# MODULE DESCRIPTION FORM

# نموذج وصف المادة الدراسية

| Module Information<br>معلومات المادة الدراسية | | | | | |
|---|---|---|---|---|---|
| **Module Title** | **Web applications Development** | | | **Module Delivery** | |
| **Module Type** | **Core** | | | ☒**Theory**<br>☒**Lecture**<br>☒**Lab**<br>☐**Tutorial**<br>☐**Practical**<br>☐**Seminar** | |
| **Module Code** | **COM-214** | | | | |
| **ECTS Credits** | 6 | | | | |
| **SWL (hr/sem)** | 150 | | | | |
| **Module Level** | 2 | | **Semester of Delivery** | 3 | |
| **Administering Department** | com | | **College** | cos | |
| **Module Leader** | Dheyab Salman Ibrahim | | **e-mail** | dr.dheyab@uodiyala.edu.iq | |
| **Module Leader's Acad. Title** | Assistant Prof | | **Module Leader's Qualification** | Ph.D. | |
| **Module Tutor** | Name (if available) | | **e-mail** | E-mail | |
| **Peer Reviewer Name** | Name | | **e-mail** | E-mail | |
| **Scientific Committee Approval Date** | 01/08/2024 | | **Version Number** | 1.0 | |

| Relation with other Modules<br>العلاقة مع المواد الدراسية الأخرى | | | |
|---|---|---|---|
| **Prerequisite module** | | **Semester** | |
| **Co-requisites module** | None | **Semester** | |

| Module Aims, Learning Outcomes and Indicative Contents<br>أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية | |
|---|---|
| **Module Objectives**<br>أهداف المادة الدراسية | Web Development course syllabus aims to teach about front-end, back-end, and full-stack Web Development. Web Development course covers various topics under Web Development such as Database Management, Web Publishing, Web Design, and Web Programming. .<br><br>This is an online course. All official course materials will be made available online at https://gitlab.msu.edu/cse477-spring-2022. This course does not use desire2learn. If you can not access the course repository, please contact a member of the course staff. The contents of the course require a login using an MSU ID and password. |
| **Module Learning Outcomes**<br><br>مخرجات التعلم للمادة الدراسية | This course provides an overview of contemporary techniques, and tools used for web application development. More specifically, this course covers the three essential technology components of web applications (frontend, backend, and databases), as well as the internet technologies used to host, distribute, and scale web applications. A list of key topics include: How the internet works, internet protocols, domain name servers, web hosting, HTML, CSS, Javascript, conventions and best practices, DOM manipulation, Python Flask, sessions, cookies, relational databases, NoSQL Databases, database optimization, containerization, version control systems, APIs and Microservices. Objective Students completing this course are expected to be able to: Understand the unique aspects of web application design. Work in resource sensitive and resolution variant environments. Apply common patterns in web development |
| **Indicative Contents**<br>المحتويات الإرشادية | Web development is building websites and web applications like Facebook, Twitter, or internal web portals within businesses. Web development has two disciplines: front-end and back-end.<br><br>**Front-end** is visual and interactive aspects of a website. You will learn HTML, CSS and JavaScript to master front-end web development.<br><br>**Back-end** is all the logic behind the scenes that supports your website: databases, user management, etc. You will need to learn any **one** of the following back-end languages and frameworks: |

| Learning and Teaching Strategies |
|---|

| استراتيجيات التعلم والتعليم | |
|---|---|
| **Strategies** | Web design is foundational material for computer science: Many areas of computer science require the ability to work with concepts from web design technologes, specifically material from such HTML, CSS, and Java Script.<br>The main strategy that will be adopted in delivering the Web design structures module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. The module will include a combination of classes, and interactive tutorials. |

| **Student Workload (SWL)**<br>الحمل الدراسي للطالب محسوب لـ ١٥ اسبوعا | | | |
|---|---|---|---|
| **Structured SWL (h/sem)**<br>الحمل الدراسي المنتظم للطالب خلال الفصل | 79 | **Structured SWL (h/w)**<br>الحمل الدراسي المنتظم للطالب أسبوعيا | 5.1 |
| **Unstructured SWL (h/sem)**<br>الحمل الدراسي غير المنتظم للطالب خلال الفصل | 71 | **Unstructured SWL (h/w)**<br>الحمل الدراسي غير المنتظم للطالب أسبوعيا | 4.7 |
| **Total SWL (h/sem)**<br>الحمل الدراسي الكلي للطالب خلال الفصل | **150** | | |

