam will be for two hours, including all types of question: short answers questions, true/false, problem solving, etc.	A1, B1, B2, C1, C3	40%
In-Lab Exercise	Exercises will help the students in understanding	B1, B3, C1	Formative
Overall			100%

14. Admissions	
Pre-requisites	ITMS 313
Minimum number of students	8
Maximum number of students	25



الجامعة الأهلية
AHLIA UNIVERSITY
BAHRAIN

COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 435: Web Programming III
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITMS 421

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course introduces students to develop advanced ASP.NET MVC applications using .NET Framework 4.5 tools and technologies. The focus will be on coding activities that enhance the performance and scalability of the Web site application. ASP.NET MVC will be introduced and compared with Web Forms so that students know when each should/could be used.

OBJECTIVES:

- Describe the Microsoft Web Technologies stack and select an appropriate technology to use to develop any given application.
- Create advanced MVC Models and write code that implements business logic within Model methods, properties, and events.
- Describe how to write advanced Windows Azure web service and call it from an MVC application. Modify the way browser requests are handled by an MVC application.
- Describe how to package and deploy an advanced ASP.NET MVC 4 web application from a development computer to a web server for staging or production

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOS)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories</u> : Demonstrate <i>critical knowledge</i> and understanding of concepts, and specialized theories relating to MVC Framework, Responsive Pages and dynamic websites using ASP.net MVC.	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research</u> : NA	
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Use specialist Skills to identify and solve real life problems	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design</u> : Demonstrate creativity in application of knowledge and design the architecture of Application by choosing specialized appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : <i>Demonstrate creativity in application of appropriate advanced tools related to Dot Net Framework, IIS, Html 5, Ajax, JQuery Library and SQL Server for creating advanced dynamic web sites.</i>	Knowledge: Practical Application [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically analyze specialized case studies and recommend suitable solutions Applications.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative</u> : Demonstrate creativity in designing advanced Responsive Pages and MVC Applications.	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/Level
D1	<u>Communication</u> : Make formal presentations and communicate technical information in appropriate oral and written forms to a variety of audiences.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership</u> : NA	

D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 8]
D4	<u>Ethical and Social Responsibility</u> : NA	

1. Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Exploring ASP.NET MVC 4	Lecture/ lab Demonstration	-
2	2	2	A1,B1,C1, D1	Designing ASP.NET MVC 4 Web Applications	Lecture/ lab Demonstration	In-Lab Exercise
3	2	2	A1,B1,B2,C1,C3, D1	Developing ASP.NET MVC 4 Models	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1, B3, D1	Developing ASP.NET MVC 4 Controllers	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise Oral Inquiry*
5	2	2	A1,B1, B2, B3, C1, C3	Developing ASP.NET MVC 4 Views	Lecture/ Lab Demonstration/ Supervised Work	Quiz
6	2	2	A1, B1, B2, B3, C1, C3, D1	Testing and Debugging ASP.NET MVC 4 Web Applications	Lab Demonstration/ Supervised Work	In-Lab Exercise

7	2	2	A1,B1, B2, B3, C1, C3,D1	Structuring ASP.NET MVC 4 Web Applications	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
8	2	2	A1, B1, B2, B3, C1, C3, D1	Applying Styles to ASP.NET MVC 4 Web Applications	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1,B1, B2, B3, C1, C3, D1	Building Responsive Pages in ASP.NET MVC 4 Web Applications	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
10	2	2	A1,B1, B3, C1, C3	Using JavaScript and jQuery for Responsive MVC 4 Web Applications	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1,B1,B2,B3, C1,C3	Controlling Access to ASP.NET MVC 4 Web Applications	Lecture/ Lab Demonstration/ Supervised Work	Quiz In-Lab Exercise
12	2	2	A1,B1, B2, B3, C1, C3, D1	Building a Resilient ASP.NET MVC 4 Web Application	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
13	2	2	A1,B1, B2, B3, C1, C3, D1	Using Windows Azure Web Services in ASP.NET MVC 4 Web Applications	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1, B1,B2, B3,C1,C3, D1	Implementing Web APIs in ASP.NET MVC 4 Web Applications	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

