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**COMSATS Institute of Information Technology Islamabad, Attock Campus**

# Department of Computer Science

**Syllabus Fall 2021**

## Course code and Title

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| --- | --- |
| **CSC336** | **WEB TECHNOLOGIES** |

1. **Course Prerequisites**

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| --- | --- |
| **Course Code** | **Title** |
| CSC241 | Object Oriented Programming |

1. **Instructor’s Information**

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| --- | --- |
| **Full Name:** | Tahira Sadaf |
| **Email:** | tahira\_sadaf@ciit-attock.edu.pk |
| **Contact Number** |  |
| **Office Hours & Location** |  |
| **Teaching Assistant (if any)** |  |

1. **Course Composition**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Credit Hours | Weekly | Duration (hrs) | Contact Hours |
| **Lectures** | 2 | 2 | 1.0 | 2.0 |
| **Laboratories** | 1 | 1 | 3.0 | 3.0 |

1. **Course Description**

This course introduces the modern Web technologies used for the Web development. The course aims at providing the basic understanding of word-wide web and overview of different web technologies. Topics include: Overview of Web Platforms; Web Architecture; Tiered Architecture; Web Standards and Constraints; Client-side Technologies: HTML Documents, HTML Tags, Use of Tables, CSS and its Working, Form Creation and Uses; Scripting Languages: Client and Server Side Script, JavaScript, AJAX; Server-side Technologies: Dynamic Web Page Creation, Server-side programming using PHP, Use of Databases in Web-based Applications, Database Queries, Use of Web APIs; Programming Via Platform-Specific APIs; Programming Under Platform Constraints.

1. **Text book**
2. Beginning PHP and MySQL From Novice to Professional, Fourth Edition, W. Jason Gilmore
3. The Modern Web: Multi-Device Web Development with HTML5, CSS3, and JavaScript, Gasston, P., 1st Edition (2013). No Starch Press.
4. Wrox, Beginning HTML, XHTML, CSS and JavaScript, Jon Duckett
5. John Wiley & Sons Web Engineering, The discipline of systematic development of web applications
6. **Course Assessment**

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| --- | --- | --- |
| **Evaluation methods** | **Theory Weight (%)[T]** | **Lab Weight(%)[L]** |
| Quizzes | 15 | 15 |
| Assignments | 10 | 10 |
| Sessional Exam(I and II) | 10+15 | 10+15 |
| Terminal Exam | 50 | 50 |
| Total | 100 | 100 |
| **Total =T+L** | **T=(T/100)\*67** | **L=(L/100)\*33** |

The course teacher may select any one of the above weightage as per the course credit hours.

## Course Outline and Contents

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| --- | --- | --- | --- |
| **Lecture** | **CDF**  **Unit #** | **Topics Covered** | **Textbook Section** |
| 1. | 1 | Introduction to world-wide-web, What is web engineering? Why Web Engineering? Categories of web applications Characteristics of web applications | Wiley & Sons:  Ch1 |
| 2. | 1 | Client Server Architecture, Web Servers, Clusters, Two Tier & N-tier Architecture | Wiley & Sons:  Ch 1 |
| 3. | 2 | Introduction to HTML, HTML Tags, Forms, Tables | Duckett: Ch1,  2,3 |
| 4. | 3 | Form tag, Lists, Form methods, GET&POST | Duckett: Ch1,  2,3 |
| 5. | 3 | Introduction to CSS, types of CSS, Selectors | Duckett: Ch4 |
| 6. | 3 | Inheritance, descendant, Id, Type Selectors | Gaston: Ch8 |
| 7. | 3 | CSS: Sibling & Id Selectors | Gaston: Ch8 |
| 8. | 3 | Pseudo Elements, Pseudo Classes, Designing with HTML&CSS | Gaston: Ch2 |
| 9. | 3 | CSS Positioning: Absolute & Relative positioning, BOX Model in CSS | Gaston: Ch2 |
| 10. | 4 | CSS Rules, Media Rules, Media Queries | Gaston: Ch3 |
| 11. | 4 | CSS3: layouts using Media Rules & Media Queries, Introduction to Bootstrap | Gaston: Ch3 |
| 12. |  | Sessional-1 |  |
| 13. | 4 | DOM: Document Object Model, Window object model,  properties, methods, events | Duckett:  Ch11, 12 |
| 14. | 4 | Introduction to JavaScript | Reference  book |
| 15. | 6 | JavaScript variables, functions | Gilmore: Ch1,  3, 4, 5 |
| 16. | 6 | JavaScript arrays, function calling, JavaScript object literals | Gilmore: Ch13 |
| 17. | 6 | Introduction to PHP, PHP variables | Gilmore: Ch18 |
| 18. | 6 | PHP functions, Arrays, Form Handling with PHP | Gilmore:  Ch25, 30 |
| 19. | 6 | PHP Inheritance, PHP classes |  |
| 20. | 6 | PHP MySQL connectivity | Jason Gilmore:  Ch9 |
| 21. | 6 | PHP CURD operations with MySQL | Gilmore: Ch20, 31 |
| 22. | 6 | Introduction to JQuery | Internet Resources |
| 23. | 6 | JQuery Chaining, callback | Internet Resources |
| 24. | 5 | Introduction to AJAX | Internet Resources |
| 25. | 5 | AJAX with MySQL | Internet Resources |
| 26. |  | Sessional-2 |  |
| 27. | 5 | Introduction to search Engine Optimization | Internet Resources |
| 28. | 5 | Introduction to AngularJS, Code Example | Internet Resources |
| 29. | 5 | .Net Framework: MVC concepts |  |
| 30. | 5 | .Net Framework: MVC concepts with Code Example |  |
| 31. | 7 | Overview of Latest technologies i-e Node.JS, Angular JS,  Mean stack |  |
| 32. | 8 | Using Framework for development, API Access, Web hosting,  SEO techniques. |  |
|  |  | **Terminal Examination** |  |