**Module Evaluation**
تقييم المادة الدراسية

| | | Time/Number | Weight (Marks) | Week Due | Relevant Learning Outcome |
|---|---|---|---|---|---|
| **Formative assessment** | **Quizzes** | 2 | 10% (10) | 5 and 10 | LO #1, #2 and #10, #11 |
| | **Assignments** | 2 | 10% (10) | 2 and 12 | LO #3, #4 and #6, #7 |
| | **Projects / Lab.** | 2 | 10% (10) | Continuous | All |
| | **Report** | 1 | 10% (10) | 13 | LO #5, #8 and #10 |
| **Summative assessment** | **Midterm Exam** | 2hr | 10% (10) | 8 | LO #1 - #7 |
| | **Final Exam** | 3hr | 50% (50) | 16 | All |
| **Total assessment** | | | 100% (100 Marks) | | |

**Delivery Plan (Weekly Syllabus)**

| المنهاج الاسبوعي النظري | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to Web Development |
| **Week 2** | HyperText Markup Language and Cascading Style Sheets |
| **Week 3** | JS Functions and Objects |
| **Week 4** | JavaScript and HTTP (forms) |
| **Week 5** | Database Interaction & UI |
| **Week 6** | Mathematical Structure for Computer Science |
| **Week 7** | Front End Libraries & Frameworks |
| **Week 8** | Exam |
| **Week 9** | Intro to Programming with the use of JavaScript |
| **Week 10** | Website Structure and Hosting |
| **Week 11** | Creating stylish Websites |
| **Week 12** | Creating HTML Forms |
| **Week 13** | **Preparatory week before the final Exam** |

| **Delivery Plan (Weekly Lab. Syllabus)**<br>المنهاج الاسبوعي للمختبر | |
|---|---|
| | **Material Covered** |
| **Week 1** | Introduction to HTML |
| **Week 2** | Introducing Flexbox |
| **Week 3** | JavaScript for Front-end |
| **Week 4** | Syntax & Creating Concepts with JavaScript |
| **Week 5** | Design Patterns & Object Modelling |
| **Week 6** | HTTP Requests & Routes |
| **Week 7** | Intro to Build Tools |
| **Week8** | Express Framework, Building scalable web applications |
| **Week9** | OOPS |

| | |
|---|---|
| **Week10** | JSON & AJAX |
| **Week11** | Development Environment & Tools |

| **Learning and Teaching Resources**<br>مصادر التعلم والتدريس | | |
|---|---|---|
| | **Text** | **Available in the Library?** |
| **Required Texts** | - -How the Internet Works, Preston Gralla, Pearson Education, Eighth Edition.<br>-Internet for Everyone, Alexis Leon, S. Chand (G/L) & Company Ltd; Second Edition. | Yes |
| **Recommended Texts** | - -DATA COMMUNICATIONS AND NETWORKING, Fourth Edition, Behrouz A. Forouzan<br>- "Web Programming Step by Step" by Marty Stepp, Jessica Miller, Victoria Kirst.<br>-A useful web site for learning more about web development<br>- Available here: https://www.geeksforgeeks.org/web-1-0-web-2-0-and-web-3-0-with-their-difference/<br>- (1970) https://websitebuilders.com/how-to/glossary/web2/<br>- Available here: https://askanydifference.com/difference-between-web-1-0-and-web-2-0-with-table/ | Yes |
| **Websites** | http://www.w3schools.com<br>Tutorial points Simply easy learining | |

| **Grading Scheme**<br>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 | راسب (قيد المعالجة) | (45-49) | More work required but credit awarded |
| | **F** – Fail | راسب | (0-44) | Considerable amount of work required |
| | | | | |

**Note:** Marks 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.