15	2	2	A1,B1,B2,B3, C1,C3,D1,D3	Handling Requests in ASP.NET MVC 4 Web Applications	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16	2	2	A1, B1,B2, B3, C1,C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	<ul style="list-style-type: none"> Course 20486: Developing ASP.NET MVC 4 Web Applications, Training Guide, 2013, ISBN: 978-0735677227
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	<p>Dino Esposito, "Programming ASP.NET Core (Developer Reference) 1st Edition", Microsoft Press, 2018, ISBN: 978-1509304417</p> <p>Ritesh Modi, "Azure for Architects: Implementing cloud design, DevOps, IoT, and serverless solutions on your public cloud", Packt Publishing, 2017, ISBN: 978-1788397391</p>

ASSESSMENTS:

Type of Assessment	Description	ILOs³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Quizzes	The quizzes consist of essay, problem-solving and research based theoretical questions regarding topics in ASP.Net MVC and Responsive Pages. The purpose of the quizzes is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of ASP.Net, Html 5, Responsive Pages and JQuery Library.	A1,B1,B2, B3, C1,C3	20%
Major Test	The test will be an in-class 1:30hrs exam that will consist of short-answer, essay, and create web or windows application and cover the topics studied in the first 9 weeks.	A1,B1, B3, C1, C3	25%
In-Lab Exercises	Each practical exercise consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of programming application. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3, D1	5%
Project Report And Presentation	Starting from week 6, each student will be asked to develop a small Application project.	B1,B2,B3, C1,C3, D1,D3	10%
Final Exam	The final exam is comprehensive and practical, and will be of 120 minute duration. It will consist of short-answer, essay and problem-solving questions to be	A1, B1,B2, B3, C1,C3	40%

	done on computers.		
			Overall 100%

14. Admissions	
Pre-requisites	ITMS 421
Minimum number of students	8
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 436 – Multimedia Applications

Weight: (2-2-3)

Prerequisite: ITMS 426

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

Description: This course introduces the principles and essential concepts of Multimedia Applications. Through this course the student will be guided to implement (theoretically and practically) the gained tools and techniques from previous courses in designing and producing a multimedia application

Objective:

1. To critically understand what the principles of multimedia applications are.
2. To know how to manage advanced multimedia projects.
3. To apply the different advanced techniques of animations within multimedia applications.
4. To create rich, state of the art and advanced multimedia applications using appropriate software and tools

Semester:

Instructor (s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate critical understanding of concepts, and specialized theories relating to multimedia applications.	Knowledge: theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: NA	
A3	Professional Responsibility: NA	

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Identify real life problems and solve them by designing efficient and effective multimedia applications.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the architecture of multimedia applications by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	Application of Methods and Tools: Apply multimedia software and tools that assists in the creation of multimedia applications.	Knowledge: Practical Application [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically analyze a problem and user specification to choose the appropriate multimedia application architecture to solve this problem.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic: NA	
C3	Creative Thinking and innovation: Demonstrate creativity in designing multimedia applications	Knowledge: Practical Application [Level 8]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]
D2	Teamwork and Leadership: NA	
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 7]
D4	Ethics and Social Responsibility: NA	

Course Structure (Outline)

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Introduction	Lecture	-
2	2	2	A1, B3	ActionScript 3.0	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	A1, B3	Adobe Flash: Using the drawing and color tools	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B3	ActionScript 3.0	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1,B1, B2, B3, C1, C3	Adobe Flash: Animation Basics	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
6	2	2	A1, B3	ActionScript 3.0	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
7	2	2	A1,B1, B2, B3, C1, C3,D3	Adobe Flash: Shape Tweening	Lecture/ Lab Demonstration/ Supervised Work	Assignment
8	2	2	A1, B3	ActionScript 3.0	Lecture/ Lab Demonstration/ Supervised Work	Test

