



**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 240 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		
- On the job Training, - Mentoring, Tasks, Supervision Note: <i>academic supervision, site supervision, observation, and learning by doing, all aided by Internship program guidelines</i>		
Assessment/Grading Scheme		
Student report (two monthly and one final report), site supervisor evaluation (mid and final), and academic supervisor evaluation. 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.		
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 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 emphasizes learning the architecture, techniques, tools and development phases of Multimedia Systems. Students will understand the underlying concepts of multimedia, and gain knowledge about state-of-the-art in this field.

Objective:

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(s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/Level
A1	Concepts and Theories: Demonstrate detailed knowledge and understanding related to fundamental elements of multimedia systems.	Knowledge: theoretical understanding [Level 6]
A2	Contemporary Trends, Problems and Research:	NA
A3	Professional Responsibility:	NA
B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving:	NA
B2	Modeling and Design:	NA
B3	Application of Methods and Tools: Apply graphic design principles using multimedia design tools.	Knowledge: Practical Application [Level 6] Skills: Communication, ICT & Numeracy [Level 6]
C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Evaluate different multimedia technologies and problems needed for developing multimedia systems.	Generic Problem Solving & Analytical skills [Level 6]
C2	Synthetic:	NA
C3	Creative Thinking and Innovation:	NA
D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Use basic skills to communicate ideas in oral and written form.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership:	NA
D3	Organizational and Developmental Skills:	NA
D4	Ethics and Social Responsibility:	NA

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	3		A1, D1	Syllabus and Creating Moodle accounts Introduction: • Information Systems overview	Lecture/ Class Discussion	-
2	3		A1, D1	Introduction to multimedia systems: • What is multimedia? • History of multimedia. • Components of multimedia systems	Lecture/ Class Discussion	Oral Participation
3	3		B3, C1, D1	Introduction to multimedia: • Web and Internet multimedia applications. • Transition from conventional media to	Lecture/ In-Class Supervise d Work	Assignment 1
4	3		A1, D1	Computer Fonts and Hypertext: • Usage of text in Multimedia. • Families and faces of fonts. • Outline fonts.	Lecture/ In-Class Supervise d Work	Oral Participation
5	3		A1	Computer Fonts and Hypertext: • Bitmap fonts. • International character sets and hypertext.	Lecture/ In-Class Supervise d Work	Quiz 1
6	3		A1, D1	Audio fundamentals and representations: • Digitization of sound. • Frequency and bandwidth. • Decibel system. • Data rate. • Audio file format. • Sound synthesis.	Lecture/ In-Class Supervise d Work	Oral Participation

7	3		B3, C1, D1	Audio fundamentals and representations: • MIDI. • Wavetable, • Compression and transmission of audio on Internet.	Lecture/ In-Class Supervised Work	Assignment 2
8	3		A1, D1	Image Fundamentals and representations: • Colour Science. • Colour. • Colour Models. • Colour palettes. • Dithering, 2D Graphics. • Image. • Compression and File Formats: GIF, JPEG, JPEG 2000, PNG, TIFF, EXIF, PS,	Lecture/ In-Class Supervised Work	Oral Participation
9	3		A1	Image Fundamentals and representations: • Basic Image Processing. • White balance correction. • Dynamic range correction. • Gamma correction. • Photo Retouching.	Lecture/ In-Class Supervised Work	Quiz 2
10	3		A1, C1, D1	Video and Animation: • 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, D1	Video and Animation: • 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-	Lecture/ In-Class	Oral Participation

12	3		A1, D1	Video and Animation: • Animation: Cell Animation. • Computer Animation. • Morphing.	Supervise d Work	Oral Participation
13	3		A1, D1	Multimedia Authoring: • Multimedia Authoring Basics.	Lecture/ In-Class Supervise	Oral Participation
14	3		B3, C1, D1	Multimedia Authoring: • Some Authoring Tools.	Lecture/ Independent Learning	Assignment 3
15	3		A1, D1	• Revision.		
16			A1, C1, D1	All Topics	Final Exam	

Teaching Materials:

Textbook(s)	Ze-Nian Li, Mark S. Drew and Jiangchuan Liu, "Fundamentals of Multimedia", 2021, Springer Nature.
Handout(s)	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s)	1. Sreeparna Banerjee, "Elements of Multimedia", 2019, Taylor & Francis Group, LLC / CRC Press. 2. Tay Vaughan, "Multimedia making it work", 2014, McGraw-Hill Education; 9 edition. 3. Vic Costello, "Multimedia Foundations: Core Concepts for Digital Design, 2nd Edition", 2017, T&F/FOCAL PRESS. 4. Ze-Nian Li, Mark S. Drew, Jiangchuan Liu, "Fundamentals of Multimedia (2nd ed.)", 2014, Springer International Publishing. 5. An Introduction to Digital Multimedia 2nd Edition, 2013, Jones & Bartlett Learning; 2 edition, ISBN 144968839X-978-1449688394.

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	A, D1	Formative
Quizzes	The test will be an in-class 30 minutes quiz that will consist of short-answer and problem solving questions. Also, it covers the topics as shown in the above weekly	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.	B3, C1, D1	20%
Major Test	The written test will be an in-class 1:30 hour test that will consist of MCQs, short-answer, essay, and problem-solving questions and cover the topics studied in the first 4 weeks.	A1, C1, D1	30%
Final Exam	The final exam is comprehensive and will be for two hours duration.	A1, C1, D1	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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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 6

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

Description: This course focuses on implementing websites using HTML and CSS. Students get hands-on practice working with fundamentals through superior techniques to get the most out of their experience by teaching them the basics of web implementation. In addition, students learn the Javascript to have interactive and appealing websites. To know more about Content Management System(CMS) usages and its applications.

Objectives:

1. To critically understand the basic concepts and terminology of static web sites.
2. To gain the different techniques of development for entire static web sites.
3. To acquire the foundation of interactive websites using client-side programming technique.
4. To demonstrate knowledge of web content management and administration.

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 static web site and development.	Knowledge: theoretical understanding [Level 6]
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:	N/A
B3	Application of Methods and Tools: Employ appropriate methods, techniques, and tools for developing web sites.	Knowledge: Practical Application [Level 6] Skills: Communication, ICT & Numeracy[Level 6]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills:	N/A
C2	Synthetic:	N/A
C3	Creative:	N/A

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication:	N/A
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: Introduction to Computer and the Internet	Lecture, Exercises, Lab Demonstration	Oral Participation
2	2	2	A1, B3	Using HTML5: - First HTML5 Example - Headings - Linking - Images, alt Attribute - Void Elements	Lecture, Lab Demonstration	In-Lab Exercises
3	2	2	A1, B3	Using HTML5: - Using Images as Hyperlinks - Special Characters and Horizontal Rules - Lists - Tables - Forms	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
4	2	2	A1, B3	Using HTML5: Form Inputs with different properties	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
5	2	2	A1, B3	Using HTML5: - input and datalist Elements and autocomplete Attribute - input autocomplete - Datalist Element	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
6	2	2	A1, B3	Using HTML5: Page-Structure Elements: header Element nav Element figure Element and figcaption Element article Element	Lecture, Exercises, Lab Demonstration	Quiz 1

7	2	2	A1, B3	Using HTML5: 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	In-Lab Exercises
8	4	4	B3	Using CSS3: • Introduction to CSS • Inline Styles • Embedded Style Sheets • Linking External Style Sheets • Positioning Elements: Absolute Positioning, z-index • Backgrounds	Lecture, Exercises, Lab Demonstration	Lab Test
9	2	2	B3	Using CSS3: • Box Model and Text Flow • Media Types and Media Queries • Drop-Down Menus	Lecture, Exercises, Lab Demonstration	In-Lab Project Part A
10	2	2	B3, D3	Using JavaScript: • Getting started with JavaScript • Adding Javascript to a webpage • Javascript essentials	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
11	2	2	A1, B3	Using JavaScript: • Variables, datatypes, operators • arrays	Lecture, Exercises, Lab Demonstration	In-Lab Project Part B
12	2	2	B3, D3	Using Javascript: • Logic statements • Loops • Functions	Lecture, Exercises, Lab Demonstration	Quiz 2

13	2	2	A1, B3	Using Javascript: • Document object model • Window History, Window Navigator, Window Location • Accessing the elements in DOM	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
14	2	2	A1, B3	Content Management System (CMS): • CMS definition • Working with CMS • CMS Examples	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
15	2	2	A1, B3, D3	Content Management System (CMS): • Building a website using CMS	Lecture, Exercises, Lab Demonstration	In-Lab Exercises In-Lab Project Part C
16	-	2	A1, B3, D3	All Topics and Final Programming Project presentations to be given by students.	Discussion, Tutorial	Final Exam

Teaching Materials:

Textbook(s):	1. i Code Academy, (2017), HTML & CSS For Beginners: Your Step by Step Guide to Easily HTML & CSS Programming in 7 Days 2. Laurence Lars Svekis, Maaïke van Putten, Rob Percival (2021), Javascript from Beginner to Professional, Pack Publishing, ISBN: 978-1800562523
Handout(s):	Available on http://www.ahlia.edu.bh/moodle .
Reference(s):	1. Tay Vaughan, (2017), Multimedia: Making It Work, Ninth Edition, McGraw Hill. 2. Prabhat K. Andleigh, Kiran Thakrar, (2015), Multimedia Systems Design, Pearson. 3. J.M. Gustafson, (2013), HTML5 Web Application Development By Example Beginner's guide, Packt Publishing, ISBN 978-1-84969-594-7 4. Z-N. Li, M.S. Drew, and J. Liu, (2014), Fundamentals of Multimedia, 2nd Edition, Springer.

	5. Laura Lemay, Rafe Colburn, Jennifer Kyrnin, (2016),HTML, CSS & JavaScript Web Publishing in One Hour a Day, Sams Teach Yourself : Covering HTML5, CSS3, and jQuery, Pearson Education (US)
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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	Formative
In-Lab Exercises	Lab exercises cover problem solving questions and help students in mastering the topics.	B3	Formative
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.	B3	25%
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.	B3, D3	25%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B3, D3	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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COLLEGE OF INFORMATION TECHNOLOGY

DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 207 – Graphic Design I

Weight: (2 - 2 - 3)

Prerequisite: ITMS 201

NQF Level Allocated: Level 7

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

Description: This course helps the student to efficiently develop a solid foundation in graphic design and production capabilities to pursue design as a career and to gain skills that will complement other professions. The course involves an integration of design fundamentals coupled with professional software capabilities. The course covers topics about composition, typography, color, images, layouts, and production to engage and communicate effectively in all media.

Objective:

1. To critically understand the graphic design fundamentals.
2. To cover professional software capabilities in graphic design.
3. To integrate design fundamentals with creative software skills.
4. To develop advanced skills in graphic design and production using professional software capabilities.

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 graphic design elements and principles.	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 user needs to develop the required graphic design elements.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design graphic contents for various real-world applications.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Apply specialized tools used in modern graphic design.	Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills:	NA
C2	Synthetic:	NA
C3	Creative Thinking and Innovation: Demonstrate creativity in relation to the development of new design ideas.	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 6]
D2	Teamwork and Leadership:	NA
D3	Organizational and Developmental Skills:	NA
D4	Ethics and Social Responsibility:	NA

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1, D1	Introduction - What is Graphic Design? - Design Analysis: Environmental Graphics	Lecture	Oral Participation
2	2	2	B2, B3	Software Basics and Workspace	Lecture / Group Discussion / In Lab exercise	Oral Participation
3	2	2	A1, D1	Fundamentals of Composition - The Elements of Design - Line and Shape - Form and Space - Texture, Imagery, and Typography - Types of Graphics	Lecture / Group Discussion	Oral Participation
4	2	2	A1, D1	- Principles of Graphic Design - Symmetry/Asymmetry - Pace and Contrast - Size and format - Identity and extended systems	Lecture / Group Discussion	Oral Participation
5	2	2	B2, B3	Working with Images, Layers, and Tools	Lecture / Group Discussion / In Lab exercise	Oral Participation
6	2	2	A1, D1	Fundamentals of Typography - What is Typography? - The anatomy of type - Understanding and selecting typefaces - Formats - Readability and	Lecture / Group Discussion	Oral Participation

				legibility		
7	2	2	A1, D1	• Typographic emphasis and hierarchy • Typographic rules/boxes and ornaments • Text as image	Lecture / Group Discussion	Oral Participation
8	2	2	B3	• Creating Typography and using Fonts	Lecture / Group Discussion / In Lab exercise	Lab Project 1
9-10	4	4	A1, B1, B2	Fundamentals of Color • Color terminology • Color legibility, contrast, and harmony • Color associations • Color as information • Working with Colors Palettes and Libraries	Lecture / Group Discussion	Major Test
11-12	4	4	A1, D1	Fundamentals of Images • Attracting Audience • Illustration • Photography • Image Resolution • File Format	Lecture / Group Discussion	Oral Participation
13	2	2	B1, B2, B3, C3	• Acquiring Digital Images • Using Filters + Image Size, Resolution and Adjustments	Lecture / Group Discussion / In Lab exercise	Lab Test
14	4	4	B3	Fundamentals of Layouts • Basic Principles of design layout • Styles of layout • Visual hierarchy • Grid Layouts • Grids and Alignment Tools	Lecture / Group Discussion	Lab Project 2
15	2	2	B1, B2,	Production	Lecture /	Final Project

			B3, C3, D1	• Preparing files for print • Creating a convincing presentation • Papers stocks and finishing • Printed color • Print media • Digital printing • Correcting color proofs and press check Lab: Preparing files for print	Group Discussion	
16	2	2	A1, B1, B2, B3, C3	All Topics	Lecture / Group Discussion / In Lab exercise	Final Exam

Teaching Materials:

Textbook(s)	1. Joyce Walsh (2020), Graphic Design Essentials, Bloomsbury Publishing, ISBN: 9781350075078, 1350075078 2. David Dabner, Sandra Stewart, Abbie Vickress (2017), Graphic Design School, Wiley, ISBN: 9781119343165, 111934316X 3. Conrad Chavez, Andrew Faulkner (2022), Adobe Photoshop Classroom in a Book, Adobe Press, ISBN: 9780137621101, 0137621108
Handout(s)	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s)	1. Robin Landa (2018), Graphic Design Solutions, CENGAGE Learning Custom Publishing, ISBN: 9781337671064, 1337671061 2. Rafael Concepcion (2021), " Adobe Photoshop Lightroom Classic Classroom in a Book" Adobe Press, 1st Edition, ISBN-13: 978-0136885382. 3. Adobe Creative team (2012), Adobe Photoshop CS6, Classroom in book, Adobe Press.

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	Students will be asked (individually) to use and apply editing tools to images or to develop new designs. Student's project will be evaluated in lab sessions where students have to justify their choices of the design.	B3	10%
Major Test	The test will be a 1 hour and 20 minutes exam that will consists of short-answer, essay, problem-solving and analysis questions.	A1, B1, B2	15%
Lab Test	Students will be asked to use and apply bitmap editing tools to develop new design elements as per user requirements.	B1, B2, B3, C3	15%
Final Project (Report and Presentation)	Students will be asked (individually) to use and apply image editing tools to design and develop a new complete project that integrates all design elements and principles. A student has to submit a report and presentation slides of demonstrating the development process of the project. Students' projects will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2, B3, C3, D1	20%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay, problem-solving and practical questions.	A1, B1, B2, B3, C3	40%
Overall			100%

Admissions

Minimum number of students	5
Maximum number of students	20

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

Course Code & Title:	ITMS 212 – Multimedia Design
Weight:	(3 - 0 - 3)
Prerequisite:	ITMS 201
NQF Level Allocated:	Level 6
NQF Notional Hours / Credits:	120 notional hours / 12 NQF credit

Description: This course teaches the essential skills required for multimedia designing which includes development process, fundamentals of design and production phases, proposal preparation, storyboard creation, prototype design, and production. In addition, this course enables the students to understand the stakeholders required for multimedia designing projects.

Objective:

1. To understand the development process of multimedia systems.
2. To identify the members and components required for development of multimedia systems.
3. To explore the essentials of storyboard creation, prototype and production.

Semester:

Instructor(s):

Office Telephone:

Email (s):

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/Level
A1	Concepts and Theories: Demonstrate detailed knowledge and understanding related to fundamental designing elements of multimedia systems.	Knowledge: theoretical understanding [Level 6]
A2	Contemporary Trends, Problems and Research:	NA
A3	Professional Responsibility:	NA

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Identify user requirements to design multimedia solutions.	Knowledge: Practical Application [Level 6]
B2	Modeling and Design: Design multimedia systems by applying design stages to satisfy user requirements.	Knowledge: Practical Application [Level 6]
B3	Application of Methods and Tools: Use the advanced tools for designing multimedia system prototype, storyboard and system production.	Knowledge: Practical Application [Level 6] Skills: Communication, ICT & Numeracy [Level 6]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Evaluate different multimedia technologies and problems needed for developing multimedia systems.	Generic Problem Solving & Analytical skills [Level 6]
C2	Synthetic:	NA
C3	Creative Thinking and Innovation: Demonstrate creativity in designing multimedia components and systems for defined issues.	Generic Problem Solving & Analytical skills [Level 6]

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
D4	Ethics and Social Responsibility:	NA

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lecture	Lab				
1	3	0	A1	Introduction	Lecture/In-Class Discussion	-
2	3	0	A1	Design Ideas: • Conceptualization • Preliminary Analysis • An overview of Development stages	Lecture/ In-Class Discussion	Oral Participation *
3	3	0	A1	Design Process: • Design Thinking. • Five phase model of design process • Craftsmanship	Lecture/ In-Class Supervised Work	Quiz1
4	3	0	A1, B1, C1	Concept Generation and Creativity: • Concept Design process • Creative Thinking • Tools stimulate creative thinking	Lecture/ In-Class Supervised Work	Oral Participation *
5	3	0	B1, B2, B3, C1, C3, D1	Visualization Icons and Color: • Image Classifications and Depictions • Signs and Symbols • Icons Design • Basics of visualizing forms	Lecture/ In-Class Supervised Work	Assignment1
6	3	0	A1, B2, C1	Composition: • Fundamentals • Illusion of spatial depth • Grouping	Lecture/ In-Class Supervised Work	Oral Participation *

7	3	0	B1, B2, B3, C1, C3, D1	Composition: • Grouping • Compositional process • Arranging type and image	Lecture/ In-Class Supervised Work	Assignment 2
8	3	0	A1, B1, B2, C1	Development Team: • One Person, Team approach • Team members • Roles and responsibilities	Lecture/ In-Class Supervised Work	Oral Participation *
9	3	0	A1	Storyboard: • Definition • Importance of Storyboard Advantage • Different Types of Story Boards • Storyboard Formats	Lecture/ In-Class Supervised Work	Quiz 2
10	3	0	A1, B1, B2, C1	Elements of Storyboarding: • Design • Color • Light and Shadow, Perspective • Application of Staging	Lecture/ In-Class Supervised Work	Major Test
11	3	0	A1, B1, B2, B3, C1	Drawing for Storyboards: • Drawing alphabets – SICO shapes • S-Curve, C-Curve • Art of rough drawing shortcuts • Storyboard types	Lecture/ In-Class	Oral Participation *
12	3	0	A1, B1, B2, B3, C1	Message Delivering: • Print • Direct mail and digital marketing • Information Design • Packaging	Supervised Work	Oral Participation *

13	3	0	A1, B1, B2, B3, C1	Procuring work and Production Process • Self-promotion • Portfolio • Basic tools for printing • Digital Tools	Lecture/ In-Class Supervised Work	Oral Participation *
14	3	0	A1, B1, B2, B3, C1, D1	Production Process: • Specialist coloring • File formatting • Print finishing	Lecture/ Independent Learning	Assignment 3
15	3	0		Revision.		
16			A1, B1, B2, C1, C3,	All Topics	Final Exam	

Teaching Materials:

Textbook(s)	1. Robin Landa, "Graphic Design Solutions", 6th Edition, Cengage Learning, 2018, 978-1337554053 2. Sergio Paez and Anson Jew, "Professional Storyboarding: Rules of Thumb", 2012, Focal Press, ISBN : 978-0240817705 3. Gavin Ambrose, Paul Harris and Nigel Ball, "The fundamentals of Graphic Design", Second Edition, Bloomsbury Visual Arts, 2019, ISBN: 978-1474269971
Handout(s)	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s)	1. Neil Leonard and Gavin Ambrose, "Basics Graphic Design 02: Design Research: Investigation for successful creative solutions", Bloomsbury Visual Arts, 2021, ISBN: 978-1350167520 2. Tay Vaughan, "Multimedia making it work", 2014, McGraw-Hill Education; 9 edition. 3. Vic Costello, "Multimedia Foundations: Core Concepts for Digital Design, 2nd Edition", 2017, T&F/FOCAL PRESS.

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.	A1, D1	Formative
Quizzes	The test will be an in-class 30-minute quiz that will consist 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, B3, 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, B2, C1	30%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B1, B2, C1, C3	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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

Course Code & Title:	ITMS 221 – Sound Engineering
Weight:	(2 - 2 - 3)
Prerequisite:	ITMS 201
NQF Level Allocated:	Level 7
NQF Notional Hours / Credits:	120 notional hours / 12 NQF credit

Description: This course overviews sound principles, microphone concepts, sound model, analog and digital audio, sound environment, input and output devices, digital audio and soundtracks in general. The course involves an integration of digital audio tracks coupled with professional software in order to test in the real time environment. In addition, the course cover topics related to pre performance tasks and performance tasks related to sound recording and testing.

Objective:

1. To understand the sound engineering principles.
2. To explore the essentials of acoustics science and art.
3. To cover professional software capabilities in digital audio sound recording.
4. To furnish students with the capabilities of mixing sound elements.

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 sound engineering principles.	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 user needs to develop the sound components for multimedia systems.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design:	NA
B3	Application of Methods and Tools: Apply specialized tools used in modern sound studios.	Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills:	NA
C2	Synthetic:	NA
C3	Creative Thinking and Innovation:	NA

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:	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, D1	1. Fundamentals • What is Sound? • Sound System Model • Sound waves • Graphical Representation of sound waves • Intensity of Sound • Inverse square law of sound wave propagation • Decibel, Signal levels	Lecture	Oral Participation
2	2	2	B3, D1	Working with Workspace and Predefined workspace	Lecture / Group Discussion / In Lab exercise	Oral Participation
3	2	2	A1, D1	The Environment • Why the environment is important? • Environmental effects of Air and Speed of the Sound • Reflection of Sound • Diffusion of Sound • Reverberation • Absorption of sound by objects, air • Diffraction of Sound • Working with environment	Lecture / Group Discussion	Oral Participation
4	2	2	A1, D1	Input Devices • Microphones • Phantom Power	Lecture / Group Discussion	Oral Participation

				- Noise Reduction in Microphone - Polar Coordinate System - Concept of impedance - Wireless microphone - Choosing a microphone - DI Boxes and design		
5	2	2	B3, D1	Working with audio inputs	Lecture / Group Discussion / In Lab exercise	Oral Participation
6	2	2	A1, B1, D1	Output Devices - Loudspeakers - Dynamic Driver Principle - Back EMF - Driver Types - Audio Distortion from Drivers - Passive Vs Active Loudspeakers - Loudspeaker Specifications - Choosing a Loud Speaker	Lecture / Group Discussion	Oral Participation
7	2	2	B3, D1	Working with audio outputs, loudspeakers	Lecture / Group Discussion / In Lab exercise	Oral Participation
8	2	2	A1, B1, D1	Digital Audio - Digital Audio - Numbers and Numerals - Digital Audio Processors - Number Space in Binary Number System - Analog Vs Digital Signals - Digital Signal Processing	Lecture / Group Discussion	Oral Participation

8	2	2	B3, D1	Lab: Digitizing audio, Comparing analog and digital audio Editing Audio files	Lecture / Group Discussion / In Lab exercise	Lab Project 1
9	4	4	A1, B1, B3	Audio Effects processors • Role of Effects Processors in Signal Chain • Equalization Filters • Graphic Equalizers • Constant-Q-Equalizers • Compressors and Limiters • Digital Delays • Phasing, Flanging, Chorus, Reverberation Effects • Lab: Understanding Colors	Lecture / Group Discussion	Oral Participation
10	2	2	B3	Lab: Applying effects in edit and multitrack view	Lecture / Group Discussion / In Lab exercise	
11-12	4	4	A1, B1, B3	Designing the Sound System • Design Considerations • Primary system use • Indoor or outdoor • Design model and layout plan • Mixing locations • Front of House Loudspeaker placement • Transformer based distributed Loudspeaker system • Monitor Loudspeaker Placement and Microphone interaction	Lecture / Group Discussion	Major Test

				• Power Amplifier requirements • Ground Loops and induced noise • Sound System Safety issues Lab : Effects reference, amplitude and compression effects		
13	2	2	B1, B3, D1	Microphone Usage • Miking approach • Rules of Microphone usage • Source to Microphone Distance and sound quality • Common Microphone handling issues • Stereo miking techniques	Lecture / Group Discussion / In Lab exercise	Oral Participation
14	4	4	B3, D1	Pre-performance tasks • Preparation • Technical briefing • Equipment Emplacement, Hookup and Power up • System testing • System tuning • Lab: Modulation effects, restoration effects	Lecture / Group Discussion	Lab Project 2
15	2	2	B1,	Performance Tasks	Lecture / Group	Final Project

			B3, D1	• Performance Tasks • Mixing • Refining the Mix • Monitoring the Mix • Taking Notes • Brief Post-Performance tasks Lab: Saving and Exporting the audio files	Discussion	
16	2	2	A1, B1, B3	All Topics	Lecture / Group Discussion / In Lab exercise	Final Exam

Teaching Materials:

Textbook(s)	1. Teddy Boyce (2020), Introduction to Live Sound Reinforcement : The Science, the Art and Practice, FriesenPress, Second Edition, ISBN: 978-1525565090 2. Elena Macfield(2025), Adobe Podcast 2025 & Audition Made Simple
Handout(s)	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s)	1. Karen Collins (2020), Studying Sound: A Theory and Practice of Sound Design, The MIT Press, ISBN: 978-0262044134 2. Francis Rumsey(2021), Sound and Recording: Applications and Theory, 8 th Edition, Routledge Press, ISBN:978-0367553029 3. Lab Manual : https://www.manualslib.com/manual/393301/Adobe-Audition-3.html?page=41#manual .

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	Students will be asked (individually) to use sound editing tools to design sound system. Student's project will be evaluated in lab sessions where students have to justify their choices of the design.	B3, D1	10%
Test (Written)	The test will be a 1 hour that will consists of short-answer, essay, problem-solving for cover the topics studied from week 1 to 11.	A1, B1, B3	30%
Final Project (Report and Presentation)	Students will be asked (individually) to use and apply sound editing to design and develop a new complete project which integrates all sound recording elements, sound effects, sound environment. Pre-performance and performance tasks of a system must be incorporated. A student must submit a report and presentation slides of demonstrating the development process of the project. Students' projects will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B3, D1	20%
Final Exam (Written and Practical)	The final exam is comprehensive of theory and lab, which will be two hours duration. It will consist of short answers, essays, problem-solving and practical questions to do in the lab.	A1, B1, B3	40%
Overall			100%

Admissions

Minimum number of students	5
Maximum number of students	20

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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: ITMS 205

NQF Level Allocated: Level 7

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

Description: The course is intended to introduce the design principles and guidelines and their effective application to real world products or systems requires knowledge of theories and scientific underpinnings. Course covers select theories of fundamental aspects of human perception and cognition and link them with design principles.

Objective:

- To understand key theories and principles of HCI ,UX concepts, UX design guidelines and principles for understanding users and designing user centered solutions.
- To demonstrate UX Lifecycle or Methodology and processes, gathering and analyzing users' needs and requirements.
- To access the universal interaction guidelines, internationalization, cultural dimensions, and cultural diversity in designing UX solutions,
- To provide knowledge with the emerging technologies (e.g., Artificial Intelligence) and UX.

SEMESTER:

ACADEMIC YEAR:

INSTRUCTOR:

OFFICE TEL:

EMAIL:

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: Demonstrate detailed knowledge of the current HCI and UX issues and research	Knowledge: theoretical understanding [Level 7]
A3	Professional Responsibility: N/A	
B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: N/A	
B2	Modeling and Design: Design user interface of variable complexity.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Implement graphical user interfaces with modern software tools.	Knowledge: Practical Application [Level7] Skills: Communication, ICT & Numeracy [Level7]
C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically evaluate the system design and user interfaces.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: N/A	
C3	Creative: Demonstrate creativity to produce a high quality interactive HCI system design from its basic components	Knowledge: Practical Application [Level 7]
D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
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: Work effectively as a member/leader of a team who may plan and design the HCI Project	Autonomy, Responsibility and Context [Level 7]
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	Topics	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Introduction to HCI - User Experience - User Experience Design (UXD) in relation to HCI	Lecture	Oral Inquiry / In-Class Exercises
2-3	4	4	A1, D1	The essentials of user experience design (UXD) - PACT UI Framework - Process of UX Design - Cross Channel UX - Usability - Experience Design	Lecture	Oral Inquiry / In-Class Exercises
4 -5	4	4	A1, A2, C1, D3	HCI Techniques for Designing Interactive systems - Understanding - Envisionment - Design	Lecture/ Lab Demonstration / Supervised Work	In Lab Exercise Assignment 1
6-7	4	4	A1, A2, C1, D3	HCI Techniques for Designing Interactive systems - Task Analysis - Visual Interface Design - Multimodal Interface Design	Lecture/ Lab Demonstration / Supervised Work	In Lab Exercise
8	2	2	A1, B3, C1, C3	Evaluation techniques and Metrics General principles used in Heuristic Evaluation of User Interface Design Measuring the Application usability	Lecture/ Lab Demonstration / Supervised Work	In Lab Exercise

9-10	2	2	A1,B3	HCI in the Context of various interactive systems • Designing Apps and Websites • Social Media interactivity • Collaborative environments • Wearable computing	Lecture/ Lab Demonstration / Supervised Work	In Lab Exercise Test
11	2	2	A1, B2, C1, C3	UX Design • Memory and attention • Affect • Cognition and action • Social interaction • Perception and Navigation	Lecture	In Lab Exercise
12	2	2	A1	Artificial Intelligence and UX Design Introduction AI & UX Parallel Journey Why AI needs UX? AI Enabled Products	Lecture/ Lab Demonstration / Supervised Work	Oral Inquiry
13	2	2	A1, B3,C1, C3	HCI and Emerging Technologies • Voice-Guided User Interface • Chatbots • Virtual/Augmented Reality • Virtual Human	Lecture/Lab Demonstration/Supervised work	In Lab Exercises
14	2	2	B2,B3, D3	UXD: Possible interface design for real-life systems HCI in Industry and Business	Lecture/ Lab Demonstration / Supervised Work	Assignment 2
15	2	2	A2, B2, B3, C1, C3, D1, D2, D3	Student Projects	Project Supervision	Evaluation of Project Presentation and Report
16	2		A1, B2 C1,C3	All Topics		Final Exam

Teaching Materials:

Textbook(s):	David Benyon, (2019) Designing User Experience: A guide to HCI, UX and interaction design, 4 th Edition, Pearson, ISBN:9781292155517 Gavin Lew, Robert M. Schumacher Jr.(2020), AI and UX: Why Artificial Intelligence Needs User Experience, Apress, ISBN: 9781484257746
Handout(s):	Available on http://www.ahlia.edu.bh/moodle .
Reference(s):	Rex Hartson and Pardha Pyla. (2018). The UX Book: Agile UX Design for a Quality User Experience 2nd. Edition. Morgan Kaufman. eBook ISBN: 9780128010624; ISBN: 9780128053423. Rogers, Sharp, and Preece. (2019), Interaction Design: Beyond Human Computer Interaction, John Wiley & Sons. Ben Shneiderman and Catherine Plaisant. (2016), Designing the User Interface, 6 th Edition. Addison Wesley. Prophets Agency. (2013), Trends in Interactive Design http://www.slideshare.net/ProphetsAgency/trends-in-interactive-design-2013 . Norman, D. (2013), The Design of Everyday Things. Revised and Expanded Edition. Basic Books.

Assessment

Method of Assessment	Description	Learning Outcomes	Weighting
Assignment 1	The assignment consists of some short-answer and essay questions on HCI 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, A2, C1, D3	10%
Assignment 2	The assignment consists of some short-answer and essay questions on HCI and UX 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 12th week through the course page in Moodle where answers will be checked by Turnitin against plagiarism.	B2, B3, D3	10%
Project	Students will be asked to do group project (group of 4 – 5 students), use the	A2, B2,	

	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.	B3,C1,C3, D1,D2,D3	20%
Test (Written)	The written test will be an in-class 1-hour test that will consists of short-answer, essay, and problem solving questions and cover the topics studied in the first 9 weeks.	A1, B2, C1, C3	20%
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 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, B2, C1, C3	40%
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
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	Formative
Overall:			100 %

Admissions	
Minimum number of students	5
Maximum number of students	20

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

Course Code & Title: ITMS 305 – Video Production

Weight: (2 - 2 - 3)

Prerequisite: ITMS 212

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 of digital video production. The course moves students from video concepts and processes to production tools and techniques. In addition, a practical, conceptual framework leads students from the idea to the image, onto video.

Objective:

1. To critically understand the concepts and technologies of digital video production.
2. To develop advanced skills in digital video production using professional software capabilities.
3. To design a conceptual framework of the workflow of digital video.
4. To integrate advanced video editing methods and techniques used in modern media.

