	Ministry of Higher Education and Scientific Research - Iraq Al-Nahrain University College of Science Computer Science Department	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information
معلومات المادة الدراسية

Module Title	Web Application I	**Module Delivery**	
Module Type	CORE	☐**Theory** √**Lecture** √**Lab** ☐**Tutorial** ☐**Practical** ☐**Seminar**	
Module Code	COMP3114		
ECTS Credits	5		
SWL (hr/sem)	125		
Module Level	3	**Semester of Delivery**	1
Administering Department	Computer Science	**College**	College of science
Module Leader	Dr.Tiba Zaki Abdulhameed	**e-mail**	Tiba.zaki@nahrainuniv.edu.iq
Module Leader's Acad. Title	Lecturer	**Module Leader's Qualification**	Ph.D.
Module Tutor		**e-mail**	

Peer Reviewer Name	Dr. Rasool Hisham Al-Saadi	**e-mail**	rasool.hisham@nahrainuniv.edu.iq
Review Committee Approval		**Version Number**	1

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	NA	**Semester**	
Co-requisites module	NA	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	The Front-End Development course serves as a prerequisite for the Back-End Development course, ensuring students have fundamental web knowledge before tackling server-side programming. Together, these courses provide comprehensive full-stack web development capabilities. This course aims to provide students with comprehensive knowledge and practical skills in front-end web development. Students will learn to create responsive, accessible, and user-friendly web interfaces using modern HTML, CSS, and JavaScript technologies. The course emphasizes user experience principles, cross-browser compatibility, and industry best practices.		

Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon successful completion of this module, students will be able to: 1. Design and implement semantic HTML5 structures for web content 2. Create responsive web layouts using modern CSS techniques including Flexbox and Grid 3. Apply user experience principles to create intuitive and accessible web interfaces 4. Develop interactive web applications using JavaScript and DOM manipulation 5. Implement client-side form validation and user input handling 6. Integrate third-party APIs and handle asynchronous operations 7. Apply version control using Git and collaborate on coding projects 8. Deploy and maintain front-end applications using modern development tools

Indicative Contents المحتويات الإرشادية	• Web fundamentals and client-server architecture • HTML5 semantic elements and forms • CSS styling, layout systems, and responsive design • JavaScript programming fundamentals • DOM manipulation and event handling • jQuery library and modern JavaScript (ES6+) • Fetch API and asynchronous programming • User Experience (UX) principles and accessibility standards • Cross-browser testing and debugging • Version control with Git and GitHub • Introduction to front-end frameworks • Build tools and deployment strategies

Learning and Teaching Strategies
استراتيجيات التعلم والتعليم

Strategies	**Teaching and Learning Strategies** 1. **Interactive Lectures** ○ To introduce fundamental theoretical concepts (HTML, CSS, JavaScript, C#, MySQL, etc.). ○ Use of presentations and in-class practical examples. 2. **Project-Based Learning** ○ Each student/group develops a mini project during the course, followed by a complete final project. ○ Enables integration of front-end and back-end aspects and practical application of learned concepts. 3. **Active Learning** ○ Short in-class activities such as: debugging broken code, group discussions on best practices, and quick quizzes. ○ Think-Pair-Share: students think individually, discuss with a peer, then share with the class. 4. **Hands-On Labs** ○ Weekly practical sessions to develop web pages and applications step by step. ○ Provide clear, short tasks to be completed during the session. 5. **Collaborative Learning** ○ Students are divided into groups to design parts of an application and then integrate them. ○ Encourages peer code review. 6. **Problem-Based Learning** ○ Providing real-world problems (e.g., building a secure login system or a small e-commerce website) and motivating students to develop their own programming solutions. 7. **Flipped Classroom Model** ○ Theoretical concepts are studied before class, while in-class time is dedicated to practical application and problem-solving. 8. **Use of Digital Learning Resources** ○ Official documentation (Bootstrap, Tailwind, ASP.NET, MySQL). ○ Short instructional videos (YouTube, freeCodeCamp, MOOC platforms). ○ Platforms like GitHub for version control practice and collaboration. 9. **Formative Assessment**

	○ Short in-class quizzes (online quizzes). ○ Immediate feedback during lab sessions. 10. **Presentations & Peer Feedback** • Students present their projects mid-term and at the end of the course. • Peers provide feedback to improve presentation and technical communication skills.