9	2	2	A1,B1, B2, B3, C1, C3	Adobe Symbols and Instances	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1, B1,B3,C1,C3	Adobe Flash: Filters and Blend Modes	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

11	2	2	A1,B1, B2, B3, C1, C3,D3	Adobe Flash: Motion Tweening and Timeline Effects	Lecture/ Lab Demonstration/ Supervised Work	Assignment
12	2	2	A1,B1, B2, B3, C1, C3,D1	Adobe Flash: Working with Bitmaps	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
13	2	2	A1,B1, B2, B3, C1, C3	Adobe Flash: Buttons and Movie Clips	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1,B1, B2, B3, C1, C3	Adobe Flash: Text, Sound and Video, integration with ActionScript 3.0 and Forms	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	B1,B2,B3, C1,C3,D1, D3	Students Presentations And Reports Of Research Projects	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16			A1, B1,B2, C1, C3	All Topics		Final Exam

* Formative assessment

Teaching Materials:

Textbook(s):	Adobe Press (2014), <i>Adobe Flash Professional CC Classroom in a Book (2014 release)</i> , ISBN: 978-0-13-392710-8
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle .
Reference(s):	<ol style="list-style-type: none"> 1. Lei Huiyang and Ren Jianfeng , “Review of Edutainment and Flash in the Field of Educational”, International Journal of Information and Education Technology, Vol. 1, No. 4, October 2011 2. Adobe Press (2012), <i>Adobe Flash Professional CS6 Classroom in a Book 1st Edition</i>, ISBN: 978-0321822512

Assessment

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in multimedia applications. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of multimedia applications.	A1,B1,B2, B3, C1,C3,D3	10%
Major Test	The test will be an in-class 1-hour exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2, C1	25%
In-Lab Exercises	Each of the four practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of multimedia application. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	10%
Project Report And Presentation	Starting from weak 4, each student will be asked to develop a small multimedia application.	B1,B2,B3, D3	15%
Final Exam	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions.	A1, B1,B2, C1,C3	40%
Overall			100%

Admissions	
Pre-requisites	ITMS 426
Minimum number of students	8
Maximum number of students	20



COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 437: Cloud Services Development
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITMS 435

NQF Level Allocated: 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course introduces students to learn how to design and develop services that access local and remote data from various data sources. Students will also learn how to develop and deploy services to hybrid environments, including on-premises servers and Windows Azure.

OBJECTIVES:

1. Query and manipulate data with Entity Framework.
2. Extend ASP.NET Web API services using message handlers, model binders, action filters, and media type formatters
3. Use Windows Azure Service Bus for relayed messaging and brokered messaging using queues and topics
4. Host services on on-premises servers, and on various Windows Azure environments, such as Web Roles, Worker Roles, and Web Sites
5. Create scalable, load-balanced advanced services.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOs)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/Level
A1	<u>Concepts and Theories:</u> <i>Demonstrate critical knowledge and understanding of concepts, and specialized theories relating to Entity Framework</i>	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research:</u> NA	
A3	<u>Professional Responsibility:</u> NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving:</u> Use specialist Skills to identify and solve real life problems	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design:</u> <i>Apply standard research to design the architecture of Applications and Web API services</i>	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools:</u> <i>Demonstrate creativity in application of appropriate advanced tools related to creating dynamic web sites.</i>	Knowledge: Practical Application [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic:</u> <i>Critically analyze source code in various scripts and remediate any bug found</i>	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative:</u> <i>Demonstrate creativity in designing Web API Services, advanced dynamic websites and Manage Windows Azure.</i>	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal Development)		NQF Descriptor/Level
D1	<u>Communication:</u> <i>Use special skills to communicate technical information in appropriate oral and written forms to a variety of audiences.</i>	Communication, ICT and Numeracy Skills [Level 8]
D2	<u>Teamwork and Leadership:</u> NA	
D3	<u>Organizational and Developmental Skills:</u> <i>Demonstrate ability to organize ideas and effectively allocate time in given assignment.</i>	Competence: Autonomy, Responsibility and Context [Level 8]
D4	<u>Ethical and Social Responsibility:</u> NA	