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 the concepts and technologies of digital video production.	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 user needs to develop the required digital video.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design a scenario of digital video using advanced and specialized techniques.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Apply advanced software capabilities in digital video production.	Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/Level
C1	Analytic skills: Critically evaluate development methods and produced videos in terms of efficiency, clarity, and effects.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic:	NA
C3	Creative Thinking and innovation: Demonstrate creativity in relation to the development of new montage ideas using video editing tools.	Knowledge: Practical Application [Level 7]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/Level
D1	Communication: Demonstrate 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

D4	Ethics and Social Responsibility:	NA
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Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1, D1	Introduction: Production Processes and People - Production Process - Production Team: Who does What When?	Lecture	Oral Participation
2	2	2	B2, B3, D1	The Tools of Digital Video - Open-Source Tools - Consumer Editors - Prosumer Editors Introduction to Video Editing Software	Group Discussion / In Lab exercise	Oral Participation
3	2	2	B2, B3, D1	Digital Video Hardware: Configuring the Workstation - Minimum System Requirements - Data Formats Getting Started with Software Workspace	Group Discussion / In Lab exercise	Oral Participation
4	2	2	A1, B1, B2, D1	Movement in Digital Video: Frames, The 4th Dimension - Frames and Frame Rates - Compression Algorithms - Resolution - Storage - Bitrate and Playback - Digital Video Optimization Create a Project and import a clip	Lecture / Group Discussion	Oral Participation
5	2	2	A1, B1, B2, D1	The Workflow of Digital Video: Capture, Edit,	Lecture / Group Discussion / In	Oral Participation

				Export - Capture - Sharing - Editing Principles Learn Editing skills	Lab exercise	
6	2	2	B2, B3, D1	The Composition of Digital Video: Timeline Editing - Video Track - Titling Work with graphics and titles	Lecture / Group Discussion / In Lab exercise	Lab Project 1
7	2	2	A1, B1, B2, C1, D1	- Transitions - Motion Adjust the timing of your edits	Lecture / Group Discussion / In Lab exercise	Major Test
8	2	2	A1, B1, B2, D1	- Special Effects Add effects	Lecture / Group Discussion / In Lab exercise	Oral Participation
9	2	2	B2, B3	Change the look of your clips	Lecture / Group Discussion	Oral Participation
10-11	4	4	B1, B2, B3, C1, C3	Color Correction - Filters - Options Panel Work with your clips	Lecture / Group Discussion / In Lab exercise	Oral Participation Lab Test
12-13	4	4	A1, B1, B2, B3	The Sound of Digital Video - Audio and Sound Control Work with audio	Lecture / Group Discussion / In Lab exercise	Oral Participation
14	2	2	B2, B3	Publishing Digital Video: Content Delivery Platforms	Lecture / Group Discussion / In Lab exercise	Lab Project 2
15	2	2	B1, B2, B3, C1, C3, D1, D3	Export Video in multiple formats	Lecture / Group Discussion / In Lab exercise	Final Project
16	2	2	A1, B1, B2, B3, C1, C3	All Topics	Lecture / Group Discussion / In Lab exercise	Final Exam

Teaching Materials:

Textbook(s)	1. Wallace Jackson (2016), Digital Video Editing Fundamentals, Apress, ISBN: 9781484218662, 1484218663 2. Maxim Jago (2024), Adobe Premiere Pro CC Classroom in a Book, Adobe Press, ISBN: 978-0138318567
Handout(s)	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s)	1. Herbert Zettl (2016), Video Basics, Cengage Learning, ISBN: 9781337517553, 1337517550 2. Jarle Leirpoll , Dylan Osborn , Paul Murphy , Andy Edwards,(2017), "The Cool Stuff in Premiere Pro", APress, Second Edition, ISBN : 978-1-4842-2889-0 3. Adobe Premiere Pro CC, Classroom in book, Adobe Press, 2014. 4. Adobe Creative team, Adobe Premiere Pro CS6, Classroom in a book, Adobe Press, 2012.

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 Projects	Students will be asked (individually) to use and apply Video Editing Tools to enhance videos or develop new components.	B2, B3	10%
Major Test	The test will be a 1 hour and 20 minutes exam that will consist of short-answer, essay, problem-solving and analysis questions.	A1, B1, B2, C1, D1	15%
Lab Test	Students will be asked to use and apply video editing tools to develop new multimedia components as per specific problems.	B1, B2, B3, C1, C3	15%
Final Project (Report and Presentation)	Students will be asked (individually) to use video editing tools to design and develop a new complete project that integrates the fundamentals of digital video production. A student must submit a report and presentation slides of demonstrating the development process of the project. Students' projects will be evaluated in lab sessions where students must justify their choices of the design.	B1, B2, B3, C1, C3, D1	20%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay, problem-solving and practical 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 313 – Game Development I
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITCS 201 and ITCS 209
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. Explore the rapidly expanding games industry from various perspectives.

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 knowledge 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> : Recognize the current game development issues and research on emerging game development tools.	Knowledge: theoretical understanding [Level 7]
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Identify user requirements in order to develop different kinds of games.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design</u> : Formulate solutions that are evidence-based in designing 2D games.	Knowledge: Practical Application [Level 7]
B3	<u>Application of Methods and Tools</u> : Apply advanced skills and tools of gaming 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> : Critically evaluate 2D games techniques to develop effective and efficient games.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic</u> : NA	
C3	<u>Creative</u> : Demonstrate creativity in developing 2D games.	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 ideas in oral and written form.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership</u> : NA	

D3	<u>Organizational and Developmental Skills:</u> Operate at an advanced level and organize ideas effectively within the allocate time in given assignment or project.	<u>Competence: Autonomy, Responsibility and Context</u> [Level 7]
D4	<u>Ethical and Social Responsibility:</u> NA	

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: Introducing Unity Development Environment - Introducing Game development environment - Introduction to unity software	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: Introducing C# Programming Language - Reading and understanding C#	Lecture/ Lab Demonstration / In-Lab Supervised Work	Oral Participation/ In-Lab Exercises
4	2	2	A1, B1, B3	Game Design Concepts: - The Iterative Process of Design - Innovation - Brainstorming and Ideation - Scoping Lab: Hello World Your First Program	Lecture/ In-Lab Supervised Work	Oral Participation/ In-Lab Exercises

5	2	2	A1, B1, B3	Design Goals: - Designer-Centric goals - Player-Centric goals Lab: Variables and Components - Variables - Unity Variable types - Unity Game objects and components	Lecture/ In-Lab Supervised Work	Oral Participation/ In-Lab Exercises
6	2	2	A1, A2, B1, B2, C1, C3	Paper Prototyping: - Benefits of Paper Prototypes - Example Paper Prototypes - Playtest Questions - Best use of Paper Prototypes Lab: Boolean Operations and Conditions -Booleans -Comparison operators -Conditional Statements	Lecture/ In-Lab Supervised Work	Oral Participation/ In-Lab Exercises Assignment
7	2	2	A1, D1	Guiding the Player: - Methods of Direct guidance - Indirect guidance - Teaching new skills and concepts Lab: Loops - Introduction to Gaming Loops - Types of Loops - Jump statements within loops	Lecture/ In-Lab Supervised Work	Oral Participation
8	2	2	A1, B1,B2, , D3	The Agile Mentality - Why use Agile and Scrum? - Agile Development - Scrum Methodology - The Burndown chart Lab: Lists and arrays - C# Collections - List - Arrays - Multidimensional arrays - Jagged Arrays - Whether to choose array or list	Lecture/ In-Lab Supervised Work	In-Lab Exercises / In-Class Exercises /

9	2	2	A1, B1, B2, C1	Thinking in Digital Systems - Systems Thinking - Exercise in Simple Instructions - Game Analysis Lab: Functions and Parameters	Lecture/ In-Lab Supervised Work	Oral Participation/ Major Test (week 9)
10-11	4	4	B1, B2, B3, C1, C3	Game Testing Lab: Debugging - Getting started with Debugging - Stepping through code with Unity engine	Lecture/ In-Lab Supervised Work	In-Lab Exercises / Lab Test (week 11)
12-13	4	4	A1, A2, B1, B2, C1, C3	Debugging - Summary of Unity C# coding techniques Lab: Debugging Unity C# Coding techniques	Lecture/ In-Lab Supervised Work	In-Lab Exercises
14-15	4	4	B1, B2, B3, C1, C3, D1, D3	Classes in C# Lab : - Game Design using Unity C# - Lists and arrays - Inheritance	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):	Jeremy Gibson Bond (2022), "Introduction to Game Design, Prototyping and Development from Concept to Playable with Unity and C#", Addison Wesley Professional. 3 rd ed., ISBN: 978-0134659802 Anthony Davis, Travis Baptiste, Russell Craig , Ryan Stunkel (2022), "Unity 3D Game Development: Designed for passionate game developers—Engineered to build professional games" Packt Publishing 978-1801076142
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
Lab Test	Students will be asked to use and apply game design tools to develop 2D games.	B1, B2, B3, C1, C3	10%
Assignment	One assignment consist of essay, problem-solving and research based theoretical questions regarding modelling and designing 2D Games. 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 Game Development using Game Mechanics, Aesthetics and Programming.	A1, A2, B1, B2, C1, C3	10%
Major Test	The test will be an in-class 90 minutes exam that will consist of short-answer, essay, and create simple Unity C# script for 2D game development and cover the topics studied in the first 9 weeks.	A1, B1, B2, C1	20%
Project	Student will work as groups of 2-4 members and they will apply the critical knowledge gained to develop a 2D game application which should involve the planning, design and analysis phases.	B1, B2, B3, C1, C3, D1, D3	20%
Final Exam	The final exam is comprehensive and practical will be of two hours duration. It will consist of analysis, design short-answer and problem-solving questions to be done on computers.	A1, B1, B2, C1, C3	40%
In-Lab Exercises	Exercises will help the students in understanding and digesting all the course topics.	B1, B3, C1	Formative
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
Overall			100%

14. Admissions	
Pre-requisites	ITCS 201 and ITCS 209
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 316– Photography Techniques

Weight: (2 - 2 - 3)

Prerequisite: ITMS 201

NQF Level Allocated: Level 7

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

Description: The core of the course will be on photography techniques on camera anatomy, handling cameras, core image development and artistic skills. Students will gain skills in on production of Photographic imagery, finding and composing a photo. Students will learn to publish the photographs on various mediums and get confidence to sale their photography projects.

Objectives:

- To acquire core photography development techniques
- To gain exposure of film and electronic imagery, photography infrastructures
- To understand the photography printing on different medias, publishing on the internet
- To explore the business requirements and selling your picture

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 an understanding of advanced concepts, principles and theories related to photography development techniques.	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research:</u> N/A	N/A
A3	<u>Professional Responsibility:</u> N/A	N/A
B. Subject-Specific Skills		NQF Descriptor/ Level
B1	<u>Problem Solving:</u> N/A	
B2	<u>Modeling and Design:</u> N/A	
B3	<u>Application of Methods and Tools:</u> Apply modern implementation tools to capture and edit photos.	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]
C. Thinking Skills		NQF Descriptor/ Level
C1	<u>Analytic:</u> Analyze the quality of images using the appropriate metrics.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic:</u> N/A	
C3	<u>Creative:</u> N/A	
D. General and Transferable Skills Development)		NQF Descriptor/ Level
D1	<u>Communication:</u> The ability to express and communicate ideas in oral and written form.	Communication, ICT and Numeracy Skills [Level 7]
D2	<u>Teamwork and Leadership:</u> N/A	
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> Demonstrate the ethical skills for building trust with clients and communities for taking photographs and sharing the images.	Competence: Autonomy, Responsibility and context [Level 7]

Course Structure (Outline)

Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Getting Started: • Introduction to Camera • Getting your camera ready • Focusing and Setting the exposure • Taking your picture • Basic Guidelines	Lecture	Oral Participation
2	2	2	A1, B3	CAMERA: • Basic Camera Controls • The Shutter • The Aperture • Choosing a camera : Digital cameras, Film cameras • Keeping the camera steady	Lecture, Lab Demonstration	Oral Participation
3	2	2	A1, B3	LENS: • From Pinhole to Lens • Lens Focal-length: Normal, short, long, Zoom lenses • Special purpose lenses • Focusing your lens: Manual or Automatic • Focus and Depth of Field • Perspective • Guidelines for buying a Lens	Lecture, Lab Demonstration	Oral Participation
4	2	2	A1, B3	Exposure, Sensors and Film: • Exposure Basics • How to Meter • The Histogram • Exposure Latitude and Dynamic Range	Lecture, Exercises, Lab Demonstration	In-Lab Exercises

5	2	2	A1, B3	Exposure, Sensors and Film: • Responding to Light • Selecting and Using Film • Film and Sensor Speed • Using Filters • Extending Beyond visible Light • Using Exposure	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
6	2	2	A1, B3	Light and Color: • Color Photographs : Three Image layers • Color Characteristics • Color Balance • Color Modes and Gamuts • Color Management	Lecture, Exercises, Lab Demonstration	Quiz 1
7	2	2	A1, B3	Developing a Film Negative: • How to process, Black and White Roll film • Step by step processing • How film processing affects your picture • Exposure and Development: Under, Normal, Over	Lecture, Exercises, Lab Demonstration	Oral Participation
8	2	2	A1,B3,C1	Printing in a Dark Room: • Black and White Printing • Step by step processing • Evaluating Density and contrast in a print • Controlling contrast • Dodging and Burning • Spotting to remove minor flows • Archival processing	Lecture, Exercises, Lab Demonstration	Major Test
9	2	2	A1,B3	Basics of Digital Pictures: • Hardware and software • Capturing Details • Photographs are Files: File formats • Channels • Improve your images	Lecture, Exercises, Lab Demonstration	In-Lab Project Part A

10	2	2	B3, C1	Image Editing: • Digital Post Processing • Choosing a software • Image Editing work flow • Adjusting Shape, Color • Adjusting all part of image • Other Editing commands	Lecture, Exercises, Lab Demonstration	In-Lab Exercises
11	2	2	A1, B3	Printing Digitally: • Printers and Printing • Printing Options • Displaying your work : The internet gallery and Resource	Lecture, Exercises, Lab Demonstration	In-Lab Project Part B
12	2	2	A1, B3	Organizing, Storing and Presenting Wok: • Image Storage • Meta Data • Software to keep you organized • Archiving digital images • Archiving films and prints • Mounting a print • Proofing and Printing • Output to paper, Art, online, presenting	Lecture, Exercises, Lab Demonstration	In-Lab Exercises Quiz 2
13	2	2	A1, B3	Lighting: • Direction of light • Degree of Diffusion • Available light-Outdoors • Available light-Indoors • Artificial light • The Main light • The Fill light • Lighting with Flash	Lecture, Exercises, Lab Demonstration	In-Lab Exercises

14	2	2		Buying Guide and Going Further: • Your ideal camera • Camera phones • Choosing lenses • Digital accessories • Electronic lighting • Lighting accessories • Computers, monitors, and printers • Choosing software • Portfolio technique • Building up your business • Mounting an exhibition • Copyright concerns	Lecture	Oral Participation
15	2	2	B3, C1, D1, D3, D4	Student Projects	Project Supervision	Evaluation of Project Presentation and Report
16	-	2	A1, B3, C1	All Topics and Final Programming Project presentations to be given by students.	Discussion, Tutorial	Final Exam

Teaching Materials:

Textbook(s):	1. TomAng(2020), “Digital Photographer's Handbook”, 7 th Edition, DK Penguin Random House Publications, London, ISBN : 978-1465494238. 2. Barbara London(2016), Jim Stone, John Upton, “Photography”, 12th Edition, Pearson Publications, ISBN:978-0134482026;
Handout(s):	Available on http://www.ahlia.edu.bh/moodle .
Reference(s):	1. Michael Freeman(2022) ,“The Photography Bible: All You Need To Know To Take Perfect Photos”, Ilex press, ISBN:978-1781578742 2. Ben Long (2018), Complete Digital Photography: 9th Edition, CDP Press, ISBN:978-1732636927

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	Formative
In-Lab Exercises	Lab exercises cover problem solving questions and help students in mastering the topics.	B3	Formative
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%
Major Test	The test will be for 90 minutes and used to assess students in the topics studied in the first 8 weeks.	A1, B3, C1	20%
In-Lab Project	The In-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' creativity in photography skills on specific task.	B3, C1, D3	10%
Course Project	Starting from week 4, the class will be divided into teams of 3-4 students where each team will be asked to create a project by employing learned photography skills to record situations, events, achievements, nature and its' actions.	B3, C1, D1, D3, D4	20%
Final Exam	The final exam is comprehensive and will be of two hours duration.	A1, B3, C1	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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COLLEGE OF INFORMATION TECHNOLOGY

DEPARTMENT OF MULTIMEDIA SCIENCE

COURSE SYLLABUS/ SPECIFICATION

Course Code & Title: ITMS 317 – Graphic Design II

Weight: (2 - 2 - 3)

Prerequisite: ITMS 207

NQF Level Allocated: Level 7

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

Description: This course helps the student to efficiently develop advanced knowledge in graphic design, print and digital publishing capabilities to pursue design as a professional career. The course involves an integration of advanced design features, tips and techniques coupled with professional software capabilities. The course cover topics about branding and visual identity, advertising, web design and package design to engage and communicate professionally in all media.

Objective:

1. To critically understand the branding and visual identity fundamentals.
2. To cover advanced software capabilities in vector drawing.
3. To integrate advanced design features, tips, and techniques with creative software skills.
4. To develop advanced skills in branding and visual identity creation using professional software capabilities.

