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**Department of Computer Science and Information Technology**

**College of Science**

**University of Salahaddin**

**Subject: Web Programming I**

**Course Book: (Year 3)**

**Lecturer's name: Saja Attallah Muhammed,**MSc

**Academic Year: 2022/2023**

**Course Book**

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| **1. Course name** | **Web Programming II** | |
| **2. Lecturer in charge** | **Saja A. Muhammed** | |
| **3. Department/ College** | **Science/Copmuter science and Information Technology** | |
| **4. Contact** | **e-mail: Saja.Muhammed@su.edu.krd** | |
| **5. Time (in hours) per week** | **Theory: 2**  **Practical: 2** | |
| **6. Office hours** | **Sunday: 12:00pm-2:00pm** | |
| **7. Course code** |  | |
| **8. Teacher's academic profile** | **Bsc. Computer Scince from Baghdad Uni./2002**  **Msc. Computer Scince from Salahaddin Uni./2014** | |
| **9. Keywords** | **Java Script, jQuery, DOM,Web Design, Web Programming, front end scripting language** | |
| **10. Course overview:**  Web design and development skills are much in demand. This course aims to provide beginners with the fundamental conceptual and practical skills needed to master the creation of basic websites.  The Web Design & Development I curriculum is an introduction to the design, creation, and maintenance of web pages and websites. Students learn how to critically evaluate website quality, learn how to create and maintain quality web pages, learn about web design standards and why they're important, and learn to create and manipulate images. The course progresses from introductory work on web design to a culminating project in which students design and develop websites for local community organizations.  Web design and development is an area of study encompassing everything involved in building a website, from the coding at work behind the scenes, to the design of the user-interface, to content management. Many companies hire designers and developers separately; however, designers and developers often work closely, and it be hooves each to have a working knowledge of the other's area of study. A degree in this field will teach many skills transferable to a wide range of other careers. From learning about web graphics to the basics of animation to communication and marketing, the classes you take towards a degree in web design and development will give you the tools and knowledge necessary to excel in many different career paths. | | |
| **11. Course objective:**  Students will gain the skills and project-based experience needed for entry into web design and development careers.  Students will be able to use a variety of strategies and tools to create websites.  Students will develop awareness and appreciation of the myriad ways that people access the web and will be able to create standards-based websites that are accessible and usable by a full spectrum of users. | | |
| **12. Student's obligation**   1. Attendance is an essential requirement for all students 2. Submit assignments in a timely manner as expected. 3. Participating in competitions in lab. 4. Show respect, civil language, appropriate dress, and proper decorum at all times, both in and out of the classroom. 5. Using mobiles are not allowed in the classes and labs. 6. Respect examinations rules. | | |
| **13. Forms of teaching**   1. Power point slides. 2. Data show 3. White board 4. Videos and images | | |
| **14. Assessment scheme**  Theoretical: 15 marks  (10 mark examinations + 3 mark quizzes +2 mark weekly activities inside class)  Practical : 35 marks  (20 mark examinations + 5 marks weekly competition+ 5 mark quizzes +5 mark weekly activities inside lab)  Final  %50  ؟‌ | | |