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Overview of service and cloud technologies	Lecture/ lab Demonstration	-
2	2	2	A1,B1,B2,B3,C1, C3, D1	Querying and manipulating data using Entity Framework	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	A1,B1,B2,B3,C1, C3, D1	Creating and consuming ASP.NET Web API services	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
4	2	2	A1,B1,B2,B3,C1, C3, D1	Extending and securing ASP.NET Web API services	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise Quiz 1
5	2	2	A1, B3, D1	Creating WCF services	Lecture/ lab Demonstration	Oral Inquiry *
6	2	2	A1,B1,B2,B3,C1, C3, D1	Designing and extending WCF services	Lab Demonstration/ Supervised Work	In-Lab Exercise
7	2	2	A1, B3, D1	Implementing Security in WCF services	Lecture/ lab Demonstration	Oral Inquiry *
8	2	2	A1,B1,B2,B3,C1, C3, D1	Windows Azure Service Bus	Lab Demonstration/ Supervised Work	In-Lab Exercise Quiz 2

9	2	2	A1,B1,B2,B3,C1, C3, D1	Hosting services	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1, ,B2, C1,C3	Deploying Services	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1, B3, D1	Windows Azure Storage	Lecture/ lab Demonstration	Oral Inquiry *
12	2	2	A1,B1,B2,B3,C1, C3, D1	Monitoring and diagnostics	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
13	2	2	A1,B1,B2,B3,C1, C3, D1	Identity management and access control	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1,B1,B2,B3,C1, C3, D1	Identity management and access control	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	A1, B1,B2,B3,C1,C3, D1,D3	Scaling Services	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16	2	2	A1, B1,B2, B3, C1,C3	All topic		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	Course 20487: Developing ASP.NET MVC 4 Web Applications, Microsoft Press Training Guide, 2013, ISBN: 978-0735677241
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle

REFERENCE(S):	<p>Microsoft Official Curriculum.</p> <p>https://www.microsoft.com/learning/en-us/course.aspx?ID=20487B</p> <p>Ritesh Modi, "Azure for Architects: Implementing cloud design, DevOps, IoT, and serverless solutions on your public cloud", Packt Publishing, 2017, ISBN: 978-1788397391</p> <p>Greg Leonardo, "Hands-On Cloud Solutions with Azure: Architecting, developing, and deploying the Azure way", Packt Publishing, 2018, ISBN: 978-1786468659</p>
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ASSESSMENTS:

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Quizzes	The quizzes consist of essay, problem-solving and research based theoretical questions regarding topics in Web API, Windows Azure and Hosting. The purpose of the quizzes is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of Services and cloud systems like Windows Azure.	A1,B1,B2,B3, C1,C3	10%
Major Test	The test will be an in-class 90 minute exam that will consist of short-answer, essay, and create web or windows application and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1,C3	25%
In-Lab Exercises	Each practical exercise consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of programming application. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3, D1	5%

Project Report And Presentation	Starting from week 6, each student will be asked to develop a small Application project.	B1,B2,B3,C1,C3,D1,D3	20%
Final Exam	The final exam is comprehensive and practical, and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

14. Admissions	
Pre-requisites	ITMS 435
Minimum number of students	8
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE**

COURSE SYLLABUS/ SPECIFICATION

CODE & TITLE: ITMS 445 – **Modeling and Animating Characters in 3D**

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 426

NQF Level Allocated: Level 8

NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

DESCRIPTION: This course introduces students to the basic concepts and terminology of 3D characters modeling and animating as it is used in film, and games. Students will have a better understanding of the different disciplines that collectively make up 3D characters. It will also give students a foundation for 3D characters modeling and animating.

OBJECTIVES:

1. To critically understand the basic concepts and terminology of 3D characters as it is used in film, visual effects, games, and animation.
2. To acquire the foundation of 3D characters modeling and animating.
3. To gain the advanced different techniques of organic modeling, character setup, and texturing in 3D.
4. To acquire the advanced techniques of animation of 3D characters
5. To create advanced animated 3D characters film.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL.:

EMAIL:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	<u>Concepts and Theories</u> : Demonstrate critical understanding of concepts, and specialized theories relating to 3D characters modeling and animating.	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research</u> : NA	
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving</u> : Identify real life problems and solve them by designing efficient and effective 3D characters.	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design</u> : Design the architecture of 3D characters by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : Apply multimedia software and tools such as 3D, video editing, audio processing, and vector based software that assists in the creation of 3D characters.	Knowledge: Practical Application [Level 8]

C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic</u> : Critically analyze a 3D character in different viewports within 3D software and remodel part/some/all objects found within the 3D Scenes.	Generic Problem Solving & Analytical skills [Level 8]
C2	<u>Synthetic</u> : NA	
C3	<u>Creative</u> : Demonstrate creativity in designing and modeling 3D characters.	Knowledge: Practical Application [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal		NQF Descriptor/ Level
D1	<u>Communication</u> : Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership</u> : NA	
D3	<u>Organizational and Developmental Skills</u> : Demonstrate ability to organize ideas and effectively allocate time in given assignment.	Competence: Autonomy, Responsibility and Context [Level 7]
D4	<u>Ethical and Social Responsibility</u> : NA	

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Introduction and review of animation principles	Lecture	-
2	4	-	A1, D1	Intermediate Animation and Timing Techniques	Lecture	Oral Inquiry
3	2	2	A1, B1,B2, B3,C1,C3	Facial Animation Techniques	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1,B2, B3,C1,C3	Fundamental Character Modeling Techniques	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1,B1,B2,B3, C1,C3,D3	Musculature and Detail Modeling Techniques	Lecture/ Lab Demonstration/ Supervised Work	Assignment
6	-	4	A1, B1,B2, B3,C1,C3	Facial Modeling Techniques	Lab Demonstration/ Supervised Work	In-Lab Exercise

7	2	2	A1,B1, B2, B3, C1, C3, D3	Character Model Cleanup and Rigging Preparation	Lecture/ Lab Demonstration/ Supervised Work	Assignment
8	-	4	A1, B1, B2, B3, C1, C3	Character Skeleton Construction	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1,B1, B2, B3, C1, C3	Character Skinning Techniques	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1,B1,B2,C1	Facial Rigging Techniques	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1,B1,B2,B3, C1,C3,D3	Advanced Character Rigging and controls	Lecture/ Lab Demonstration/ Supervised Work	Assignment
12	2	2	A1,B3, D1	Character Rig Final Phase Testing Methods	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry
13	2	2	A1,B1, B2, B3, C1, C3	Preparing to animate	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1,B1, B2, B3, C1, C3	Enhancing character performance with dynamic effects	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
15	2	2	B1,B2,B3,C1,C3, D1,D3	Students Presentations And Reports Of Research Projects	Lecture/ Presentation Of Projects By Students	Evaluation Of Project Presentations & Reports
16			A1, B1,B2, B3, C1,C3	All Topics		Final Exam

TEACHING MATERIALS:

- TEXTBOOK(S):** 1. Jahirul Amin (2015), Beginner's Guide to Character Creation in Maya, 3D Total Publishing, ISBN: 9781909414204
- HANDOUT(S):** Power point slides, <http://www.ahlia.edu.bh/moodle>.
- REFERENCE(S):** 1. Matahari Bkakti, Eko Mulyanto Yuniarno, Samuel Gandang Gunanto, "Facial Rigging for 3D Character", International Journal of Computer Graphics and Animation (IJCGA) Vol. 4, No. 3, July 2014

ASSESSMENTS

Type of Assessment	Description	ILOs ³	Weighting
Oral Inquiry	Students will be questioned orally to demonstrate their understanding and knowledge of the topics covered during class lectures and lab sessions.	A1, D1	Formative
Assignment	The assignment consists of essay, problem-solving and research based theoretical questions regarding topics in 3D characters. The purpose of the assignment is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of 3D characters modeling and animating.	A1,B1,B2,B3, C1,C3,D3	10%
Major Test	The test will be an in-class 1-hour exam that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1,B1,B2,C1	25%
In-Lab Exercises	Each of the four practical exercises consists of a set of practical tasks to be implemented by students individually in lab as shown in the above weekly structure. Each of the exercises assesses the student's skills in the field of 3D characters. Students work will be observed and evaluated directly during the lab sessions.	B1,B2, B3,C1,C3	10%
Project Report And Presentation	Starting from weak 4, each student will be asked to develop a short animated 3D characters film.	B1,B2,B3,C1,C3,D1,D3	15%

Final Exam	The final exam is comprehensive and practical, and will be of two hours duration. It will consist of short-answer, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
Overall			100%

13. Admissions	
Pre-requisites	ITMS 426
Minimum number of students	5
Maximum number of students	20



**COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF INFORMATION TECHNOLOGY**

COURSE SYLLABUS/SPECIFICATION

CODE & TITLE: ITMS 499 – Major Project

WEIGHT: (0 - 6 - 3)

PREREQUISITE: IERM 498 & ETHC 392

DESCRIPTION: Each student is required to select a theoretical and/or a practical problem related to his major area, and work under the supervision of a faculty member. All stages of project development should be emphasized including problem identification, library search, planning, design and/or construction of equipment upon completion of the project, the student must submit a final written report outlining the various phases of the project and make an oral presentation.

OBJECTIVES:

1. To conduct an independent research project on certain chosen topic in the field of Multimedia that involves formulating a real-world problem, developing its requirements, developing, designing and testing dynamic web sites, or designing and developing a 3D animation or video movie, and finally writing a report highlight the results of the project.
2. To employ the knowledge of software engineering in the project development of a dynamic web sites or multimedia design in the project development of a 3D animation or video movie to a real-world problem.
3. To demonstrate independence, research ethics, academic integrity and originality, critical thinking and problem-solving, practical and written skills, as well as organization and time-management skills.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL.:

EMAIL:

INTENDED LEARNING OUTCOMES (ILOS)

Upon successful completion of the course, students should be able to:

A. Knowledge and Understanding		NQF Descriptor/ Level
A2	<u>Contemporary Trends, Problems and Research</u> : Demonstrate an informed and critical awareness of research issues and methods, technological advancements, and current solutions related to some problems in the field of Multimedia.	Knowledge: theoretical understanding [Level 8]
A3	<u>Professional Responsibility</u> : Demonstrate cognition of and adhere to professional code of conduct as a Multimedia practitioner and researcher.	Knowledge: theoretical understanding [Level 8]

B. Subject-specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving</u> : Solve IT and Multimedia problems; plan, design, and implement their computable solutions.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]
B2	<u>Modeling and Design</u> : Design and develop models for computational systems, components, or processes to meet desired needs within realistic constraints.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : Use effective research methods to gather data and demonstrate proficient use of scripting languages and software as required for the research being undertaken.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic</u> : Analyze problems; identify the appropriate computational resources (input) needed to solve them and analyze the effectiveness and efficiency of output accordingly generated.	Generic Problem Solving & Analytical skills [Level 8]