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 graphic design, branding, and visual identity and how to create them using the appropriate software.	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: Understand user needs to be considered in the design process for real world problems.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design a brand identity for different media.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: Apply appropriate methods, techniques, and tools used in modern vector graphics.	Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically evaluate the performance of vector graphic solutions and methods to choose the most appropriate one.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic:	NA

C3	Creative Thinking and Innovation: Demonstrate creativity in vector graphics methods and techniques in an effective manner to create new ideas and concepts.	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: Demonstrate the ability to communicate ideas effectively, in written and oral forms.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership:	NA
D3	Organizational and Developmental Skills: Demonstrate ability to organize ideas effectively during the allocated time for assignments and projects.	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, D1	Introduction - Graphic Design Elements and Principles - Analyze Design - Vector Graphics	Lecture	Oral Participation
2	2	2	B2, B3, D1	- Software Basics and Workspace - Techniques for selecting artwork	Group Discussion / In Lab exercise	Oral Participation
3	2	2	A1, B1, B2, D1	Branding and Visual Identity - What is Branding? - Brand, Identity & Logo - Types of Brands - What Makes a Strong Brand Identity?	Lecture / Group Discussion	Oral Participation
4	2	2	A1, B1, B2, B3, D1	- Brand Identity Elements - Brand Identity Types - How to Build a Brand Identity? Editing and combining shapes and paths	Lecture / Group Discussion / In Lab exercise	Oral Participation
5	2	2	A1, B2, B3, D1	Developing a Logo System - Logo Elements - Types of Logos Transforming Artwork and Drawing Tools	Lecture / Group Discussion / In Lab exercise	Oral Participation
6	2	2	A1, B1, B2, C1, D1	- Logo Design Process - Perfecting and Gridding the Logo - Working with	Lecture / Group Discussion / In Lab exercise	Major Test

				Typography Adding Type		
7	2	2	A1, B1, B2, B3, D1	- Working with Color Using Color	Lecture / Group Discussion / In Lab exercise	Oral Participation
8	2	2	B2, B3	Package Design - What is the purpose of Package Design? - Package Design Consideration	Lecture / Group Discussion	Lab Project 1
9-10	4	4	A1, B1, B2, B3, C1, C3, D1	- Sustainability Organizing artwork with layers	Lecture / Group Discussion / In Lab exercise	Oral Participation Lab Test
11-12	4	4	A1, B1, B2, B3, D1	Brand Standards Manual - Brand Standards Examples - Brand Guidelines Manual Gradients, blends, and patterns	Lecture / Group Discussion / In Lab exercise	Oral Participation
13	2	2	B2, B3	Web Design - What do people want and expect from Interactive Experience? - Websites - Website Development Using brushes	Lecture / Group Discussion / In Lab exercise	Lab Project 2
14	4	4	A1, B2, B3, D1	- Conceptual Development and Visual Design - Engaging Content - Mobile Design - Motion Design - Visual Basics for	Lecture / Group Discussion / In Lab exercise	Oral Participation

				Screen-Based Media Creative use of effects and graphic styles		
15	2	2	B1, B2, B3, C1, C3, D1, D3	Advertising - The purpose of Advertising - Who Creates Advertising? - The Role of Storytelling and Story building - Designing Ads - The Ad Campaign - Responsible Advertising and Being Proactive Using Illustrator with other Adobe applications	Lecture / Group Discussion / In Lab exercise	Final Project
16	2	2	A1, B1, B2, B3, C1, C3	All Topics	Lecture / Group Discussion / In Lab exercise	Final Exam

Teaching Materials:

Textbook(s)	1. Joyce Walsh (2020), Graphic Design Essentials, Bloomsbury Publishing, ISBN: 9781350075078, 1350075078 2. Robin Landa (2018), Graphic Design Solutions, CENGAGE Learning Custom Publishing, ISBN: 9781337671064, 1337671061 3. Brian Wood (2024), Adobe Illustrator Classroom in a Book, Adobe Press, ISBN: 978-0138263829
Handout(s)	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s)	1. David Dabner, Sandra Stewart, Abbie Vickress (2017), Graphic Design School, Wiley, ISBN: 9781119343165, 111934316X 2. David Karlins (2020), "Adobe Illustrator CC For Dummies" , John Wiley & Sons, ISBN: 978-1-119-64153-7 3. Jason Hoppe, (2020), "Adobe Illustrator: A Complete Course and Compendium of Features", Rocky Nook Inc, 1st Edition, ISBN: 978-1-68198-531-2 4. Brian Wood, Adobe Illustrator CC Classroom in a book, Adobe Press, 2014,ISBN: 978-0-13-390565-6 5. Adobe Creative team, Adobe Illustrator CS6, Classroom in book, Adobe Press, 2012.

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 Projects	Students will be asked (individually) to use vector editing tools to design some brand identity elements.	B2, B3	10%
Major Test	The test will be a 1 hour and 20 minutes exam that will consists of short-answer, essay, problem-solving and analysis questions.	A1, B1, B2, C1, D1	15%
Lab Test	Students will be asked too use and apply vector editing tools to develop brand identity elements as per specific problems.	B1, B2, B3, C1, C3	15%
Final Project (Report and Presentation)	Students will be asked (individually) to use vector editing tools to design and develop a new complete project that integrates some brand identity elements. A student has to submit a report and presentation slides of demonstrating the development process of the project. Students projects will be evaluated in lab sessions where students have to justify their choices of the design.	B1, B2, B3, C1, C3, D1, D3	20%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay, problem-solving and practical questions.	A1, B1, B2, B3, C1, C3	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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

Course Code & Title: ITMS 321– Electronic Media and Law

Weight: (3 - 0 - 3)

Prerequisite: ITMS 201

NQF Level Allocated: Level 7

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

Description: This course overviews the major legal and regulatory issues related to the electronic media issues happening. Students will learn how to avoid common legal pitfalls and anticipate situations that may have potential legal consequences. Students can critically examine the legal issues related to copyright, patent, telecommunication, and electronic defamation cases.

Objectives:

- To highlight the professional legal issues related to electronic media.
- To critically evaluate the electronic media usage in social media platforms related to online publication, blogs, digital marketing etc.
- To examine the relevant professional code of conduct within issues and controversies commonly faced by people on electronic media usage and production.

Semester:

Academic Year:

Instructor:

Office Tel:

Email:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories: Demonstrate advanced knowledge and understanding of social and law concepts that relate to the electronic media.	Knowledge: theoretical understanding [Level 7]
A2	Contemporary Trends, Problems and Research: Demonstrate an understanding of the legal issues arising in the digital media.	Knowledge: theoretical understanding [Level 7]
A3	Professional Responsibility: Demonstrate the ability to examine and apply the professional standards of code of ethics in relation to media standards.	Knowledge: theoretical understanding [Level 7]

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: N/A	
B2	Modeling and Design: N/A	
B3	Application of Methods and Tools: N/A	

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Analyze and evaluate the social and law implications of certain actions within the electronic media field.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic: NA	
C3	Creative: Demonstrate originality in the creation of innovative solutions for legal issues.	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: NA	
D2	Teamwork and Leadership: Develop an experience of leadership and teamwork by working effectively as a team member or act as an effective leader to other team members.	Competence: Autonomy, Responsibility and Context [Level 7]

D3	Organizational and Developmental Skills: NA	
D4	Ethical and Social Responsibility: Make ethical and professional judgements in the profession of computing and the delivery of its services.	Competence: Autonomy, Responsibility and Context [Level 7]

Course Structure (Outline)

Week	Hours		ILOs	Unit/Module or Topic Title	Teaching Method	Assessment Method
	Lecture	Lab				
1	2	2	A1	Introduction to Legal System: - The meaning of Law - Sources of Law - The structure of court systems - Types of Law	Lecture/ Class Discussion	Oral Participation
2	2	2	A1, C1	Freedom of Expression: - The first amendment - The first amendment's purpose - Expanding the meaning of the first amendment - Limitations on Protection - No Compelled speech	Lecture/ Debate/ Case studies	Class Discussion
3	2	2	A1, C1	Telecommunications Regulations: - A Bird's Eye View - Establishing a Regulatory framework - Broadcast regulation - Media Ownership Rules - Multi-channel video program distributors - Phone companies	Lecture/ Debate	Quiz1
4	2	2	A1	Internet Regulation: - ICANN, the Internet's Manager - Network Neutrality - Voice Over Internet Protocol - eAccessibility - Cybercrime - Internet Gambling - Virtual Law	Lecture/ Class Discussion	Case Studies

5	2	2	A2, A3, C1, C3, D2, D4	Conflict of Laws: • Jurisdiction, Choice of Law • Private International Law • Choice of Forum/Choice of Law agreements • Treaties on Jurisdiction and Choice of Law • Alternative Dispute Resolution	Lecture/ Debate	Assignment 1
6	2	2	A1, C1	Information Gathering: • Access to information • State Freedom of Information laws • Access to Public Officials • Access to Legislative information • Access to Judicial information • Protection of Information	Lecture/ Class Discussion	Class Discussion
7	2	2	A1,A2,A3, C1	Intellectual Property: Copyright • Source and Purpose of Intellectual property Protection • What can be/can not be copyrighted? • Copyright holders exclusive rights • Registering and protecting works • What is copyright infringement? • Digital Millennium Copyright act • Remedies for Copyright infringement? • Balancing the rights of copyright owners and users • The creative commons	Lecture/ Debate/ Case studies	Case studies
8	4	4	A1,C1	Intellectual Property: Patents, Trademarks and Trade Secrets • Patents • Trademarks • Cybersquatting • Trade Secrets	Lecture/ Class Discussion	Quiz-2
9	2	2	A1, C1	Defamation: • What is Defamation? • Type of Defamation • Who can be defamed? • Elements of Libel • Defenses to Libel	Lecture/ Class Discussion/ Case Studies	Case Studies

10	2	2	A1, A2, A3, C1	Defamation: • Mitigation of damages • How has defamation changed? • The single publication rule • Statutes of Limitation • Criminal Libel • Nontraditional Media and Non-Media Defendants • Immunity for Interactive Computer Services • Photo Illustration • Digitally Altering Images • Intentional Infliction of	Lecture/ Class Discussion	Major test
11	2	2	A1, C1	Invasion of Privacy: • Whose privacy is protected? • Constitutional Protections for Privacy • Privacy Protection Under Common Law • Privacy and Social networking • Anonymity online • Government Surveillance	Lecture/ Class Discussion	Class Discussion
12	2	2	A1, A3, C1	Sex and Violence: • Obesity and Indecency • Regulation of Indecency and Material harmful to Minors • Violence • Incitement to Violence • Threats • Hate Speech	Lecture/ Debate / Case studies	Class Discussion
13	2	2	A1, A3, C1	Commercial Speech and Antitrust law: • Commercial Speech • Advertising and First Amendment Protection • Regulation of Unfair Advertising • FTC Advertising Guidelines	Lecture/ Debate / Case studies /	Case Studies
14	2	2	A2, A3, C1, C3, D2, D4	Commercial Speech and Antitrust law: • False Advertising and State Law • Advertising to Children • Marketing Instructions, public relations • Antitrust law	Class Discussion	Assignment 2

15	2	2	C1, C2, D2, D3	Revision	Class Discussion	
16	-	2	A1, A2, A3, C1, C3	All Topics and Final Programming Project presentations to be given by students.	Discussion, Tutorial	Final Exam

Teaching Materials:

Textbook(s):	1. W. Wat Hopkins (2025), “Communication and the Law: 2025 Edition”, Vision Press Publisher, ISBN : 978-1885219978. 2. Kenneth C. Creech (2013), “Electronic Media Law and Regulation”, 6th Edition, Routledge Publications, ISBN: 978-0415518086;
Handout(s):	Available on http://www.ahlia.edu.bh/moodle .
Reference(s):	1. Roger L. Sadler (2005) ,“Electronic Media Law”, 1st Edition, SAGE Publications, Inc, ISBN: 978-1412905886 2. Ian Walden (2018), “Telecommunications Law and Regulation”, 5th Edition, Oxford University Press, ISBN:978-0198807414

Assessments:

Assessment Method	Description	ILOs	Weight
Major Exam	The Major Exam is a 90 minutes in-class exam that covers the topics studied in the first 8 weeks.	A1, A2, A3, C1	20%
Assignments	Two assignments are given to students; each is weighed 15% of marks and all are summed up to a total of 30% of the student final mark. Reports should be submitted through Turnitin on Moodle.	A2, A3, C1, C3, D2, D4	30%
Quizzes	Two 30-minutes in class quizzes, each is weighted 5 marks. To assess knowledge and critical thinking skills.	A1, C1	10%
Final Exam	Two hours closed book final exam is given to students. It is to encourage the development of creative solutions to the ethical issues/scenarios addressed in the exam.	A1, A2, A3, 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 335: Web Programming I
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITMS 205

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, Web Programming, General Software Development and life cycle, Web Applications, Desktop Applications. This course will enable the students to build ASP .NET web applications components such as user Interface by Using HTML and CSS, Validate the pages using Javascript and JQuery and integrating AJAX for improving the response.

OBJECTIVES:

1. Understand Web Programming, Object-Oriented Programming & General Software Development Life cycle.
2. Build the User Interface by Using HTML, CSS and Javascript and validate User Interface by using Javascript and JQuery.
3. To gain the different techniques of designing and developing entire website using Javascript, JQuery and AJAX.

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 web -based systems.	Knowledge: theoretical understanding [Level 7]
A2	<u>Contemporary Trends, Problems and Research</u> : Recognize the current computing issues and research on emerging Web technologies.	Knowledge: theoretical understanding [Level 7]
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Identify user needs to develop web-based systems.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design</u> : Design the architecture of web-based systems 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 tools that assist for developing web-based systems.	Knowledge: Practical Application [Level 7] Communication, ICT and Numeracy Skills [Level 7]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically evaluate the various techniques and methods used to develop web-based system.	Generic Problem Solving & Analytical skills [Level 7]
C2	<u>Synthetic</u> : NA	
C3	<u>Creative Thinking and innovation</u> : <i>Demonstrate creativity</i> 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> : <i>Use advanced skills</i> 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)						
Wee k	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	B2,C1	Understanding Web Applications Development Lifecycle and Databases	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1	Overview of the Asp .Net MVC: • Role of Model, View, Controller • How MVC works • Benefits of using ASP .NET MVC	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry* In-Lab Exercise
5	2	2	A1, A2, B1, B2, D1	Asp.Net MVC Architecture	Lab Demonstration/ Supervised Work	Assignment 1
6-7	4	4	A1, B2, B3,C3, D1	Getting Started with MVC and its Action Result type: • Understanding the structure of an ASP.NET MVC project • Creating views • Defining controllers • Defining a data model • Overview of coding standards follows during	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

				programming Types of Action Result in MVC		
8	2	2	B2,B3,D1	Web App responsive with Bootstrap: - Responsive web app design - Client side libraries Bootstrap and JQuery	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
9	2	2	A1,B1,B2,C1	- Bootstrap components - Work with Bootstrap navigation bars	Lecture/ Lab Demonstration/ Supervised Work	Major Test
10-11	4	4	A1,A2, B1, B2,D1	JQuery,: - Introduction - JQuery Selectors - JQuery Event Methods - Using post and get methods in jquery	Lecture/ Lab Demonstration/ Supervised Work	Assignment 2
12-13	4	4	A1, B1,B2,C1	AJAX: Overview of AJAX AJAX components XML HttpRequest Object Ajax Events Using AJAX Action Links	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercises
14	2	2	B3,C1,C3	Integrating Javascript, JQuery, Ajax with ASP .NET MVC application	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercises
15	2	2	B1,B2,B3,C1,C3, D1,D3	Student Projects	Project Supervision	Evaluation of Project Presentation and Report
16	-	2	A1, B1,B2, B3, C1,C3	All Topics and Final Programming Project presentations to be given by students.	Discussion, Tutorial	Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	• Murach ,Joel , Delamater Mary (2022) , “ASP.NET Core MVC”, 2nd Edition, Mike Murach & Associates Publications, ISBN : 978-1943873029 • Murach's JavaScript and jQuery (4th Edition) BY Mary Delamater, Zak Ruvalcaba. PUBLICATION; Mike Murach & Associates; 4th edition (August 26, 2020). ISBN; 978-1943872626. • Software Development Fundamentals, Microsoft Official Academic Course, 2018, ISBN: 978-1-118-02687-8
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	1.) Responsive Web Design with HTML5 and CSS: Develop future-proof responsive websites using the latest HTML5 and CSS techniques, 3rd Edition by Ben Frain. Publication: Packt Publishing (April 30, 2020). ISBN 978-1839211560 .