| **15. Student learning outcome:**  • students will learn JavaScript programming language.  They will be able to deal with all page elements e.g: texts, images, tables, forms through js code.  They will get all necessary information and coding tools to perform CRUD operations on HTML elements through DOM methods  They will be able to use js libraries like jQuery, ajax  They will be able to add interactive css styles | | |
| **16. Course Reading List and References‌:**   * Internet and World Wide Web How to Program, 4th Ed.; Harvey M. Deitel and Paul J. Deitel; © 2008, 1424 pp, Paperback; Publisher: Prentice Hall; 4th Ed. (Septembar 5, 2007); ISBN-10: 0-131-75242-1; ISBN-13: 978-0131752429. * Zakas, N. C.(2009) Professional JavaScript® for Web Developers (2nd Ed). Wiley Publishing, Inc., Indianapolis, Indiana * Robbins, J. N.(2012)Learning Web Design Fourth Edition A Beginner’s Guide to HTML, CSS, JavaScript, and Web Graphics. y O’Reilly Media:Canada * [www.w3schools.com](http://www.w3schools.com) * [www.tutorialspoint.com](http://www.tutorialspoint.com) | | |
| **17. The Topics:** | | **Lecturer's name** |
| **Week1: Introduction to JavaScript**:  Scripting Language vs. Programming Language  Intro. to JavaScript JS  Inserting JS Code Into HTML  JS OUTPUT  External Scripting  JS Statements  Data Type and typeof Operator | | Saja A. Muhammed  Shakhawan H. Mahmood  (2 hrs)  week 1 |
| **Week2**:  JS var, let & const,  Variables,  String,  Objects &  Arrays  JavaScript Operators  Keywords and Reserved Words | | Saja A. Muhammed  (2 hrs)  week 2 |
| **Week3**:  Data Type Conversions in JS  if statement in JS  While & do..while  For statement | | Saja A. Muhammed  (2 hrs)  week 3 |
| **Week 4:**  User Input Data –Dialog Box  Labelled, break and continue Statements  Switch Statement  JS Functions  Events | | Saja A. Muhammed  (2 hrs)  week 4 |
| **Week 5:**  Event Flow  Assigning and Removing of Event Handlers  Java Script Date & Time Methods  Document Object Model  NodeType&nodeName  Node Relationships  Manipulating Nodes | | Saja A. Muhammed  (2 hrs)  week 5 |
| **Week 6,7:**  The Document Type and Children  The Document <body> and <! DOCTYPE>  The Document Information  Locating Elements  Attributes in JS  Text Nodes  Manipulating The Text Node  Accessing Element Styles  DOM Style Properties and Methods  Computed Styles- getComputedStyle()  Working with Style Sheets  Form Basics  Scripting Select Boxes  The Window Object  JS Browser Object Model: JS Cookies, JS Window, JS Location, JS Popups, JS Time. | | Saja A. Muhammed  (2 hrs)  week 6,7 |
| **Week 8,9: jQuery**  jQuery (Javascript Library): Introduction and Installation, Syntax, jQuery Selectors, jQuery Events, jQuery Effects (jQuery Hide and Show Effect, jQuery Fade Effect, jQuery Slide Effect, jQuery Animate), jQuery Callbacks, jQuery and HTML (jQuery Get, jQuery Set, jQuery Add, jQuery Remove, jQuery css, jQuery Width, jQuery Height), etc.  &  Responsive Themes | | Saja A. Muhammed  (2 hrs)  Week 8-9 |
| **Week 10,12: Ajax and Jason**  AJAX Intro  AJAX XMLHttp  AJAX Request  AJAX Response  AJAX XML File  AJAX PHP  AJAX ASP  AJAX Database  AJAX Applications  AJAX Examples  JSON  JSON Intro  JSON Syntax  JSON vs XML  JSON Data Types  JSON Parse  JSON Stringify  JSON Objects  JSON Arrays  JSON Server  JSON PHP  JSON HTML  JSON JSONP | | Saja A. Muhammed  (2 hrs)  Week10-12 |
| **Week 13,14:**  Error Handling and Debugging | | Saja A. Muhammed  (2 hrs)  Week 13-14 |
| Week 15: **Second Mid Exam** | |  |
| **18. Practical Topics** | |  |