C2	<u>Synthetic:</u> Develop computerized solution to real life problem and document it in a well-structured project.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative:</u> Create new or improve existing ideas, concepts, techniques, methods, tools, and theories in the field of Multimedia	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	<u>Communication:</u> Communicate ideas cogently, persuasively and effectively, in written and oral form, to a diverse range of audiences and stakeholders.	Communication, ICT and Numeracy Skills [Level 8]
D3	<u>Organizational and Developmental Skills:</u> Engage in life-long learning and continuing self-development to hone professional and organizational and time management skills to write a project within certain timeline.	Competence: Autonomy, Responsibility and Context [Level 8]
D4	<u>Ethical and Social Responsibility:</u> Follow research ethics and social responsibility and respond positively to the needs of society by employing effectively the advanced computing and information solutions and technologies.	Competence: Autonomy, Responsibility and Context [Level 8]

Course Structure (Outline)

The course consists of the following components that may span up to two semesters.

1. Writing and submitting project proposal that identify a problem in the field of Multimedia and highlight the research methods and tools to be used.
2. Conducting scientific research and writing project in consultation with the supervisor through regular meetings using Ahlia University's *Undergraduate Project Guidelines XXXX 499*. The timeline and the key milestones are typically as follows:

Key Milestones	Timeline
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<p>Introduction and Problem Definition</p> <ul style="list-style-type: none"> ✚ Propose and study an important research topic/problem ✚ Define research problem, history, motivation, and objectives ✚ Write a draft introduction chapter and seek advice from supervisor ✚ Revise the chapter accordingly 	2 weeks
<p>Literature Review</p> <ul style="list-style-type: none"> ✚ Search and gather literature on the research topic/problem ✚ Study research methods and solutions developed for such research problem ✚ Write a draft chapter on Literature Review and discuss with supervisor ✚ Revise the chapter accordingly 	3 weeks
<p>Approach, Conceptual Model, Research Method and Tools</p> <ul style="list-style-type: none"> ✚ Select and study conceptual model and effective research methods to be used ✚ Choose and study any other requirements, e.g., scripting languages, software and other tools. ✚ Write a draft chapter on Conceptual Model, Research Methods and Tools ✚ Consult with supervisor and revise accordingly 	3 weeks
<p>Software Development, Analysis and Implementation</p> <ul style="list-style-type: none"> ✚ Solicit any software requirements and specifications if needed ✚ Design, implement and evaluate dynamic web sites, or 3D animation or video movie ✚ Study, analyze source code ✚ Discuss with supervisor results and conclusions and revise accordingly 	4 weeks
<p>Drafting Main Chapters in Project</p> <ul style="list-style-type: none"> ✚ Describe the development and implementation process of your dynamic websites and experiments, if any ✚ Discuss scientifically and critically your findings, implications and conclusions ✚ Document any limitations and possible future work ✚ Discuss the final chapters with supervise, revise and finalize the dissertation accordingly 	3 weeks

TEACHING MATERIALS:

TEXTBOOK(S): N/A

HANDOUT(S): *Undergraduate Project Guidelines, Ahlia University.*

REFERENCE(S): Students are free to choose the references that support their research studies in consultation with their supervisors.

ASSESSMENTS:

The student research work, written project, oral presentation/defense, and other supplemented documentations or software is evaluated by an examination Committee as mentioned above according to University regulations described in the Project Presentation Guidelines XXXX 499, V. 2, Ahlia University. The student has to defend his/her project in front of the examination committee which consists of three examiners consisting of the supervisor, and two internal examiners. The student work will be evaluated as follows.

	Criteria	Marks	Total
Written Project	Problem Definition	14	70%
	Literature Search	14	
	Methodology & Analysis	14	
	Format	14	
	Documentation	14	
Oral Presentation	Organization, Eye Contact,& Delivery	10	30%
	Time Management & Presentation Skills	10	
	Questions & Answers	10	
Total		100	100%

Admissions	
Pre-requisites	IERM 498 & ETHC 392
Minimum number of students	8
Maximum number of students	25

Ahlia University values academic integrity. Therefore, all students must understand the meaning and consequences of cheating, plagiarism and other academic offences under the Code of Student Conduct and Disciplinary Procedures (see www.ahlia.edu.bh/integrity for more information).