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
Assignments	Two assignments consist of some short-answer and essay questions covered on scripting concepts and theories covered in class. Soft copy submission is required by the end of the 5 th week and 12 th week through the course page in Moodle where answers will be checked by Turnitin against plagiarism. (Average will be taken.)	A1,A2, B1, B2,D1	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	20%
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 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 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 341 - Digital Marketing Technologies

WEIGHT: (2 - 2 - 3)

PREREQUISITE: ITMS 205

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> Identify real world marketing problems to be solved by digital marketing components.	Knowledge: Practical Application [Level 7]
B2	<u>Modeling and Design:</u> 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 advanced skills, techniques, and tools to create and manage digital marketing components.	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 existing</i> digital marketing techniques and components to make the appropriate marketing decision.	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. • Introduction of the digital marketing • Digital vs. Real Marketing • Digital Marketing Channels	Lecture, Class Discussion,	-
2	2	2	A1, B3	• Creating initial digital marketing plan • Content management • SWOT analysis	Lecture, Laboratory	Oral Participation
3	2	2	A1, B3	• Web design • Optimization of Web sites • MS Expression Web	Lecture, Laboratory	Oral Participation
4	2	2	B1, B2 B3, C1	• SEO Optimization • Writing the SEO content	Lecture, Laboratory	Lab Project 1
5	2	2	A1, B3,D1	• Google AdWords- creating accounts • Google AdWords- types	Lecture, Laboratory	Oral Participation
6	2	2	A1, B1, B3 D1, D3	• Introduction to CRM • CRM platform • CRM models	Lecture, Laboratory	Oral Participation
7	2	2	A1, B3	• 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	• Creating a Facebook page • Visual identity of a Facebook page • Types of publications	Lecture, Laboratory	Oral Participation
9	2	2	A1, B3	• Business opportunities and Instagram options • Optimization of Instagram profiles	Lecture, Laboratory	Major Exam
10	2	2	A1, B3	• Integrating Instagram with a Web Site and other social networks • Keeping up with posts	Lecture, Laboratory	Oral Participation
11	2	2	B1, B2 B3, C1	• 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	• Creating business accounts on YouTube • YouTube Advertising • YouTube Analytics • Facebook Ads • Creating Facebook Ads • Ads Visibility	Lecture, Laboratory	Oral Participation
13	2	2	A1, B3	E-mail marketing • E-mail marketing plan • E-mail marketing campaign analysis Mobile Marketing • Mobile Market size and growth • Mobile – Web • Mobile Marketing – a game changing channel	Lecture, Laboratory	Oral Participation
14	2	2	A1, B3	Digital Marketing Budgeting: • 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. (2019). Understanding Digital Marketing: Marketing Strategies for Engaging the Digital Generation, 4th Edition, Kogan Page Limited. ISBN: 9780749478438 , 9780749471033
 2. Dave Chaffey, Fiona Ellis-Chadwick, Majd Abed-Rabbo, “Digital Marketing” 9th Edition, Pearson ISBN: 978-1292738086

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

- REFERENCE(S):**
1. SOCIAL MEDIA MARKETING FOR BEGINNERS 2021: Beyond 2020! Become Skilled Influencer Using Strategies, Content Creations, Essential Tips&Tricks to Win On Facebook, Instagram, Twitter, Youtube, And More. by Allan Miller, Donald Bryer. Publication: Independently published (October 7, 2020). ISBN 979-8694750714.
 2. Santino Spencer (2023), Mobile Marketing: 7 Easy Steps to Master Mobile Strategy, Mobile Advertising, App Marketing & Location Based Marketing, Santino Spencer Publishers
 3. Ian Dodson (2016) “The Art of Digital Marketing: The Definitive Guide to Creating Strategic, Targeted, and Measurable Online Campaigns”, , Wiley; 1 edition, ISBN : 9781119265702
 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	10%
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	10%
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 to use a structured and disciplined approach to develop a digital marketing project. Each student starts by choosing a theme 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	20%
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, B3,D1	Formative
Overall			100%

13. Admissions	
Pre-requisites	ITMS 205

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 347 – Video Post-Production

Weight: (2 - 2 - 3)

Prerequisite: ITMS 305

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(s):

Office Telephone:

Email:

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 video post-production.	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 to solve them by designing efficient and effective video post-production films.	Knowledge: Practical Application [Level 7]
B2	Modeling and Design: Design the scenario of video post-production film by choosing appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 7]
B3	Application of Methods and Tools: 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] Communication, ICT and Numeracy Skills [Level 7]

C. Thinking Skills		NQF Descriptor/ Level
C1	Analytic: Critically analyze a video post-production film to remodel part/some/all objects found within the film.	Generic Problem Solving & Analytical skills [Level 7]
C2	Synthetic:	NA
C3	Creative: 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	Communication: Show ability to communicate information in appropriate oral and written forms.	Communication, ICT and Numeracy Skills [Level 6]
D2	Teamwork and Leadership:	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	Ethical and Social Responsibility:	NA

Course Structure (Outline)

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1, D1	Introduction	Lecture	-
2	2	2	A1, B1, B2, B3, C1, C3	Video Editing Techniques	Lecture/ lab Demonstration	Oral Participation
3	2	2	A1, B1, B2, B3, C1, C3	Principles of Continuity Editing	Lecture/ lab Demonstration	Oral Participation
4	2	2	A1, D1	Parallel Editing	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
5	2	2	A1, B1, B2, B3, C1, C3, D3	Sound Design / Sound Mixing	Lecture/ Lab Demonstration/ Supervised Work	Assignment
6	-	4	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	Oral Participation
8	-	4	B1, B2, B3, C1, C3	Advanced Motion Graphics Techniques	Lab Demonstration/ Supervised Work	Oral Participation
9	2	2	A1, B1, B2, B3, C1, C3	Editing for Documentary	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
10	2	2	A1, B1, B2, C1	Exploring Compositing Techniques	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1, B1, B2, B3,	Compositing in	Lecture/ Lab Demonstration/	Assignment

			C1, C3, D3	Motion 1	Supervised Work	
12	2	2	A1, B1, B2, B3, C1, C3, D1	Compositing in Motion 2	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
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	Oral Participation
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. Lisa Fridsma and Brie Gyncild (2024), "Adobe After Effects Classroom in a Book 2024 Release 1st Edition", Adobe Press, 2024 ,1st Edition, ISBN: 978-0138316488 2. LISA FRIDSMA, Brie Gyncild (2020), Adobe After Effects Classroom in a Book, 1st Edition, Adobe Press, ISBN: 978-0136411871
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s):	1. Brahanya Somasundaram, Shridevi Subramanian (2019) "Semantic Video Segmentation and retrieval system", 1ST ED. LAP LAMBERT Academic Publishing ISBN: 978-6200241696 2. David Dodds (2019), "Hands-On Motion Graphics with Adobe After Effects CC", Packt Publishing, ISBN : 978-1-78934-515-5 3. Barbara Clark, Susan J.Spoehr, Dawn Higginbotham, Kumari Bakhru(2019), "The Guide to Managing Postproduction for Film, TV, and Digital Distribution", A focal Press Book, Taylor & Francis, 3rd Edition , ISBN: 978-1-138-48277-7

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, D1	Formative
Assignment	The assignments 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	20%
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 video post-production. Students work will be observed and evaluated directly during the lab sessions.	B1, B2, B3, C1, C3	10%
Final Project (Report and Presentation)	Starting from week 4, each student will be asked to composite a short film.	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%
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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 418 – Computer Animation I
Weight: (2 – 2 - 3)
Prerequisite: ITMS 317
NQF Level Allocated: Level 8

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

Description: Students will learn the theory and concepts of computer animation, also the course is to develop observational and design skills in computer animation. To narrate a story, students will apply computer-generated lighting, background, mask, tweened animations, etc. Computer animation production techniques along with programming techniques are used to create animation projects in this course.

Objectives:

1. To critically explore the knowledge on computer animation systems
2. To develop problem-solving skills pertains to computer animation systems.
3. To apply the different advanced techniques of animations within multimedia applications
4. To produce efficient animation systems using storyboarding, production and programming techniques.

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 computer animation.	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 user requirements to consider them in designing efficient and effective animation application.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the architecture of computer animation 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 tools that assist in the creation of animation applications.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically evaluate animation products and components in terms of user interactivity and efficiency.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic:	NA
C3	Creative Thinking and Innovation: Demonstrate creativity in relation to the development of new design ideas.	Generic Problem Solving & Analytical skills [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	2	2	A1	Introduction • Animation Techniques	Lecture	Oral Participation
2	2	2	A1, B3	• Landmark examples of computer animation. • Software Basics + Workspace • The Animate drawing tools	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	A1, B1, B2, B3, C1, C3	Types of Animation • cel (or traditional) animation • CGI animation • Motion Graphics • Stop Motion Animation • Create a symbol • Animating with a classic motion tween	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	B1, B2, B3, C1, C3	• Types of symbols • How to create Movie Clips in Adobe Animate • Creating and transforming gradients	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5	2	2	A1, B1, B2, B3, C1, C3	Animation Basics in Adobe Animate • frame rates • Frames and Keyframe • Shape Tweening • onion skinning • Motion Guide • motion tween animation	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

6	2	2	B1, B2, B3, C1, C3	• Creating lightning and importing bitmaps • Working with Audio • Animating with Asset Warp	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
7	2	2	B1, B2, B3, C1, C3, D1, D3	• Using vector brushes and gradients • Using symbols and advanced layers • Using motion tweens and motion preset • Adding sound • Animating with the Camera tool • Layer Effects and Parenting	Lecture/ Lab Demonstration/ Supervised Work	Assignment 1
8	2	2	A1, B1, B2, C1	Animate Platforms & Interactivity • Platform Types • ActionScript	Lecture/ Lab Demonstration/ Supervised Work	Major Test
9	2	2	A1, B1, B2, B3, C1, C3	• Import a Photoshop file in Animate • Use the Parenting View to link layers • Export your video as an MP4	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
10	2	2	A1, B1, B3, C1, C3	• Using HTML5 components • Using the Actions Wizard • animated infographic	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
11	2	2	B1, B2, B3, C1, C3, D1, D3	• HTML 5 expandable banner • Action Script and Button Symbol • WebGL, VR Panoramic and 360 content	Lecture/ Lab Demonstration/ Supervised Work	Assignment 2

12	2	2	A1, B1, B2, B3, C1, C3, D1	Animation Principles and Development • Camera • Lip Sync	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
13	2	2	A1, B1, B2, B3, C1, C3	Storyboarding • Popular storyboarding software	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1, B1, B2, B3, C1, C3	Publishing • Export your video as an MP4 • Exporting to various formats	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	All Topics		Final Exam

Teaching Materials:

Textbook(s):	1. Russell Chun (2024), "Adobe Animate Classroom in a Book 2024 Release 1st Edition", Adobe Press, 1st Edition, ISBN : 978-0138317713 2. Tony White (2022), "Animation Masterclasses: From Pencils to Pixels", CRC Press, 1st Edition, ISBN 9781032345864. 3. Russell Chun (2020),"Adobe Animate Classroom in a Book", Adobe Press, 1st Edition, ISBN:978-0136449331
Handout(s):	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s):	1. Joseph Labrecque, Ajay Shukla (2021),"Mastering Adobe Animate 2021: Explore professional techniques and best practices to design vivid animations and interactive content", Packt Publishing, 1st Edition, ISBN : 978-1-80107-416-2 2. Russell Chun (2017), "Adobe Animate CC Classroom in a Book (2017 Release)", ADOBE PRESS, ISBN: 978-0134665238

Assessment

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	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 multimedia application. Students work will be observed and evaluated directly during the lab sessions.	B1, B2, B3, C1, C3	Formative
Assignments	Two assignments consist of problem-solving, and research based theoretical questions. The purpose of the assignments is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of animation applications.	B1, B2, B3, C1, C3, D1, D3	20%
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	20%
Final Project (Report and Presentation)	Starting from week 4, each student will be asked to develop an animation application. The report must be submitted on Moodle.	B1, B2, B3, C1, C3, D1, D3	20%
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	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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

Course 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:

The course focuses on using Angular and ASP.NET EF Core technologies to implement programming logic, define and use model, view and control the classes, connect with database, and create well-structured web application. This course enables the students to design, build robust full stack web development using Angular, Asp .NET and database.

Objectives:

1. To understand specialized theories, principles and concepts for developing web-based applications.
2. To design the architecture of advanced web applications using appropriate components and models that fulfil user specifications.
3. To apply specialized level of skills to solve real life problems.
4. To use advanced frameworks and tools to develop Web applications.

SEMESTER:

ACADEMIC

YEAR: INSTRUCTOR:

OFFICE

TEL:

EMAIL:

Intended Learning Outcomes (ILOS)

A. Knowledge and Understanding		NQF Descriptor/Level
A1	Concepts and Theories: Demonstrate critical knowledge and understanding of some specialized theories, principles and concepts of Web-Based Systems and specifically dynamic websites.	Knowledge: theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: Recognize the current computing issues and research on emerging Web technologies.	Knowledge: theoretical understanding [Level 8]
A3	Professional Responsibility:	NA

B. Subject-Specific Skills		NQF Descriptor/Level
B1	Problem Solving: Identify advanced and complex situations in order to solve real world problems.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the architecture of specialized systems with appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	Application of Methods and Tools: Apply specialized tools to plan and undertake Web applications.	Knowledge: Practical Application [Level 8] Communication, ICT and Numeracy Skills [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	Analytic: Critically analyze various design components and frameworks to recommend suitable solutions.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic:	NA
C3	Creative: Demonstrate insights and creativity while designing Web applications.	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (Other Skills Relevant to Employability and Personal Development)		NQF Descriptor/Level
D1	Communication: Use special skills to communicate the technical information in appropriate oral and written forms to a variety of audiences.	Communication, ICT and Numeracy Skills [Level 8]
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 8]
D4	Ethical and Social Responsibility:	NA

Course Structure (Outline)

Course Structure (Outline)						
Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	4	-	A1	Overview of ASP .NET Core MVC Framework	Lecture	-
2	2	2	B1, B2, B3, C1, C3, D1	Full Stack Development Approach: Multipage Applications(MPA) Singlepage Applications (SPA) Progressive web applications Native web applications Architecture overview Lab: Preparing the workspace, Node.js and Angular CLI setup	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	B1, B2, B3, C1, C3, D1	Angular: Terminology, MVC (Model View Controller), Controller, Directives and Services Lab: Angular Frontend Services	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
4	2	2	B1, B2, B3, C1, C3, D1	Angular: Factories, Filters Lab: Angular factory : Container Class and functions	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
5-6	4	4	A1, A2, B1, B2, B3, C1, C3	Asp .Net Backend - Configuration files - Controller files - Connecting with open API Angular Frontend - Root files - Connection with standard two	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise Assignment 1

				way Lab: Angular and ASP .net front end back end connectivity		
7	2	2	B1, B2, B3, C1, C3, D1	Front and back end interactions: - ASP .net Core health checks - Adding an Internet control Message Protocol (ICMP) - Healthchecks in Angular Lab: Asp .net and Angular healthchecks	Lab Demonstration/ Supervised Work	In-Lab Exercise
8	2	2	B1, B2, B3, C1, C3, D1	Restyling the UI - Angular Material - MatTool - Integrating CSS Lab: UI styling using Angular Material and CSS	Lab Demonstration/ Supervised Work	In-Lab Exercise
9-10	4	4	A1, B1, B2, C1	Forms with Angular Framework Lab: Angular Interactive forms with simple validation	Lab Demonstration/ Supervised Work	Major Test
11-12	4	4	A1, A2, B1, B2, B3, C1, C3	Develop Data Driven MVC Web App - Use EF Core - Work with Data - Work with DbContext Class - Make user friendly URLs Lab: Web App for Index view, Controller, Edit and delete view	Lab Demonstration/ Supervised Work	In-Lab Exercise Assignment 2
13-14	4	4	A1, A2, B3, D1	Fetching and Displaying data - Requests and responses - Serving data with Angular material - Clientside paging - Serverside paging Lab: Fetching and Display using	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry *

				AngularMaterial		
15	2	2	B1, B2, B3, C1, C3, D1, D3	Student Projects	Project Supervision	Evaluation of Project Presentation and Report
16	2	2	A1, B1, B2, B3, C1, C3	All Topics	Discussion	Final Exam

Teaching Materials:

Textbook(s):	1. Valero De Sanctis (2022), ASP.NET Core 8 and Angular: Full-stack web development with ASP.NET 8 and Angular, 6th Edition, ISBN: 978-1805129936, Packt Publishing 2. Murach ,Joel , Delamater Mary (2022) , “ASP.NET Core MVC”, 2nd Edition, Mike Murach & Associates Publications, ISBN : 978-1943873029
Handout(s):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
Reference(s):	1. Coding with AngularJS For Dummies: Introduction to Developing Web Applications with AngularJS, Alexander Aronowitz, 2020, ISBN:979-8686191662 2. Mary Delamater,Zak Ruvalcaba (2020), "Murach's JavaScript and jQuery", Mike Murach & Associates, Inc, 4th Edition ISBN-13: 978-1943872626 3. Ben Frain (2020), "Responsive Web Design with HTML5 and CSS: Develop future-proof responsive websites using the latest HTML5 and CSS techniques", Packt Publishing; 3rd edition ISBN:978-1-83921-156-0 4. Dino Esposito, “Modern Web Development: Understanding domains, technologies, and user experience (Developer Reference)”, Microsoft Press, 2016, ISBN: 978-1509300013

Certification: Angular Certification: Level 1 and Level 2

<https://www.angulartraining.com/angular-certification.html> [accessed on 21-07-2023]

Assessments:

Type of Assessment	Description	ILOs	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
Assignments	Two assignments consist of essay, problem-solving and research based theoretical questions regarding topics in Dot NET and client object. 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 Angular, Asp .NET , Data driven with EF core.	A1, A2, B1, B2, B3, C1, C3	10%
Major Test	The test will be an in-class 90 minutes 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	Student will work as groups of 2-4 members and they will apply the critical knowledge gained to develop a real world Web application project which should involve the planning, design and analysis phases.	B1, B2, B3, C1, C3, D1, D3	20%
Final Exam	The final exam is comprehensive and practical will be of two hours duration. It will consist of analysis, design short-answer and problem-solving questions to be done on computers.	A1, B1, B2, B3, C1, C3	40%
Overall			100%

Admissions	
Minimum number of students	8

Maximum number of students	20
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COLLEGE OF INFORMATION TECHNOLOGY
DEPARTMENT OF MULTIMEDIA SCIENCE
COURSE SYLLABUS/ SPECIFICATION

Course Code & Title:	ITMS 428 – 3D Design
Weight:	(2 - 2 - 3)
Prerequisite:	ITMS 317
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 terminologies of 3D computer graphics. 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 development process including, modeling, rendering, and animation.

