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| **Department/Institute Name** | Department of Computer Science and Engineering / Chitkara University Institute of Engineering & Technology | | |
| **Program Name** | BE -Computer Science and Engineering | | |
| **Course Code** | CS111 | | |
| **Course Name** | Introduction to Web technologies | | |
| **Lecture / Tutorial (per week)** | 0-0-8 | **Course Credits** | 4 |
| **Course Coordinator Name** | Er. Navjeet Kaur | | |

1. **Objectives of the Course**

* Knowledge of markup language (HTML) and to enable students to build user friendly websites.
* To provide the skills and project-based experience needed for entry into web design and development careers.
* An understanding by which a student will be able to use a variety of strategies and tools to create websites.

1. **Course Learning Outcomes**

Student should be able to:

**CLO1**: Identify the basis of designing a Web site; create Web pages, links, images, tables and pages layouts in HTML.

**CLO2**: Describe and identify the use of JavaScript and successfully place it into Web pages and also recognize the uses of JavaScript.

**CLO3**: Use JavaScript to manipulate elements in the DOM to change appearance and visibility.

**CLO4**: Describe how intended website design features will specifically benefit a target user group content strategy.

1. **Recommended Books**

**RB1:** ‘Web Enabled Commercial Application Development using HTML, JavaScript, DHTML and PHP’ by Ivan Bayross, 4th Edition, BPB Publications.

**RB2:** ‘The Complete Reference HTML & XHTML’ by Thomas Powell, 5th Edition, Tata McGraw-Hill Company Limited.

**RB3:** ‘HTML 4.0’ by E. Stephen Mack, Janan Platt, Anaya Multimedia publication.

**RB4:** ‘Mastering HTML, CSS & JAVAScript Web Publishing’ by Laura Lemay, Rafe Coburn, Jennifer Kyrnin, 7th edition, SAMS publication.

**RB 5:** ‘Learning web designing: a beginner's guide to HTML, CSS, JavaScript,and web graphics’ by Niederst Robbins, 4th Edition, Oreilly Publication

**4.** **Other readings and relevant websites**

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| S.No. | **Link of Journals, Magazines, websites and Research Papers** |
| 1. 1. | <https://www.w3schools.com/> |
| 1. 2. | <http://www.quirksmode.org/dom/intro.html> |
| 1. 3. | <https://www.codeschool.com/courses/front-end-foundations> |
| 1. 4. | <https://www.w3schools.com/jquery/> |
| 1. 5. | <http://nptel.ac.in/courses/106105084/13> |

1. **Recommended Tools and Platforms**

Sublime Text

1. **Course Plan**

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| **Lecture No** | **Topic** | **Details** |
| 1-2 | Web programming and HTML5 | Introduction to web programming, client server architecture, DNS, latest trends, static and dynamic content, WWW3C standards, difference between HTML & HTML5. |
| 3-4 | Basics of HTML5, understanding document tags. HTML5 formatting | Formatting tags e.g. font, Bold, italic, super script, subscript, delete, mark etc. HTML5 Quotations: q tag, blockquote, Code, abbreviation, address, cite, bi-directional override tag, header, footer and output Tag, meta data and meta tag. |
| 5-6 | Lists | Ordered, Unordered, Definition List. |
| 7-10 | Introduction to LINK | anchor element, internal linking and external linking, attribute of anchor tag. |
| 11-12 | Images | image basics, image tag, Image alignment, image map and attributes of image and map. |
| 13-16 | Table | Table tag with attributes like width, alignment, cell spacing, cell padding, cell alignment, borders rules, rows, cells, rowspan, colspan, header, footer, body sections, captions and background images. |
| 17-20 | HTML Frames | Introduction to frameset tag, frame tag, iframes and respective attributes. |
| 21-22 | Form | Creating form, add labels, text box, check box, radio buttons, password, pull down menus and button to a form , Use of clickable image as a submit button, pass information between forms (action ,method). |
| **Formative Assessment-1 (Lecture 1-22)** | | |
| 23-24 | DHTML and CSS | Introduction to DHTML, introduction to CSS3, ways to Insert CSS in HTML document (External Style Sheet, Internal Style Sheet, Inline Styles), CSS id and class, div and span tag. |
| **ST-1 (Lecture 1-24)** | | |
| 25-30 | CSS Properties | CSS background: background color, background image (repeat horizontally or vertically, set position and no-repeat) CSS Text: text color, text alignment, text decoration CSS Font: style, family, Size CSS lists, CSS Links |
| 31-34 | CSS Properties | CSS Tables: Table borders, collapse borders, table width and height ,table text alignment, table padding, table color CSS border: style, width, color. CSS margin: margin, padding |
| **Formative Assessment-2 (Lecture 23-34)** | | |
| 35-36 | **Project: HTML Tutorial Website** | |
| 37-38 | Introduction to Javascript & Basics | What is Javascript, How does Javascript relate to Java, Javascript Landscape, Javascript console, Inline Javascipt, External file, First javascript program, Dialog Boxes in Javascript, Debugging |
| 39-44 | Working with data | Variables, Data Types, Arithmetic operators and math, Strings and numbers, Conditional statement and Logic, Conditional Operators, Loops, Arrays, Properties and methods in Array, Nested Arrays, using the parseInt(), Date object, Math object, String object |
| 45-50 | Functions and Objects | Build a basic function, Add arguments to a function, return values, Anonymous Functions, ~~Immediately invoked functional expressions~~, variable scope, let and const, Objects, ~~Objects constructors~~, Dot and Bracket Notation, ~~Using objects for Lookups~~, Nested Objects~~, Closures.~~ |
| 51-52 | Event Handling | onblur, onchange, ondbclick, onclick, onfocus, onkeydown, onkeyup, onkeypress, onload, onunload, onmouseover, onmouseout, onmousedown, onmouseup, onmousemove, onreset, onselect, onsubmit. |
| **Formative Assessment-3 (Lecture 37-60)** | | |
| 53-60 | Javascript and DOM : Changing DOM elements | DOM - Document Object Model, Target Elements with query selector Methods(id, tagname, classname, name), Access and Change elements, Access and Change attributes, Add DOM elements(create, append), Apply Inline CSS to an element(using .style/setattribute) |
| 61-68 | Regular Expressions | Using the Test method, Match Literal Strings, Extract Matches, Match Anything with Wildcard Period, Match Single Characters Not Specified, Match Beginning String Patterns, Match Everything But Letters and Numbers, Match Whitespace, Check for All or None, Remove Whitespace from Start and End |
| 69-72 | **Project : Create an Analog Clock** | |
| **ST-2 (Lecture 25-72)** | | |
| 73-76 | Javascript and DOM : Events | DOM events, Trigger functions with event Handlers, Add and use Event handlers, Pass arguments via event listeners |
| 77-78 | **Project : Typing Speed tester** | |
| **Formative Assessment-4 (Lecture 53-76)** | | |
| 79-80 | Form Validation | Data validation and constraint validation in HTML forms. |
| **ST-3(Lecture 1-80)** | | |

1. **Evaluation Scheme (Theory)**

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| Component 1\* | Formative Assessments (FAs) | 20 |
| Component 2\*\* | Sessional Tests (STs) | 30 |
| Component 3\*\*\* | End Term Examination | 50 |
|  | **Total** | **100** |

\* There are four Formative Assessments (FAs), average of best three will be considered.

**\*\***There will be three sessional tests out of which best two will be considered for evaluation. Each test will be of 30 marks.

**\*\*\***The End Term Comprehensive examination will be held at the end of semester. The mandatory requirement of 75% attendance in all theory classes is to be met for being eligible to appear in this component.