1. **Course Learning Outcomes (CLO)and Program Learning Outcomes**

Upon completion of the course, students will be able to:

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| --- | --- | --- |
| **CLO** | **Description** | **PLO** |
| **C1** | Describe fundamental concepts of web architectures and applications | a-1 |
| **C2** | Design effective and aesthetically pleasing clients using client-side technologies | c-2, i-2 |
| **C3** | Develop dynamic clients using modern development technologies | c-2, i-2, h-2 |
| **C4** | Use latest technologies, tools and techniques required for web development | i-1 |

## Program Learning Outcomes (PLOs)

|  |  |
| --- | --- |
| **PLO** | **Description** |
| **a-1** | Use knowledge of computing to solve problems |
| **c-2** | Implement a computer-based system, process, component, or program to meet desired  needs |
| **i-2** | Ability to use current tools necessary for computing practice |
| **h-2** | Independently identify and use information sources(such as the Internet or the library) to  accomplish a given assignment |
| **i-1** | Ability to use current techniques or skills necessary for computing practice |

1. **Assessment Schedule - Tentative**

Give your tentative assessment plan with submission due date.

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| --- | --- | --- | --- |
| **S.**  **No.** | **Artifact** | **Due Date** | **Remarks** |
| 1 | Assignment 1 | Before First Sessional |  |
| 2 | Sessional 1 |  |  |
| 3 | Assignment 2 | Before Second Sessional |  |
| 4 | Assignment 3 | Before Second Sessional |  |
| 5 | Sessional 2 |  |  |
| 6 | Assignment 4 | Before Terminal |  |
| 7 | Terminal Examination |  |  |

The course teacher may add quizzes, project or more assignment as he/she may deemed fit

## Policy & Procedures

* + **Attendance Policy:** Every student must attend 80% of the lectures delivered in this course and 80% of the practical/laboratory work prescribed for the respective courses. The students falling short of required percentage of attendance of lectures/seminars/practical/laboratory work, etc., shall not be allowed to appear in the terminal examination of this course and shall be treated as having failed this course.
  + **Grading Policy:** The minimum pass marks for each course shall be 50%. Students obtaining less than 50% marks in any course shall be deemed to have failed in that course. The correspondence between letter grades, credit points, and percentage marks at CIIT shall be as follows:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Grade** | **A** | **A-** | **B+** | **B** | **B-** | **C+** | **C** | **C-** | **D** | **F** |
| **Marks** | 90 - 100 | 85 - 89 | 80 - 84 | 75 - 79 | 70 - 74 | 65 - 69 | 60 - 64 | 55 - 59 | 50 - 54 | <50 |
| **Cr. Point** | 4.0 | 3.7 | 3.3 | 3.0 | 2.7 | 2.3 | 2.0 | 1.7 | 1.3 | 0.0 |

* + **Missing Exam:** No makeup exam will be given for final exam under any circumstance. When a student misses Sessional 1 or Sessional 2 for a legitimate reason (such as medical emergencies), his grade for this exam will be determined based on the Department policy. Further, the student must provide an official excuse within one week of the missed exam.
  + **Academic Integrity:** All CIIT policies regarding ethics apply to this course. The students are advised to discuss their grievances/problems with their counsellors or course instructor in a respectful manner.
  + **Plagiarism Policy:** Plagiarism, copying and other anti-intellectual behavior are prohibited by the university regulations. Violators may have to face serious consequences.