Objective:

1. To critically understand the basic concepts and terminologies of 3D computer graphic design.
2. To acquire the foundation of 3D development and animation using advanced software capabilities.
3. To gain different techniques of modeling, texturing, applying lights and rendering objects in 3D.

Semester:

Year:

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 terminologies related to 3D graphic design.	Knowledge: theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: Recognize the current 3D graphic design issues and research on emerging 3D graphic design applications.	Knowledge: theoretical understanding [Level 8]
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 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 3D graphics projects.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT and Numeracy Skills [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically analyze 3D Scenes in different viewports within 3D software to 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 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 assignments and projects.	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	4	0	A1	Introduction - What is 3D art? How does it work? - Rendering, lighting, and materials - Animation	Lecture	Oral Participation
2	4	0	A1, B3, C1, D1	Understanding 3D Space and 3D project management	Lecture/ lab Demonstration	Oral Participation
3	2	2	A1, B1, B2, B3, C1, C3	Getting Started - Exploring Interface - Controlling and Configuring the Viewports	Lecture/ lab Demonstration	Oral Participation
4	2	2	A1, B1, B2, B3, C1, C3	- Working with Files, Importing, and Exporting	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
5	2	2	A1, B1, B2, B3, C1, C3, D3	Manipulating Objects - Creating and Editing Primitives and Selecting Objects - Transforming Objects, Pivoting, Aligning, and snapping	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
6	2	2	A1, B1, B2, B3, C1, C3	- Cloning Objects and Creating Object Arrays	Lab Demonstration/	Oral Participation

				- Grouping, Linking, and Parenting Objects	Supervised Work	
7	2	2	A2, B1, B2, B3, C1, C3, D3	- Organizing Scenes with Layers, Containers, and XRefs	Lecture/ Lab Demonstration/ Supervised Work	Assignment 1
8	2	2	A1, B1, B2, B3, C1, C3	Modeling 3D Assets - Accessing Subobjects and Modifiers and Using the Modifier Stack - Drawing and Editing 2D Spines and Shapes	Lab Demonstration/ Supervised Work	Oral Participation
9	2	2	A1, B3, C1, D1	- Modeling with Polygons - Using the Graphite Modeling Tools and Painting with Objects	Lecture/ Lab Demonstration/ Supervised Work	Major Test
10	2	2	A1, B1, B2, C1	- Working with Compound Objects - Using Mesh Modifiers and Deforming Surfaces	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
11	2	2	A1, B1, B2, B3, C1, C3, D3	Applying Materials and Textures - Creating and Applying Materials with Slate Material Editor - Adding Material - Creating Compound Materials and Using Material	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation

				Modifiers		
12	2	2	A2, B1, B2, B3, C1, C3	Setting the Scene: Cameras, Light, and Rendering - Configuring Camera and Environments - Using Lights and Basic Lighting Techniques - Rendering a Scene and Working with	Lecture/ Lab Demonstration/ Supervised Work	Assignment 2
13	2	2	A1, B1, B2, B3, C1, C3	Animating Objects and Scenes - Understanding Animation and Keyframes - Using Animation Layers and Animation Modifiers	Lecture/ Lab Demonstration/ Supervised Work	Lab Test
14	2	2	A1, B1, B2, B3, C1, C3	- Animating with Constraints and Simple Controller - Editing Animation Curves in the Track View	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
15	2	2	A2, B1, B2, B3, C1, C3, D1, D3	Final Project Presentations	Lecture/ Lab Demonstration/ Supervised Work	Final Project
16	2	2	A1, B1, B2, B3, C1, C3, D1, D3	All Topics	Lecture/ Lab Demonstration/ Supervised Work	Final Exam

Teaching Materials:

Textbook(s):	1. Kelly Murdock (2023), Autodesk 3ds Max 2024 Basics Guide, SDC Publications, ISBN: 9781630576141, 163057614X. 2. Prof. Sham Tickoo (2025), Autodesk 3ds Max 2025: A Comprehensive Guide, 25th Edition, ISBN: 1640572937, 9781640572935
Handout(s):	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s):	1. Kelly Murdock(2020), "Kelly L. Murdock's Autodesk 3ds Max 2021 Complete Reference Guide", SDC Publications, ISBN : 978-1-63057-334-8 2. Autodesk 3ds Max 2021: A Detailed Guide to Arnold Renderer, 3rd Edition, Pradeep Mangain, PADEXI Academy publisher, ISBN: 978-1393921851.

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
Assignments	The assignments consist of essay, problem-solving and research based theoretical questions regarding topics in 3D graphics projects. The purpose of the assignments 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.	A2, B1, B2, B3, C1, C3	10%
Major Test	The test will be a 1-hour exam that will consists of short-answer, essay, problem-solving and analysis questions.	A1, B1, B2, C1	10%
Lab Test	Students will be asked to use and apply video editing tools to develop new multimedia components as per specific problems.	B1, B2, B3, C1, C3	20%
Final Project (Report and Presentation)	Students will be asked (individually) to use 3D editing tools to design and develop a small 3D graphics animation project that integrates the fundamentals of 3D graphics production. A student must submit a report and presentation slides demonstrating the development process of the project. Students' projects will be evaluated in lab	A2, B1, B2, B3, C1, C3, D1, D3	20%

	sessions where students must justify their choices of the design.		
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay, problem-solving and practical questions.	A1, B1, B2, B3, C1, C3, D1, D3	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 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, 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 including 3D characters, visual effects, and sound effects. Through this course, the student will be able to develop, test and publish 3D games through the gained tools and techniques.

OBJECTIVES:

1. To design 3D games, using gaming tools, languages, and software for the web, console, PC or mobile platforms.
2. To understand features required for real-time game development such as game physics, game networking, game graphics, game effects, game plugins, multiplayer games.
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> : Demonstrate critical knowledge and understanding of essential concepts and principles related to 3D Game theory and game engines.	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research</u> : Recognize the current game development issues and research on emerging game development tools.	<u>Knowledge: theoretical understanding</u> [Level 8]
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Use specialist skills to identify user requirements to develop the 3D games using 3D techniques.	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design</u> : Design a 3D game using an integrated development environment (IDE).	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : Demonstrate creativity in application of dynamic memory management techniques to create and destroy game objects.	Knowledge: Practical Application [Level 8] Communication, ICT and Numeracy Skills [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically evaluate the proposed 3D games in terms of specialized \games criteria.	Generic Problem Solving & Analytical skills [Level 8]
C2	<u>Synthetic</u> : NA	
C3	<u>Creative</u> : <i>Demonstrate creativity in</i> designing efficient 3D games using 3D game techniques.	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 express and communicate ideas in oral and written form.	<u>Communication, ICT and Numeracy Skills</u> [Level 8]
D2	<u>Teamwork and Leadership</u> : NA	

D3	<u>Organizational and Developmental Skills:</u> Operate specialist level to organize ideas and effectively allocate time in given assignment or project.	<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	
2	2	2	A1	Coming around to 3D: - Coordinate systems - Vectors, Cameras - Face, edges, Vertices and Meshes - Materials, Textures Lab: - C# - Basic Programming in 3D compared to 2D	Lecture/ In- Lab Supervised Work/ Class Discussion	In-Lab Exercises
3	2	2	A1, B1, C1, C3	Roll a Ball: - Create your first 3D game project. - Handle Input in 3D Space - Prefab Collectibles Lab: - 3D Movement and Camera handling	Lecture/ Lab Demonstration / In-Lab Supervised Work	In-Lab Exercises
4	2	2	B1, B2, B3, C1, C3	Coming around to 3D: - 3D Rigid Body Physics - 3D Collision Detection and Triggers - 3D Scene Hierarchy Lab: - 3D Environment/Level Design	Lecture/ In- Lab Supervised Work	In-Lab Exercises

5	2	2	B1, B2, B3, C1, C3	3D Design and Prototype: - 3D Game Design Fundamentals - Game Design Document Prototyping - Wireframing or Paper Creation - Gray Boxing - Proof of Concept (POC) - Minimum viable product (MVP) Lab: - 3D Game Prototyping for a game	Lecture/ In- Lab Supervised Work	In-Lab Exercises
6	2	2	A2, B1, B2, B3, C1, C3, D1, D3	3D Characters - Design and Concept Rigging - Animation - Deformation - Constraints and controls - Physics based animation. Lab: - 3D Game-Physics based animation	Lecture/ In- Lab Supervised Work	Lab Project 1 /In-Lab Exercises
7-8	4	4	B1,B2,B3, C1,C3	3D Character Controllers - Built-in character controller - 3D Rigid body character controller 3D Interaction and Mechanics - Game Loops - Mechanics toolbox Lab: - 3D Space SHMUP Game prototype Design	Lecture/ In- Lab Supervised Work	Lab Test1 / In-Lab Exercises

9	2	2	B1, B2, B3, C1, C3	3D User Interface and Menus - User Interface - UI elements - Unity Canvas System - Unity UI objects Lab: - Space World-Space HUD in 3D Environment	Lecture/ In- Lab Supervis ed Work	In-Lab Exercises
10	2	2	B1,B2,B3, C1,C3	3D Visual Effects: - Overview - Shader Graph - Shader Graph Interface - Commonly used nodes - Particle System - Summary Lab: -Shader Graph Implementation	Lecture/ In- Lab Supervis ed Work	In-Lab Exercises
11	2	2	B1, B2, B3, C1, C3	3D Sound: - Elements of Sound design - 3D Sounds - Triggering sound through player interaction and through unity events Lab: - Adding 3D ambient sounds to the game	Lecture/ In- Lab Supervis ed Work	In-Lab Exercises
12-13	4	4	B1,B2,B3, C1,C3	Cameras - Types of Camera Setups - Camera Projections - Using Cinemachine Lab: - FPS Game with Cinemachine	Lecture/ In- Lab Supervis ed Work	Lab Test2 (week13) / In- Lab Exercises

14-15	4	4	A2, B1, B2, B3, C1, C3, D1, D3	Artificial Intelligence - Non-Player Characters - AI Movement - Behavior Trees Lab: Create an NPC AI patrolling in a custom environment	Lecture/ In- Lab Supervised Work	Lab Project 2
16	2		A1, B1, B2, B3,C1, C3	All Topics		Final Exam

TEACHING MATERIALS:

TEXTBOOK(S):	Anthony Davis, Travis Baptiste, Russell Craig, Ryan Stunkel (2022), "Unity 3D Game Development: Designed for passionate game developers— Engineered to build professional games", Packt Publishing Jeremy Gibson Bond (2022), "Introduction to Game Design, Prototyping and Development from Concept to Playable with Unity and C#", Addison Wesley Professional. 3rd ed., ISBN: 978-0134659802
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.	A2, B1, B2, B3, C1, C3, D1, D3	20%
Final Exam	Final exam will be for two hours combining theory and practical, including all types of question: short answers questions, true/false, problem solving	A1, B1, B2, B3, C1, C3	40%
In-Lab Exercises	Exercises will help the students in understanding and digesting all the course topics.	B1, B3, C1	Formative
Overall			100%

14. Admissions

Pre-requisites	ITMS313
Minimum number of students	8
Maximum number of students	25



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 tools and technologies. The focus will be on coding activities that enhance the performance and scalability of the Web site application. ASP.NET MVC framework web application integrated with styles and connected with different databases so that students know when each should/could be used.

OBJECTIVES:

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

SEMESTER: Second **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 web-based systems using ASP.net MVC.	Knowledge: theoretical understanding [Level 8]
A2	<u>Contemporary Trends, Problems and Research</u> : Recognize the current computing issues and research on emerging Web technologies.	Knowledge: theoretical understanding [Level 8]
A3	<u>Professional Responsibility</u> : NA	

B. Subject-Specific Skills		NQF Descriptor/Level
B1	<u>Problem Solving</u> : Critically analyze the real life problems to solve them using web-based systems.	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design</u> : Design the architecture of web based systems by choosing specialized appropriate components that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : Demonstrate ability in application of appropriate advanced tools for developing advanced dynamic web based systems.	Knowledge: Practical Application [Level 8] Communication, ICT and Numeracy Skills [Level 8]

C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically evaluate the advanced components to develop the efficient web-based systems.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative</u> : Demonstrate creativity in designing advanced responsive pages and web-based systems.	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)						
Wee k	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 Web Applications	Lecture/ lab Demonstration	In-Lab Exercise
3	2	2	A1,B1,B2,C1,C3 , D1	Developing ASP.NET MVC Models and Controllers	Lecture/ lab Demonstration	In-Lab Exercise
4	2	2	A1, B1, B3, D1	Developing ASP.NET MVC Views – Razor View Model	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise Oral Inquiry*
5	2	2	A2,B1,B2,B3, C1,C3	ASP.NET MVC Web Applications Forms and Data Validation	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 1
6	2	2	A1, B1, B2, B3, C1, C3, D1	ASP.NET MVC Web Applications - Forms and Data Validation	Lab Demonstration/ Supervised Work	In-Lab Exercise

7	2	2	A1,B1, B2, B3, C1, C3,D1	Data Services XML HTTP Request	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
8	2	2	A1, B1, B2, B3, C1, C3, D1	Database Connectivity With And Without Entity Framework In MVC	Lab Demonstration/ Supervised Work	In-Lab Exercise
9	2	2	A1,B1, B2, B3, C1, C3, D1	Database Connectivity With And Without Entity Framework In MVC	Lecture/ Lab Demonstration/ Supervised Work	Oral Inquiry*
10	2	2	A1,B1, B3, C1, C3	NoSQL Databases for ASP.NET Core Web APIs	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A2,B1,B2,B3, C1,C3	NoSQL Databases for ASP.NET Core Web APIs	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 2
12	2	2	A1,B1, B2, B3, C1, C3, D1	Testing and Debugging ASP.NET MVC	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
13	2	2	A1,B1, B2, B3, C1, C3, D1	Using cloud Web Services in ASP.NET MVC Web Applications	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1, B1,B2, B3,C1,C3, D1	Implementing MVC Web Applications, aws / Windows / Azure/ Linux Deployment	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

15	2	2	B1,B2,B3,C1,C3 , D1,D3	Implementing MVC Web Applications aws / Windows/ Azure/ Linux Deployment	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):	- Valero De Sanctis (2022), ASP.NET Core 6 and Angular: Full-stack web development with ASP.NET 6 and Angular 13, 5th Edition, ISBN: 978-1803239705, Packt Publishing - Murach ,Joel , Delamater Mary (2022) , “ASP.NET Core MVC”, 2nd Edition, Mike Murach & Associates Publications, ISBN : 978-1943873029 - Course 20486: Developing ASP.NET MVC 4 Web Applications, Training Guide, 2018, ISBN: 978-0735677227
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	Dino Esposito, “Programming ASP.NET Core (Developer Reference) 1st Edition”, Microsoft Press, 2018, ISBN: 978-1509304417 Ritesh Modi, “Azure for Architects: Implementing cloud design, DevOps, IoT, and serverless solutions on your public cloud”, Packt Publishing, 2017, ISBN: 978-1788397391

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
Lab Project	The two lab projects consist of problem-solving and integration of emerging plug-ins/APIs in ASP.Net MVC and Responsive Pages. The purpose of the lab projects are to assess students skills individually and to evaluate the critical understanding on key concepts of ASP.Net web application	A2,B1,B2, B3, C1,C3	20%
Major Test	The test will be an in-class 1:30 hrs. exam that will consist of short-answer, essay, and create web application and cover the topics studied in the first 9 weeks.	A1,B1, B3, C1, C3	25%
Project Report And Presentation	Starting from week 5, each student will be asked to develop a small Application project.	B1,B2,B3, C1,C3, D1,D3	15%
Final Exam	The final exam is comprehensive and practical and will be of 120 minute duration. It will consist of short answers, essay and problem-solving questions to be done on computers.	A1, B1,B2, B3, C1,C3	40%
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

CODE & TITLE: ITMS 437: Cloud Services Development
WEIGHT: (2 - 2 - 3)
PREREQUISITE: ITCS 323

