COLLEGE OF INFORMATION TECHNOLOGY

DEPARTMENT OF MULTIMEDIA SCIENCE

<u>**COURSE SYLLABUS/ SPECIFICATION**</u>

Course Code & Title: **ITMS 325 – Web Applications Design**

Weight: **(2-2-3)**

Prerequisite: **ITMS 205**

NQF Level Allocated: **7**

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

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

Objective:

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

Semester:

Instructor (s):

Office Telephone: **Email (s):**

Intended Learning Outcomes (ILOs):

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

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

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

C3	**Creative Thinking and innovation:** Demonstrate creativity in designing dynamic websites.	Knowledge: Practical Application [Level 7]

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

Course Structure (Outline)

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

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

* Formative assessment

Teaching Materials:

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

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

Assessment

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

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

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