**EVALUATION COMPONENTS**

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| --- | --- | --- | --- | --- | --- |
| **Type of Assessment** | **Time of Conduction** | **Total Marks** | **Question Paper Format** | | |
| **1 Mark MCQ** | **5 Mark Coding** | **10 Mark Coding** |
| Formative Assessment 1 | Week 3 | 20 | 10 | - | 1 |
| Sessional Test 1 | Week 4 | 30 | 10 | 2 | 1 |
| Formative Assessment 2 | Week 5 | 20 | 10 | - | 1 |
| Formative Assessment 3 | Week 8 | 20 | 10 | - | 1 |
| Sessional Test 2 | Week 10 | 30 | 10 | 2 | 1 |
| Formative Assessment 4 | Week 11 | 20 | 10 | - | 1 |
| Sessional Test 3 | Week 12 | 30 | 10 | 2 | 1 |
| End Term Examination | | 50 | 10 | 4 | 2 |

1. **SYLLABUS**

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| --- | --- | --- |
| **Contents** | **Lectures** | **Weightage(%age)** |
| Introduction to web programming, client server architecture, DNS, latest trends, static and dynamic content, WWW3C standards, difference between HTML & HTML5. Formatting tags e.g. font, Bold, italic, super script, subscript, delete, mark etc. HTML5 Quotations: q tag, blockquote, Code, abbreviation, address, cite, bi-directional override tag, header, footer and output Tag, meta data and meta tag.  Ordered, Unordered, Definition List. anchor element, internal linking and external linking, attribute of anchor tag.  image basics, image tag, Image alignment, image map and attributes of image and map.Table tag with attributes like width, alignment, cell spacing, cell padding, cell alignment, borders rules, rows, cells, rowspan, colspan, header, footer, body sections, captions and background images. | 16 | 20% |
| Introduction to frameset tag, frame tag, iframes and respective attributes.  Creating form, add labels, text box, check box, radio buttons, password, pull down menus and button to a form , Use of clickable image as a submit button, pass information between forms (action ,method). | 6 | 7% |
| Introduction to DHTML, introduction to CSS3, ways to Insert CSS in HTML document (External Style Sheet, Internal Style Sheet, Inline Styles), CSS id and class, div and span tag. CSS background: background color, background image (repeat horizontally or vertically, set position and no-repeat)CSS Text: text color, text alignment, text decoration. CSS Font: style, family, Size. CSS lists, CSS Links. CSS Tables: Table borders, collapse borders, table width and height ,table text alignment, table padding, table color. CSS border: style, width, color. CSS margin: margin, padding | 12 | 18% |
| What is Javascript, How does Javascript relate to Java, Javascript Landscape, Javascript console, Inline Javascipt, External file, First javascript program, Dialog Boxes in Javascript, Debugging. Variables, Data Types, Arithmetic operators and math, Strings and numbers, Conditional statement and Logic, Conditional Operators, Loops, Arrays, Properties and methods in Array, Nested Arrays, using the parseInt(), Date object, Math object, String object. Build a basic function, Add arguments to a function, return values, Anonymous Functions, Immediately invoked functional expressions, variable scope, let and const, Objects, Objects constructors, Dot and Bracket Notation, Using objects for Lookups, Nested Objects, Closures . onblur, onchange, ondbclick, onclick, onfocus, onkeydown, onkeyup, onkeypress, onload, onunload, onmouseover, onmouseout, onmousedown, onmouseup, onmousemove, onreset, onselect, onsubmit.  Using the Test method, Match Literal Strings, Extract Matches, Match Anything with Wildcard Period, Match Single Characters Not Specified, Match Beginning String Patterns, Match Everything But Letters and Numbers, Match Whitespace, Check for All or None, Remove Whitespace from Start and End | 24 | 30% |
| DOM - Document Object Model, Target Elements with query selector Methods(id, tagname, classname, name), Access and Change elements, Access and Change attributes, Add DOM elements(create, append), Apply Inline CSS to an element(using .style/setattribute). What are DOM events, Trigger functions with event Handlers, Add and use Event handlers, Pass arguments via event listeners | 18 | 22% |
| Data validation and constraint validation in HTML forms. | 2 | 3% |

**This Document is approved by:**

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| **Designation** | **Name** | **Signature** |
| Course Coordinator | Er. Navjeet Kaur |  |
| Associate Dean | Dr. Pinaki Ghosh |  |
| Deputy Dean | Dr. Meenu Khurana |  |
| Date | July 9th ,2019 |  |