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. Extend Web API services using message handlers, model binders, action filters, and media type formatters.
2. Use cloud providers for relayed messaging and brokered messaging using queues and topics.
3. Host cloud services on on-premises servers, and on various cloud providers environments, such as Web Roles, Worker Roles, and Web Sites
4. 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> : Demonstrate critical knowledge and understanding of concepts, and specialized theories relating to cloud services.	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 real life problems to provide cloud based solutions.	Knowledge: Practical Application [Level 8]
B2	<u>Modeling and Design</u> : Design the architecture of cloud based applications and API services.	Knowledge: Practical Application [Level 8]
B3	<u>Application of Methods and Tools</u> : Demonstrate ability in application of appropriate advanced tools related to creating cloud solution.	Knowledge: Practical Application [Level 7] Skills: Communication, ICT & Numeracy [Level 7]
C. Thinking Skills		NQF Descriptor/Level
C1	<u>Analytic</u> : Critically evaluate the cloud based and on premises solutions in terms of efficiency and effectiveness.	Generic Problem Solving & Analytical skills [Level 8]
C3	<u>Creative</u> : Demonstrate creativity in designing and managing cloud based solutions.	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> : Use special skills to communicate technical information in appropriate oral and written forms to a variety of audiences.	Communication, ICT and Numeracy Skills [Level 8]
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	2	2	A1	Introduction to cloud computing Cloud Computing Overview Evolutions of Cloud Computing Cloud Computing Architecture	Lecture/ lab Demonstration	-
2	2	2	B1,B2, B3,C1,C3, D1	Cloud Reference model (NIST Architecture)	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
3	2	2	B1,B2, B3,C1,C3, D1	Cloud Service Models IaaS (Infrastructure as a Service) SaaS (Software as a Service) PaaS (Platform as a Service)	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
4	2	2	A1, B1,B2, B3,C1,C3, D1	Public and Private Clouds Shared Resources Resource Pool Usage Monitor Elastic Management	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise Quiz 1

5	2	2	A1, B3, D1	Cloud Eco Systems Concepts Roles and Actors Cloud Adoption	Lecture/ lab Demonstration	Oral Inquiry
6	2	2	B1,B2, B3,C1,C3, D1	Cloud Eco Systems Implications of Cloud Services Layer Utilizing the Cloud to gain strategic advantage	Lab Demonstration/ Supervised Work	In-Lab Exercise
7	2	2	A1, B3, D1	Cloud Application Development Accessing the clouds: Platforms, Web Applications Web APIs	Lecture/ lab Demonstration	Oral Inquiry
8	2	2	A1,B1,B2,B3,C1, C3, D1	Frameworks: Model View Controllers (MVC), Structs Spring Cloud Platforms in Industry	Lab Demonstration/ Supervised Work	In-Lab Exercise Quiz 2
9	2	2	A1,B1,B2,B3, C1,C3	Cloud Service Delivery Environment and API Storing objects in the cloud Session Management	Lecture/ Lab Demonstration/ Supervised Work	Assignment

10	2	2	A1,B1,B2,C1,C3	Cloud Service Delivery Environment and API Working with the third party API Facebook API, Twitter API, Google Maps API	Lecture/ Lab Demonstration/ Supervised Work	Major Test
11	2	2	A1, B3, D1	Online Cloud Application Best practices in architecting cloud applications in cloud providers	Lecture/ lab Demonstration	Oral Inquiry
12	2	2	A1,B1,B2,B3,C1, C3, D1	Introduction to DevOps DevOps business needs DevOps Culture Process and Technology	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
13	2	2	A1,B1,B2,B3,C1, C3, D1	DevOps capabilities Develop and Test Release and Deploy Monitor and Optimize	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise
14	2	2	A1,B1,B2,B3,C1, C3, D1	Managing the data in Cloud Declaring data types Securing the data location Data control in the	Lecture/ Lab Demonstration/ Supervised Work	In-Lab Exercise

				cloud		
15	2	2	B1,B2,B3,C1,C3, D1,D3	Managing the data in Cloud Securing data for transport in the cloud Scalability and Cloud 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):	David Jambor, “DevOps for Databases: A practical guide to applying DevOps best practices to data-persistent technologies” Packt Publishing, ISBN: 978-1837637300, 2023. Rajkumar buyya, Christian vecchiola, S Thamarai Selvi , “Mastering cloud computing”, TataMcGraw Hill Education Private Limited, 2013.
HANDOUT(S):	PowerPoint slides available on Moodle i.e. http://www.ahlia.edu.bh/moodle
REFERENCE(S):	Ritesh Modi, “Azure for Architects: Implementing cloud design, DevOps, IoT, and serverless solutions on your public cloud”, Packt Publishing, 2017, ISBN: 978-1788397391 Greg Leonardo, “Hands-On Cloud Solutions with Azure: Architecting, developing, and deploying the Azure way”, Packt Publishing, 2018, ISBN: 978-1786468659 Microsoft Official Curriculum. https://www.microsoft.com/learning/en-us/course.aspx?ID=20487B

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 consist of essay, problem-solving and research based theoretical questions regarding topics in cloud services and 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 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	20%
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	10%
Project Report And Presentation	Starting from week 6, each student will be asked to develop a small cloud 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	ITCS 323
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 438 - Computer Animation II
Weight: (2 - 2 - 3)
Prerequisite: ITMS 418
NQF Level Allocated: Level 8
NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

Description: This course introduces students to the principles and practice of motion graphics as a powerful tool for visual communication. Students will learn how to animate graphic elements, text, and images to produce dynamic visual content for digital media. The course covers software user interface, keyframing, layer management, masks, effects, transitions, and compositing techniques. Emphasis is placed on applying design principles, timing, and visual storytelling to create engaging motion graphics such as title sequences, logo animations, explainer videos, and short promotional clips.

Objectives:

1. Develop a critical understanding of the concepts and theory of motion graphics.
2. Develop problem-solving skills pertains to motion graphics.
3. Apply essential animation and design principles effectively in practice.
4. Create motion graphics projects that meet industry standards.

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 concepts, and specialized theories related to motion graphics.	Knowledge: theoretical understanding [Level 8]
A2	Contemporary Trends, Problems and Research: Recognize the current trends, challenges and research developments in motion graphics within the film, television, and digital media industries.	Knowledge: theoretical understanding [Level 8]
A3	Professional Responsibility:	NA

B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Use specialist skills to identify real life problems and user needs to produce motion graphics.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the motion graphic applications by choosing specialized appropriate components and models that satisfy user specifications.	Knowledge: Practical Application [Level 8]
B3	Application of Methods and Tools: Apply multimedia software tools that assist in the creation of motion graphics applications.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically evaluate designed motion graphic applications using professional design, animation, and technical criteria.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic:	NA
C3	Creative Thinking and Innovation: Demonstrate creativity in designing advanced motion graphics.	Generic Problem Solving & Analytical skills [Level 8]

D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Demonstrate ability to communicate technical information in appropriate oral and written forms to a variety of audiences.	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 8]
D4	Ethics and Social Responsibility:	NA

Course Structure (Outline):

Week	Hours		ILOs	Topics	Teaching Method	Assessment Method
	Lec.	Lab				
1	2	2	A1	Introduction	Lecture/ lab Demonstration	-
2	4	4	A1, B1, C1, D1	Getting to know the workflow	Lecture/ lab Demonstration	Oral Participation
3	2	2	A1, B1, B3, D1	Creating Basic Animation using effects and presets	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation / In-Lab Exercise
4	2	2	A2, B1, B2, B3, C1, C3, D1, D3	Animating Text	Lecture/ Lab Demonstration/ Supervised Work	Assignment 1
5	2	2	A1, B1, B2, B3, C1, C3, D1	Working with Shape layers	Lab Demonstration/ Supervised Work	Oral Participation / In-Lab Exercise
6	2	2	A1, A2, B1, B3	Animating a multimedia presentation	Lab Demonstration/ Supervised Work	Oral Participation / In-Lab Exercise
7	2	2	A1, B1, B2, B3, C1, C3	Animating layers and Working with Masks	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation / In-Lab Exercise
8-9	4	4	A1, B1, B2, B3, C1, C3, D1	Distorting objects with Puppet tools and using the roto brush tool	Lecture/ Lab Demonstration/ Supervised Work	Major Test

10-11	2	2	A2, B1, B2, B3, C1, C3, D1, D3	Performing Color Correction and Creating Motion Graphics Templates	Lecture/ Lab Demonstration/ Supervised Work	Assignment 2
12	2	2	A1, B1, B2, B3, C1, C3, D1	Using 3D features and 3D Camera Tracker	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation / In-Lab Exercise
13-14	4	4	A1, B1, B2, B3, C1, C3, D1	Advanced Editing techniques, Rendering and outputting	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation / In-Lab Exercise
15	2	2	A2, B1, B2, B3, C1, C3, D1, D3	Student Projects Presentation	Lecture/ Lab Demonstration/ Supervised Work	Evaluation Of Project Presentations & Reports
16	2	2	A1, B1, B2, B3, C1, C3	All Topics		Final Exam

Teaching Materials:

Textbook(s):	1. Lisa Fridsma and Brie Gyncild (2024), "Adobe After Effects Classroom in a Book 2024 Release 1st Edition", Adobe Press, 2024, 1st Edition, ISBN: 978-0138316488 2. Brie Gyncild & Lisa Fridsma (2022), "Adobe After effects", 1st Edition, Adobe Press, ISBN: 978-0137623921
Handout(s):	PowerPoint slides: http://www.ahlia.edu.bh/moodle
Reference(s):	1. David Dodds (2019), "Hands-On Motion Graphics with Adobe After Effects CC: Develop your skills as a visual effects and motion graphics artist", Packt Publishing, ISBN:978-1789345155. 2. MARK CHRISTIANSEN (2014), "ADOBE AFTER EFFECTS CC VISUAL EFFECTS" and COMPOSITING", ISBN:9780321934697 3. Austin Shaw (2019), "Design for Motion: Fundamentals and Techniques of Motion Design", 2nd Edition, Routledge publication, ISBN:978-1138318656 4. Chris Meyer & Trish Meyer (2016), "After Effects Apprentice:

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	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 motion graphics. Students' work will be observed and evaluated directly during the lab sessions.	B2, B3	Formative
Assignments	Two assignments consist of problem-solving, and research based theoretical questions. The purpose of the assignments is to assess students individually where they have to demonstrate their extensive and detailed knowledge and critical understanding of key concepts of Motion Graphics.	A2, B1, B2, B3, C1, C3, D1, D3	20%
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, C3	20%
Final Project (Report and Presentation)	Students will be asked (individually) to use appropriate tools to design and develop a graphics animation project that integrates the fundamentals of motion graphics production. A student must submit a report and presentation slides demonstrating the development process of the project. Students' projects will be evaluated in lab sessions where students must justify their choices of the design.	A2, B1, B2, B3, C1, C3, D1, D3	20%
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, 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 445 – Modeling and Animating Characters in 3D
Weight:	(2 - 2 - 3)
Prerequisite:	ITMS 428
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 games and animation. 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, animation, and exporting to game engine.

Objectives:

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

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 related to 3D characters modeling and animating.	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 to solve them by designing efficient and effective 3D characters.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the architecture of 3D characters 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 3D characters.	Knowledge: Practical Application [Level 8] Communication, ICT and Numeracy Skills [Level 8]

C. Critical-Thinking Skills		NQF Descriptor/Level
C1	Analytic skills: Critically evaluate various 3D characters techniques to choose the appropriate methods.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic:	NA
C3	Creative Thinking and innovation: Demonstrate creativity in relation to 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	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	4	-	A1, D1	Introduction Character Design	Lecture	Oral Participation
2-3	4	4	A1, B1, B2, B3, C1, C3, D3	Character Modeling: The Knight - Preparing the Scene - Setting Up the Scene - Creating The Template Planes - The Slate Editor - Making a Place Holder - Modeling the Helmet - The Helmet Visor - Modeling the Body - Modeling the Pauldrons - Modeling the Legs - Modeling the Foot - Modeling the Upper Arm - Modeling the Lower Arm - Unwrapping the Model	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
4-5	4	4	A1, B1, B2, B3, C1, C3, D3	Rigging Basics - Rigging a Basic Character - Linking: The Parent-Child Relationship - Animating the Knight - Bones - Kinematics	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation

				- IK Solvers - Adding IK to a Bone Chain		
6	2	2	B2, B3	Character Modeling: The Warhorse Knight - The Warhorse Knight - Setting up the Warhorse Knight Scene - Modeling the Placeholder - Modeling the Base Section - Modeling the Warhorse Body - Unwrap UVW: Quick Peel	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 1
7-8	4	4	A1, B1, B2, D1, C1	Character Rigging: Skin and the CAT Rig - Character Rigging - The Skin Modifier - Adding Bones - Envelopes - Character Studio - Character Animation Toolkit (CAT) - Using the CAT Rig - Creating Custom CAT Rig - Adding the Skin Modifier - The CATMotion Panel - Weighting the Helmet and Torso Vertices - Weighting the Arm Vertices - Weighting the Leg Vertices	Lecture/ Lab Demonstration/ Supervised Work	Major Test

				- Adjusting the CATMotion Animation - Adjusting the Torso Mesh		
9	2	2	A1, B1, B2, B3, C1, C3, D3	Rigging the Warhorse Knight - Preparing the Model - Merging the Knight Model - Creating the Custom CAT Rig - Weighting the Base Vertices - Weighting the Warhorse Body - Adjusting the CATMotion Editor	Lab Demonstration/ Supervised Work	Oral Participation
10-11	4	4	A1, B1, B2, B3, C1, C3, D3	Character Modeling: The Dragon - Setting Up the Template - The Placeholder - Modeling the Body - Modeling the Wing - Attaching the Wing to the Body - Modeling the Front Leg - Adding Detail - Adding Some Character - Unwrapping the Dragon - Quick Peel	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
12	2	2	A1, B1, B2, B3, C1, C3, D3	Rigging the Dragon - Adjusting the Wings - Adjusting the Front Left Leg - Creating a Mirrored Right Leg	Lab Demonstration/ Supervised Work	Oral Participation

				- Rebuilding the Wings - The Body Bones - Linking the Eyes - Adding CATMotion - Adding Skin and Weighting the Vertices		
13-14	4	4	B2, B3	Character Animation - Game Character Animation - Saving the Walk Cycle - Creating the Idle Animation - Saving the Idle Clip - Creating the New Motion Clip - Creating the FBX File for Export	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 2
15	2	2	A1, B1, B2, B3, C1, C3, D3	Exporting to the Game Engine - Setting Up the Game Engine File - Opening Unity - Import Cinemachine - Install The Scene Package - Open the Scene - Import the Character - Adjusting the ThirdPersonCharacter Capsule - Correcting the Texture - Fixing Flipped Faces in Unity - Setting up the Animations in Unity - The Animator	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
16	2	2	A1, B1, B2, B3,	Final project Presentations	-	Final Project Final Exam

			C1, C3, D1, D3			
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Teaching Materials:

Textbook(s)	William Culbertson (2021), 3ds Max Basics for Modeling Video Game Assets, CRC Press, ISBN: 9780367707804
Handout(s)	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s)	1. Oliver Villar, (2017), "Learning Blender: A Hands-On Guide to Creating 3D Animated Characters", Addison Wesley, 2nd Edition, 978-0134663463 2. KELLY L. MURDOCK'S (2016), "3DS MAX 2017 COMPLETE REFERENCE GUIDE". SDC PUBLICATIONS., ISBN 9781630570330 3. Todd Palamar (2014) "Mastering autodesk maya 2015 : Autodesk official press" Indianapolis, John Wiley and Sons, 2014.. ISBN 9781119059820. 4. Matahari Bkakti, Eko Mulyanto Yuniarno, Samuel Gandang Gunanto,

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 Projects	Students will be asked (individually) to use and apply 3D Tools to assesses the student's skills in the field of 3D characters. Students work will be observed and evaluated directly during the lab sessions.	B2, B3	20%
Major Test	The test will be a 1 hour and 20 minutes exam that will consists of short-answer, essay, problem-solving and analysis questions.	A1, B1, B2, D1, C1	20%
Final Project (Report and Presentation)	Students will be asked (individually) to use 3D Software to design and develop a complete project that integrates the fundamentals of 3D Character Creation. A student must submit a report and presentation slides of demonstrating the development process of the project. Students' projects will be evaluated in lab sessions where students must justify their choices of the design.	B1, B2, B3, C1, C3, D1, D3	20%
Final Exam (Written and Practical)	The final exam is comprehensive and will be of two hours duration. It will consist of short-answer, essay, problem-solving and practical questions.	A1, B1, B2, B3, C1, C3	40%
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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

Course Code & Title: ITMS 447 – Animation Film Development

Weight: (2 - 2 - 3)

Prerequisite: ITMS 418

NQF Level Allocated: Level 8

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

Description: This course introduces students to the fundamentals of animation film development. Students will have a better understanding of writing, storyboarding, blocking, and character creation. It will also give students advanced functionalities, such as the Library and Linking system, physics simulators, the integrated compositor, and the Sequence Editor.

Objectives:

1. To critically understand the basic concepts and terminology of animation film development.
2. To acquire the foundation of writing, storyboarding, blocking, and character creation
3. To learn advanced functionalities in animation film development using modern software capabilities.