Student Workload (SWL)
الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	64	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	4
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	61	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

As		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	1	10% (10)		All
	Assignments	1	10% (10)		All
	Projects / Lab.	1	20% (20)	Continuous	All
	Report	0			
Summative assessment	**Midterm Exam**	2 hr	10% (10)		All
	Final Exam	3hr	50% (50)		All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

Week	Material Covered
Week 1	**UX Principles & Web Fundamentals** Readings: Krug, Ch. 1-3; Duckett HTML/CSS, Ch. 1-3 Topics: How the web works, client/server model, usability heuristics Activities: Usability Heuristic Evaluation: Groups analyze popular websites using Krug's principles HTML Scavenger Hunt: Identify semantic elements in real websites Design Discussion: "What makes an app frustrating vs. delightful?"
Week 2	**HTML5 & Semantic Markup** Readings: Duckett HTML/CSS, Ch. 4-7 Topics: Semantic elements, forms, tables, multimedia Activities: • Convert document to semantic HTML • Build accessible form with proper labels • HTML validation exercise
Week 3	**CSS Fundamentals** Readings: Duckett HTML/CSS, Ch. 8-10 Topics: Selectors, box model, typography, colors Activities: • Style a navigation system • Typography hierarchy exercise • CSS specificity challenge
Week 4	**CSS Layout - Flexbox** Readings: Duckett HTML/CSS, Ch. 11-12 Topics: Flexbox container & items, alignment, responsive patterns Activities: • Build a responsive photo gallery • Create a dashboard layout • Flexbox Froggy game challenge
Week 5	**CSS Layout - Grid** Readings: Duckett HTML/CSS, Ch. 13 Topics: Grid template areas, responsive grids, complex layouts Activities: • Magazine-style layout with CSS Grid • Portfolio grid system • CSS Grid Garden practice
Week 6	**Responsive Design & Media Queries** Readings: Duckett HTML/CSS, Ch. 14-15 Topics: Mobile-first approach, breakpoints, responsive images

	Activities: • Convert desktop site to mobile-first • Responsive image optimization • Cross-browser testing
Week 7	Mid Exam
Week 8	**JavaScript Fundamentals I** Readings: Duckett JavaScript, Ch. 1-3 Topics: Variables, data types, operators, functions Activities: • Interactive calculator • Temperature converter • Code debugging exercises
Week 9	**JavaScript Fundamentals II** Readings: Duckett JavaScript, Ch. 4-5 Topics: Conditionals, loops, arrays, objects Activities: • Todo list application • Student grade calculator • Array manipulation challenges
Week 10	**DOM Manipulation** Readings: Duckett JavaScript, Ch. 6 Topics: Document Object Model, element selection, event handling Activities: • Dynamic content generator • Interactive quiz application • Form validation with JavaScript
Week 11	**jQuery & Libraries** Readings: Duckett JavaScript, Ch. 7-8 Topics: jQuery syntax, DOM traversal, animations Activities: • Image slider with jQuery • AJAX content loading • Animation effects workshop
Week 12	**Fetch API & JSON** Readings: API documentation standards Topics: HTTP requests, REST APIs, JSON parsing, error handling Activities: • Weather app with public API • GitHub user profile fetcher • API error handling scenarios

Week 13	**Front-End Frameworks Introduction** Readings: React/Vue.js documentation Topics: Component-based architecture, state management Activities: • Build components in React/Vue • State management exercise • Props and events workshop
Week 14	**Final Project & Portfolio** Topics: Project completion, portfolio development
Week 15	**Preparatory Week**
Week 16	**Final Exam**

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
Week	**Material Covered**
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1. **Duckett, J.** *HTML & CSS: Design and Build Websites* https://www.htmlandcssbook.com/code-samples/ online pdf 2. **Duckett, J.** *JavaScript and jQuery: Interactive Front-End Web Development* 3. **Krug, S.** *Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability*	
Recommended Texts	1. **Learning Web Design: A Beginner's Guide** • **Author:** Jennifer Robbins • **Publisher:** O'Reilly Media • **Why:** Comprehensive reference covering everything from basics to advanced topics. 2. **CSS in Depth** • **Author:** Keith J. Grant • **Publisher:** Manning Publications • **Why:** Deep dive into CSS that goes beyond basics.	
Websites	• **Eloquent JavaScript, 3rd Edition** Marijn Haverbeke https://eloquentjavascript.net/ • **MDN Web Docs** (https://developer.mozilla.org) - Excellent free reference • **freeCodeCamp** (https://www.freecodecamp.org) - Interactive learning • **JavaScript.info** (https://javascript.info) - Modern JavaScript tutorial • **CSS-Tricks** (https://css-tricks.com) - Practical CSS examples	

APPENDIX:

GRADING SCHEME مخطط الدرجات				
Group	**Grade**	التقدير	**Marks (%)**	**Definition**
Success Group (50 - 100)	**A** - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 – 49)	**FX** – Fail	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				

NB Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.



ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي