



**UUM COLLEGE OF ARTS AND SCIENCES
UNIVERSITI UTARA MALAYSIA**

No.	Information on Course										
1.	Course Name: WEB ENGINEERING										
2.	Course Code: STIW3044										
3.	Name(s) of Academic Staff: ▪ AHMAD HANIS MOHD SHABLI										
4.	The rationale for the inclusion of the course in the programme: This is an elective course for BSc (Hons) (Information Technology) students majoring in Software Engineering.										
5.	Semester/Year Offered: 5/3										
6.	Total Student Learning Time (SLT)	Face to face					Online Learning		SLPA	TLT	
	TL = Traditional Lecture T = Tutorial P = Practical SCL/O = Student-Centered Learning/Others A = Assessment OL= Online Learning OA = Online Assessment SLPA= Self Learning Preparation and Assessment TLT = Total Learning Time	TL	T	P	SCL/O	A	OL	OA			
		25.0	0.0	22.0	0.0	3.56	9.0	4.52	92.92	160.0	
7.	Credit Value: 4										
8.	Pre-requisite (if any):										

		STIA1023 PROGRAMMING 2 DATABASE
9.		<p>Upon completion of the course, students are expected to</p> <ul style="list-style-type: none"> i. be able to design a web application using the standard of the industry web engineering design technique. ii. be able to develop web applications using standard industry web engineering development tools. iii. be able to test web applications using the standard of the industry web engineering testing process.
10		<p>Course Learning Outcomes:</p> <p>Upon completing the course, students can</p> <ul style="list-style-type: none"> i. design web-based applications using state of industry web application development methodology. (C3, P5) ii. developed a web-based application using the industry mobile application development standard. (C3, P5) iii. Be able to evaluate the web-based application using appropriate web application testing and evaluation tools. (A3, P2)
11		<p>Transferable Skills:</p> <p>Knowledge, practical, problem-solving, and communication skills</p>
12		<p>Teaching-learning and assessment strategy:</p> <p>The mixed-method between teacher-centered and student-centered. The assessment strategy is a continuous assessment with real project experience through a web application project.</p>
13		<p>Synopsis:</p> <p>Web applications continue as essential tools in today's computing world. More new and exciting features, applications, and content keep pushing web technology further. The need for more exciting application solutions to improve the current state-of-the-art web technology is becoming more critical. Web application engineering is the set of processes and procedures involved in writing software with consideration for web technology stacks. Students will learn how to design, develop, and test web applications using state of industry methodology and technology. Topics covered will include web development stacks such as HTML, CSS, JavaScript, PHP, and MySQL. The student also will be exposed to industry-standard development frameworks. Upon completion of the course, students will be able to design, develop, and test applications for the web.</p>
14		<p>Mode of Delivery:</p> <p>Traditional Lectures, Practical, Student-Centered Learning, Online learning, and Project.</p>
15		<p>Assessment Methods and Types:</p> <p>Coursework – 100%:</p> <ul style="list-style-type: none"> ▪ 60% (Quizzes, Labs, and Assignments) ▪ 40% (Final Exam)

		Assessment Methods	Percentage	MQF	CLO1	CLO2	CLO3	CLO4	CLO5
	Coursework	Quizzes	10%	MQF1	√				
		Midterm Test	15%	MQF1/MQF2		√	√		
		Assignments	20%	MQF2/MQF6		√	√		
		Project (Development)	15%	MQF2/MQF6		√	√	√	
		Final Exam (Presentation)	40%	MQF2/MQF6		√	√		
		Total	100.0%						
		Final Examination							
16	Mapping of the course/module to the Programme Aims								
Programme Aims				Course Learning Outcomes					
				1	2	3	4		
The aim of this programme is to produce graduates with the competitive knowledge, principles and skills in term of theoretical and practical foundation for designing, implementing and managing information technology solutions and resources and also recognizing the impact of technology on individuals, organization and society.				√	√	√	√		
17	Mapping of the course/module to the Programme Learning Outcomes								
Programme Learning Outcomes				Course Learning Outcomes					
				1	2	3	4		
Demonstrate knowledge and understanding of essential facts, concepts, principles and theories relating to information technology.				√	√				
Design, implement, utilize and manage information technology solutions and resources.						√	√		
Utilize relevant techniques, and demonstrate analytical and critical thinking skills in problem solving.						√	√		
Communicate and work effectively with peers, clients, superiors and society.									

	Demonstrate skills in meeting people, talking with and accepting guidance and responsibilities.				
	Apply information management skills and principles of lifelong learning in academic and career development.				
	Apply broad business and real world perspectives in planning effectively, making judgments and demonstrating entrepreneurial skills.				
	Demonstrate professionalism, values, attitudes and ethical considerations in accordance with ethical and legal principles.				
	Demonstrate the ability to influence others in completing a common task.				
18	Content outline of the course/module and the SLT per topic				

Topics/Weeks	Learning Outcomes	Face to Face				OL	SL	TLT
		TL	T	P	SCL/O			
1. Introduction to web engineering. 1.1. Web development lifecycle. 1.2. Web application basic development stacks. 1.3. Web application development environment. 1.4. Web application frameworks.	1	4					4	8
2. Web Design Overview 2.1. User interface design 2.2. User interface experience 2.3. Basic web design layout management 2.4. HTML and CSS 2.5. Landing Page Development	2	2		2			4	8
2.6. CSS Frameworks 2.7. Basic Page with CSS framework 2.8. Form design and development 2.9. JavaScript and Cookies	2,3	3		3		2	8	16
3. Database design and development 3.1. Web application databases 3.2. Database web design 3.3. Database development	2,3	1		2		1	4	8
3.4. CRUD database operations 3.4.1. Create a table 3.4.2. Read from a table 3.4.3. Update a table 3.4.4. Delete from a table	2,3	3		3		2	8	16
4. Backend Services 4.1. Web application backend 4.2. Web Sessions 4.3. Backend service development 4.4. User interface and service integration.	2,3	3		3		2	8	16
4.5. Backend database operations. 4.5.1. Create data 4.5.2. Read data 4.5.3. Update data 4.5.4. Delete data 4.6. Asynchronous operations	2,3	2		2			8	8
5. Web application debugging and publishing 5.1. Console debug and error log 5.2. Elements and layout 5.3. Data recorder 5.4. Performance analysis 5.5. Publishing a web application	2,3	2		2			4	8

6. Web Application Framework 6.1. Frontend frameworks 6.2. Backend frameworks 6.3. Full stacks frameworks 6.3.1. Framework installation 6.3.2. Application structure 6.3.3. Database 6.3.4. Environment Configuration 6.3.5. Routing	2,3	3		3		2	8	16
6.3.6. Middleware 6.3.7. Controllers 6.3.8. CRUD operations	2,3,4	2		2			4	8
		25		22		9	56	112

Student Learning & Assessment	Face to Face	Online Learning	Online Assessment	SLPA	TLT
Course Delivery and Preparation	47.0	9.0		56.0	112.0
Coursework 60%	0.2		4.5	25.2	29.9
Final Examination 40%	3.4		0.0	14.7	18.1
Total Notional Hours	50.6	9.0	4.5	95.9	160.0
Credit Hours	4.00				
<p>Main References: Introduction to Web Programming, https://shopee.com.my/product/66171375/11356370108/</p> <p>Additional References: 1. W3CSS web application development, https://www.w3schools.com/w3css/default.asp 2. Laravel Framework, https://laravel-news.com/your-first-laravel-application 3. Angular Framework, https://www.tektutorialshub.com/angular-tutorial/</p>					