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 related to Film Animation Development.	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 to solve them by designing professional animations.	Knowledge: Practical Application [Level 8]
B2	Modeling and Design: Design the workflow of animation film 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 animation film.	Knowledge: Practical Application [Level 8] Communication, ICT and Numeracy Skills [Level 7]

C. Critical-Thinking Skills		NQF Descriptor/Level
C1	Analytic skills: Critically evaluate methods and techniques for animation film development.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic:	NA
C3	Creative Thinking and innovation: Demonstrate creativity in relation to designing and modeling animation films	Knowledge: Practical Application [Level 8]

D. General and Transferable Skills (other skills relevant to employability and personal)		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	4	-	A1, D1	Introduction	Lecture	Oral Participation
2-3	4	4	A1, B1, B2, B3, C1, C3, D3	Overview of the Short Animation Process - Creating a Short Animation - The importance of Following Workflow Story - What Makes an Engaging Story? - Writing it Down - Story Scope, Resources, and Reality - How Long is the Story?	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
4-5	4	4	A1, B1, B2, B3, C1, C3, D3	Organization - Digital Assets - The Way That Blender Handles Assets - A suggested Organization Structure Storyboarding and the Story Reel - Storyboarding Basics	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation

				- Suggested Tools - Creating the Storyboards - Telling the Story - Recording a Temporary Sound Track for Timing - Assembling a Story Reel in Blender's Sequence Editor		
6	2	2	B2, B3	Character Design and Creation - Designing in Line with Theme and Reality - Modeling Based on Storyboard Requirements	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 1
7-8	4	4	A1, B1, B2, C1, D1	Libraries and Linking - Libraries - Linking Assets That Do Not Animate - Linking Assets for Object-Level Animation - Linking Assets for Character Animation - Managing Your Links and Libraries Rough Sets, Blocking, and Animatic - Creating Rough Sets - The Template (or Master) Scene File - Matching Camera Angles to Storyboards	Lecture/ Lab Demonstration/ Supervised Work	Major Test

				- Moving Cameras and Characters - Using the Grease Pencil - Creating an Animatic		
9	2	2	A1, B1, B2, B3, C1, C3, D3	Good Sound - Finding Decent Equipment and Environments - Making the Recording - Some Sound-Processing Basics - Previewing the Recorded Sound	Lab Demonstration/ Supervised Work	Oral Participation
10-11	4	4	A1, B1, B2, B3, C1, C3, D3	Managing Animation at the Project Level - Render - Working with a Team - Staying Organized - Animating in Stages and Getting Feedback - Back to the Spreadsheet - Dialogue, Sound Effect, and Music - Adding Audio to Master Scene Template Final Sets and Background - Workflow - Quality versus Render Time - Geometry - Materials - Lighting - Layering - Getting Help with Set	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation

				Building		
12	2	2	A1, B1, B2, B3, C1, C3, D3	Simulation - Blender's simulator - Fluids - Cloth - Rigid Bodies - Ocean - Dynamic Paint - Smoke -	Lab Demonstration/ Supervised Work	
13-14	4	4	B2, B3	Rendering and Compositing - Goals and Overview - Lighting Shot Files - Compositing got better, Faster Render - Getting a Good Render on Local Machine - Final Animation Review - Preparing for Render Farming - Setting up and Using a Render Farm - Checking the Final Frames	Lecture/ Lab Demonstration/ Supervised Work	Lab Project 2
15	2	2	A1, B1, B2, B3, C1, C3, D3	Final Edit - Adjusting Timing - Transitions - Adding Titles and Color Plates - Transforms - More Complex Work - Final Export - Wrapping It Up	Lecture/ Lab Demonstration/ Supervised Work	Oral Participation
16	2	2	A1, B1, B2, B3, C1, C3, D1, D3	Final project Presentations	-	Final Project Final Exam

Teaching Materials:

Textbook(s)	Bright T. Norman (2025), "Mastering Blender 5.1: Create Stunning 3D Models, Animations, and Python Scripts from Beginner to Pro" ISBN: 9781138400719, 1138400718 Roland Hess (2017), Blender Production, CRC Press, ISBN: 9781138400719, 1138400718
Handout(s)	Power point slides, http://www.ahlia.edu.bh/moodle
Reference(s)	1. Barbara Clark(2019), "The Guide to Managing Postproduction for Film, TV, and Digital Distribution", 3rd Edition, 978-1138482814 2. Vineeth V. (2022), Acting using a Pencil: How to Plan an Animation Film, The Readers Paradise. 3. Nicolae Sfetcu (2014), Animation & Cartoons, MultiMedia Publishing 4. Rao Heidmets, The Animation Textbook, CRC Press, ISBN: 9781000828153, 1000828158

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 Projects	Students will be asked (individually) to use and apply animation development tools to assesses the student's skills in the field of Animation Film. Students work will be observed and evaluated directly during the lab sessions.	B2, B3	20%
Major Test	The test will be a 1 hour and 20 minutes exam that will consists of short-answer, essay, problem-solving and analysis questions.	A1, B1, B2, C1, D1	20%
Final Project (Report and Presentation)	Students will be asked (individually) to use animation Software to design and develop a complete project that integrates the fundamentals of Animation Film Development. A student must submit a report and presentation slides of demonstrating the development process of the project. Students' projects will be evaluated in lab sessions where students must justify their choices of the design.	B1, B2, B3, C1, C3, D1, D3	20%
Final Exam	The final exam is comprehensive and will be of two hours	A1, B1, B2,	40%

(Written and Practical)	duration. It will consist of short-answer, essay, problem-solving and practical questions.	B3, C1, C3	
Overall			100%

Admissions	
Minimum number of students	5
Maximum number of students	20

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

Course Code & Title: ITMS 499 – Major Project
Weight: (0-6-3)
Prerequisite: ITRD 498 & ETHC 392
NQF Level Allocated: Level 8
NQF Notional Hours / Credits: 120 notional hours/ 12 NQF credit

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.

Objective:

1. To conduct a research project on certain chosen topic in the field of IT that involves formulating a real-world problem, developing its requirements, designing, implementing, administering, and testing the computing solution, and finally writing a report highlight the results of the project.
2. To apply knowledge of IT in the project to provide a high-quality solution to a complex real-world problem.
3. To demonstrate research ethics, academic integrity and originality, critical thinking and problem-solving, practical and written skills, as well as organization and time-management skills.

Semester:

Instructor:

Office Telephone:

Email:

Intended Learning Outcomes (ILOs):

A. Knowledge and Understanding		NQF Descriptor/ Level
A1	Concepts and Theories:	N/A
A2	Contemporary Trends, Problems and Research: Demonstrate an informed and critical awareness of research issues and methods, technological advancements, and current solutions related to some problems in the field of Information Technology.	Knowledge: theoretical understanding [Level 8]
A3	Professional Responsibility: Demonstrate cognition of and adhere to professional code of conduct as an IT professional.	Knowledge: theoretical Understanding [Level 8]
B. Subject-specific Skills		NQF Descriptor/ Level
B1	Problem Solving: Critically analyze user needs within the complex computing problem under study to be considered in the development and administration of a computing solution.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]
B2	Modeling and Design: Develop a model of computing- based solution design to meet desired user needs.	Knowledge: Practical Application [Level 8]
B3	Application of Methods and Tools: Use specialized tools to implement effective computing-based solution for the complex problem under study.	Knowledge: Practical Application [Level 8] Skills: Communication, ICT & Numeracy [Level 8]
C. Critical-Thinking Skills		NQF Descriptor/ Level
C1	Analytic skills: Critically evaluate the performance of the developed computing-based solution against the set of computing requirements.	Generic Problem Solving & Analytical skills [Level 8]
C2	Synthetic: Effectively integrate various components to develop an efficient computing-based solution.	Generic Problem Solving & Analytical skills [Level 8]
C3	Creative: Create an innovative computing-based solution.	Generic Problem Solving & Analytical skills [Level 8]
D. General and Transferable Skills (other skills relevant to employability and personal development)		NQF Descriptor/ Level
D1	Communication: Communicate ideas effectively, in written and oral form, to a diverse range of audiences and stakeholders.	Communication, ICT and Numeracy Skills [Level 8]
D2	Teamwork and Leadership: Work effectively as a member/ leader in the project team.	Competence: Autonomy, Responsibility and Context [Level 8]
D3	Organizational and Developmental Skills: Plan effectively the tasks, ideas, resources and allocated time to successfully develop computing-based solution.	Competence: Autonomy, Responsibility and Context [Level 8]
D4	Ethics and Social Responsibility: Follow research ethics and social responsibility while responding positively to the needs of society by effectively employing the advanced computing solutions and technologies.	Competence: Autonomy, Responsibility and Context [Level 8]

Course Structure (Outline):

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

1. Writing and submitting project proposal that identify a problem 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 IT College Undergraduate Project Guidelines. The timeline and the key milestones are typically as follows:

Key Milestones	Timeline
Introduction and Problem Definition ✚ 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	Month 1 of Semester 1
Literature Review ✚ 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	Months 2 & 3 of Semester 1
Approach, Development Model, Research Method and Tools ✚ Select and study development model and effective research methods to be used ✚ Choose and study any other requirements, e.g., programming languages, software and other tools ✚ Write a draft chapter on the development model, Research Methods and Tools ✚ Consult with supervisor and revise accordingly	2 weeks of Semester 2
Computing Solution Development ✚ Analyze user requirements. ✚ Gather and record any required data ✚ Design, implement and evaluate any the proposed solution ✚ Record, study, analyze and interpret findings and raw data ✚ Discuss with supervisor results and conclusions and revise accordingly	8 weeks of Semester 2

Drafting Main Chapters in Project ✚ Describe the development process of the proposed solution and experiments if any ✚ Summarize the findings and data using, e.g., tables and charts ✚ 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	2 weeks of Semester 2
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Teaching Materials:

Textbook(s):	N/A
Handout(s):	Undergraduate Project Guidelines.
Reference(s):	Students are free to choose the references that support their research studies in consultation with their supervisors.

Assessments:

The student work, written project, oral presentation/defense, and other supplemented documentations or software is evaluated by an examination committee which is approved by the department council. The student must defend his/her project in front of the examination committee which consists of three examiners consisting of the supervisor, one internal examiner and one external examiner (industry representative). Not all students will be equally evaluated. Q/A during the presentation affects the Performance Indicators (PI) (identified by *) marks.

The student work will be evaluated as follows:

UNDERGRADUATE PROJECT
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Marking Rubric for the Submitted Work (80%)

Performance Indicator (PI)	Exceeds Standards	Meets Standards	Partially Meets Standards	Fails to Meet Standards	SO(CILOs)
Problem Definition *	Effectively identify all user needs (functional and nonfunctional) and analyze a problem thoroughly using efficient and effective tools. (Score=8.5-11.0)	Effectively identify most of user needs (functional and nonfunctional) and analyze a problem using efficient and effective tools (Score= 5.5-8)	Identify few of user needs (functional and nonfunctional) and imprecisely analyze a problem. (Score=2.5.-5.0)	Identify few of user needs (functional and nonfunctional) and fail to analyze a problem. (Score=0.0-2.0)	6 (B1)
Literature Search *	Information gathered from a variety of quality electronic and print source. Sources are relevant, balanced and include critical readings relating to the thesis or problem. (Score=8.5-11.0)	Information gathered from a variety of relevant sources both print and electronic (Score= 5.5-8.0)	Limited range of information and minimal effort in selecting quality resources. (Score=2.5.-5.0)	Information lacked relevance, quality, depth and balance. (Score=0.0-2.0)	1,4(A2, A3)
Solution Design*	The proposed design considers all user needs and quality factors (complete). All models and techniques used are appropriate. (Score=10-13.0)	The proposed design considers most of user needs and quality factors. Most of models and techniques used are appropriate. (Score=6.5-9.5)	The proposed design considers few of user needs and quality factors. Few of models and techniques used are appropriate. (Score 3.0-6.0)	Little effort was made in the proposed design by ignoring most of user needs and quality factors. Most of models and techniques used are inappropriate. (Score=0.0-2.5)	2 (B2,C2)
Result & Analysis *	Result, information, design or solution are clear and complete. Careful analysis/ testing of the results, information. Solutions presented with appropriate and inventive conclusions supported by high quality evidence. (Score=8.5-11.0)	Presenting clear and complete results, information, design or solutions, as well as analysis or testing with very few aspects being unclear, superficial or incomplete. There are appropriate conclusions supported by moderate- to- high quality evidence. (Score= 5.5-8)	Presenting, for the most part but not exclusively, clear and complete results, information designs or solutions, as well as analysis or testing with a few to several aspects being unclear, superficial or incomplete. The conclusions are supported by low-to- moderate quality evidence. (Score=2.5.-5.0)	Presenting, for the most part, incomplete results, information, design or solutions, as well as analysis or testing with many unclear, superficial or incomplete aspects. The conclusions are supported by low quality evidence. (Score=0.0-2.0)	2 (C1)
Solution implementation/Product*	All the functionalities in the developed product are working correctly, contribution is excellent (by creating innovative solution). All objectives are met. (Score=10-13.0)	Most of the functionalities in the developed product are working correctly, contribution is very good. All objectives are met (Score=6.5-9.5)	Few of the functionalities in the developed product are not working correctly, contribution is reasonable. Most objectives are met. (Score 3.0-6.0)	Most of product functionalities are not working correctly or incomplete, contribution is very less. Most of objectives are not met (Score=0.0-2.5)	2 (B3, C3)
References and Citation	Sources are properly cited, both in-text/ in-product. (Score= 4.5-5.0)	With some care, sources are cited, both in-text/ in-product. (Score= 3.0-4.0)	Greater care needed in documenting sources. (Score= 1.5-2.5)	Sources are not cited. (Score= 0.0-1.0)	4(D4)
Documentation & Format	Report structure is appropriate, and ideas are represented effectively (accurately and completely) using text, models, graph. Documentation is error-free by following report writing standards. (Score=8.5-11.0)	There is logical organization of the report and good connections among ideas which represented completely but some of them are inaccurate. A few errors noted according to the report writing standards. (Score= 5.5-8.0)	There should have been greater effort put into organizing the report. The ideas are represented completely and not accurately. Documentation was poorly constructed. Several errors noted. (Score=2.5.-5.0)	The report is not logically or effectively structured. The ideas are not represented effectively. Documentation of the report is poor with in-text errors manifold. (Score=0.0-2.0)	3 (D1, D3)
Teamwork	Working in group as a leader or effective member who contributes a lot of effort and meet the deadlines always as shown in the meeting minutes (Score= 4.5-5.0)	Working in group as a strong member who tries hard and meet the deadlines most of times as shown in the meeting minutes (Score= 3.0-4.0)	Working in a group as a satisfactory member who does what is required and meet the deadlines sometimes as shown in the meeting minutes. (Score= 1.5-2.5)	Working individually or in a group but refuse to participate and respect the deadlines as shown in the meeting minutes. (Score= 0.0-1.0)	5 (D2, D3)

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COLLEGE OF INFORMATION TECHNOLOGY
Marking Rubric for Oral Examination (20%)

Performance Area	Exceeds Standards (Score= 7.5-10.0)	Meets Standards (Score=5.5-7.0)	Partially Meets Standards (Score=3.0-5.0)	Fails to Meet Standards (Score=0.0-2.5)	SO(CILOs)
Organization, Eye Contact & Delivery	Logical sequence provides explanations and can elaborate. Maintains eye contact with audience throughout the presentation. Speaks clearly and loud enough for all in the audience to hear and pronounces all terms correctly and precisely.	Logical sequence provides explanations but fails to elaborate. Maintains eye contact with audience most of the time, with occasional reference to notes. Voice is clear, but occasionally too quiet to be heard by all in the audience. Pronounces all terms correctly and precisely.	Logical sequence but cannot provide explanations or elaborate. Maintains eye contact with audience some of the time, but refers frequently to notes. Voice is clear, but occasionally too quiet to be heard by all in the audience. Presenter mispronounces some terms.	No logical sequence. Reads most or all of report, making little to no eye contact with audience. Voice is unclear and generally too quiet to be heard by all in the audience. Presenter mispronounces many terms.	3 (D1)
Time Management & Presentation Skills	Speaker uses the allotted time effectively and finishes on time. Balanced used of appropriate multimedia that enhances the overall presentation. Where relevant, demonstrates mastery in employment of supporting material such as software, hardware devices or multimedia.	Finishes on time but has to rush through last points of presentation limited multimedia that enhance the overall presentation. Easy to read and informative, but not outstanding. Where relevant, demonstrates near mastery in employment of supporting material such as software, hardware devices or multimedia.	Finishes on time but rushes through most of the presentation. Limited multi-media that enhance parts of the presentation. Easy to read and informative in parts only. Where relevant, demonstrates some skill in employment of supporting material such as software, hardware devices or multimedia.	Dose not finish on time or finishes well before allotted time. No multimedia or uses it in distracting or ineffective manner. Difficult to read and uninformative. Where relevant, demonstrates little or no skill in employment of supporting material such as software, hardware devices or multimedia.	3 (D1)

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).