| **Week1:**  <script>  JS OUTPUT : document.write(),document.writeln(), console(), innerHTML, alert(), update input box content with result  External Scripting and include file via <script>  JS Statements examples about finding simple area  Data Type and **typeof** Operator examples: number, Boolean, object, NaN, string……. | | Saja A. Muhammed  (2 hrs)  Week 1 |
| **Week2**:  Different examples about declaring JS var with let & const, inside and outside blocks  Variable declaring  All String methods and operators: length, indexOf(), replace(), concat(),slice(start, end), substring(start, end), substr(start, length), toUpperCase(), toLowerCase(),charAt() , trim()  charCodeAt()  Objects: declare and manipulate object data  Declaring, and manipulating Arrays data and  array methods: toString(),join(), sort(), reverse(),pop(), push(), shift() and unshift(), concat(), splice(), splice(), slice(From, To ),  Javascript Math Object: Math.round(x), Math.pow(x, y) , Math.sqrt(x), Math.abs(x), Math.min() and Math.max(), Math.ceil(x), Math.floor(x), Math.sin(), Math.cos(), Math.PI,  random()  JavaScript Operators examples: arithmetic, assignment, comparison, logical operators  Keywords and Reserved Words | | Saja A. Muhammed  (2 hrs)  Week 2 |
| **Week 3:**  Data Type Conversions in JS: Number(), parseInt(), parseFloate(), string(), toString()  if statement in JS: syntax and different examples  While & do..while: syntax and different examples  For statement: syntax and different examples  For in and for of : syntax and different examples | | Saja A. Muhammed  (2 hrs)  Week 3 |
| **Week4:**  User Input Data –Dialog Box :prompt(), inputboxes  Examples about:  **Labelled**, **break** and **continue** Statements  **Switch** Statement  JS **Functions**: declaring different types of functions: expression function, declaration function, anonymous functions with multi different exercises  Events: onclick(), oncopy, onkeydown(), ondbclick(),…… | | Saja A. Muhammed  (2 hrs)  Week 4 |
| **Week 5:**  Event Flow: Bubbling, capturing, addEventListener() & removeEventListener()  Assigning and Removing of Event Handlers  Java Script Date & Time Methods: getDate(), getDay(), getFullYear(), getHours(),getUTCDate(), getUTCMonth(), getUTCMilliseconds(), getUTCSeconds(), getUTCFullYear()  Document Object Model: hasChildNodes(), getRootNode(), isSameNode(), appendChild(), replaceChild(,), removeChild(), nodeType(), parentNode(), parentElement(), childNodes(), createElement(),removeChild(), firstChild(), lastChild(), previousSibling(), nextSibling(), nodeValue(), textContent(), innerText , innerHTML,  NodeType & nodeName, , Node Relationships, Manipulating Nodes  Almost all DOM Methods | | Saja A. Muhammed  (2 hrs)  Week 5 |
| **Week 6:**  The Document Type and Children: retrieving and manipulating document type node  The Document <body> and <! DOCTYPE>& The Document Information: document.title, document.URL, document.domain, document.referrer, document.links, document.anchors, document.forms, document.images,  Locating Elements: getElementById().getElementsByTagName()  getElementsByName(). And getElementsByClassName() .  Attributes in JS: attributes[], getAttribute(), setAttribute(), and removeAttribute(),outputAttributes(), getAttribute(), setAttribute(), createAttributeNode()….  Text Nodes: get and manipulate text nodes: createTextNode(),deleteData( offset , count ), appendData(text), insertData( offset , text ), replaceData(offset,count , text ), splitText( offset ), substringData( offset , count )  Normalizing Text Nodes:normalize(), split() | | Saja A. Muhammed  (2 hrs)  Week 6 |
| **Week 7:**  Accessing Element Styles: using style object: styleSheets[], cssRule[], style, getPropertyValue(propertyName), getPropertyPriority(propertyName), Length, cssText, item(index), removeProperty( propertyName ), setProperty(propertyName , value , priority),  DOM Style Properties and Methods  Computed Styles- getComputedStyle()  Working with Style Sheets: styleSheets[].disabled, href, media  Form Basics:forms[],acceptCharset, Action, Elements, method, name, reset(), submit(), Target,….  Common Form - Field Properties: disabled, form, name, readOnly, Type, value,……  Scripting Select Boxes : add(newOption, relOption), Multiple, Options, remove, selectedIndex, size, index, label, selected, text, value, …….  The Window Object: open(), close() , window.stop() , print(), …  document.cookie  window.innerHeight | | Saja A. Muhammed  (2 hrs)  Week 7 |
| **Week 8,9:** jQuery  jQuery (Javascript Library): Introduction and Installation, Syntax, jQuery Selectors, jQuery Events, jQuery Effects (jQuery Hide and Show Effect, jQuery Fade Effect, jQuery Slide Effect, jQuery Animate), jQuery Callbacks, jQuery and HTML (jQuery Get, jQuery Set, jQuery Add, jQuery Remove, jQuery css, jQuery Width, jQuery Height), etc.  jQuery hide(),jQuery fadeIn(),jQuery fadeOut(),jQuery fadeToggle(),jQuery fadeTo(),slideDown(),slideUp(),slideToggle(),animate(),callback function,jQuery Get, jQuery Set, jQuery Add, hides the current element.  $(this).hide(),jQuery Remove, jQuery css, jQuery Width, jQuery Height)  &  Responsive Themes | | Saja A. Muhammed  (2 hrs)  Week 8-9 |
| **Week 10,12:**  Ajax and Jason  AJAX Intro  AJAX XMLHttp  AJAX Request  AJAX Response  AJAX XML File  AJAX PHP  AJAX ASP  AJAX Database  AJAX Applications  AJAX Examples  JSON  JSON Intro  JSON Syntax  JSON vs XML  JSON Data Types  JSON Parse  JSON Stringify  JSON Objects  JSON Arrays  JSON Server  JSON PHP  JSON HTML  JSON JSONP | | Saja A. Muhammed  (2 hrs)  Week 10-12 |
| **Week 13,14:**  Error Handling and Debugging | | Saja A. Muhammed  (2 hrs)  Week 13-14 |
| Second Mid Exam | | Week 15 |
| **19. Examinations:**  **Answer All (5) Questions**  **Q1) Fill in the blanks with the correct answer: (5 Marks)**   1. **\_\_\_\_\_\_**Indicates that the execution of the script can safely be delayed until after the document’s content has been completely parsed and displayed. 2. The **\_\_\_\_\_\_** method returns an array with the deleted items: 3. \_\_\_\_\_\_\_\_Returns the month, according to universal time (from 0-11) 4. **var** n=null; **typeof** n; will return \_\_\_\_\_\_. 5. **var** X=10; {let x=2;} alert(x); will return \_\_\_\_\_\_\_\_\_\_   **Q2) Mention Four differences between scripting languages and programming languages. (2 Marks)**  **Q3)Write the result that each alert and document.write will show? (4 Marks)**  b) var colorArr=['red','blue','green'];  colorArr.push('brown');  **alert(colorArr);**   1. <script>   var str='11';  var s=0xF;  var n='0.5.u';  var z=parseFloat(n)+Number(s,10)+str.toString();  **alert(z);**  d) <p id='n'>Welcome <i>to</i><b>javascript</b><u>lab</b></p>  <script>  var node1=document.getElementById('n');  **alert( node1.childNodes[2].nodeName);**  **alert(node1[0].hasChildNodes());**  </script>  c) function sum(num1, num2) {  return num1 + num2;  **alert('Hello world');** }  **sum(10,20)**  Q4)  Follow English Language noun pluralizing rules to pluralize nouns using JS, user enters a noun in the box, clicking on pluralize button will add s or es to word according to these rules:  If the noun ends with s,x,sh,ch,z,ss add es Otherwise add s.  e.g: bo**x** 🡪box**es** to**y** 🡪toy**s** | | Saja A. Muhammed (1.5 hrs) |
| **21. Peer review پێداچوونه‌وه‌ی هاوه‌ڵ**  .‌‌ | |  |