



Mahatma Gandhi University Kottayam

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|---|---|----------------|-----------------|------------------|--------------------|
| Programme | BSc (Honours) Electronics with Computer Technology | | | | |
| Course Name | Responsive Web Design and Frontend Development | | | | |
| Type of Course | SEC | | | | |
| Course Code | MG5SECECT300 | | | | |
| Course Level | 300-399 | | | | |
| Course Summary & Justification | The course provides students with fundamental and practical knowledge of modern web technologies including HTML5, jQuery and Bootstrap. The prime focus is on developing responsive, user-friendly websites that work across different devices. | | | | |
| Semester | 5 | Credits | | | 3 |
| Course Details | Learning Approach | Lecture | Tutorial | Practical | Total Hours |
| | | 3 | | | |
| Pre-requisites | | | | | |

COURSE OUTCOMES (CO)

| CO No: | Expected Course Outcome | Learning Domains * | PO No: |
|--------|--|--------------------|--------|
| 1 | Understand fundamentals of web technologies and HTML | U | 1,2 |
| 2 | Use jQuery to develop interactive and dynamic web applications | A | 1,2 |
| 3 | Design responsive and user-friendly websites using Bootstrap framework | A | 1,2 |
| 4 | Introduce modern tools and real-world web development practices | A | 1,2,10 |

**Remember (K), Understand (U), Apply (A), Analyse (An), Evaluate (E), Create (C), Skill (S), Interest (I) and Appreciation (Ap)*

COURSE CONTENT

Content for Classroom transaction (Units)

| Module | Units | Course description | Hours | CO No. |
|--------|--|--|-------|--------|
| 1 | HTML, Web Fundamentals & CSS Basics | | | 1 |
| | 1.1 | Introduction to HTML, history, objectives, Basic structure (head, body), Heading, paragraph, formatting tags | 3 | |
| | 1.2 | HTML Elements & Forms-Tables, forms, input elements, TEXTAREA, SELECT, FIELDSET, IMG, IFRAME, ANCHOR | 4 | |
| | 1.3 | Lists, Layout & CSS Introduction-Lists in HTML, DIV and basic layout design, Navigation bar design, Introduction to CSS (inline, internal, external), Selectors and responsiveness | 5 | |
| | 1.4 | Web Technology Basics-WWW, HTTP/HTTPS protocols, Web browsers, DNS, Web hosting and cloud hosting, Types of hosting, Basic server setup (Windows/Linux/Unix) | 3 | |

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|---|---|---|-----|---|
| 2 | jQuery | | 2 | |
| | 2.1 | Introduction to jQuery - Overview of jQuery: history, features, advantages; Setting up jQuery: installation methods; Understanding the jQuery syntax; Selecting elements with jQuery: CSS selectors, basic filters | | 5 |
| | 2.2 | DOM Manipulation with jQuery - Traversing the DOM with jQuery; Modifying HTML content with jQuery; Adding, removing, and modifying DOM elements; Handling events with jQuery: click, hover, submit, etc. | | 5 |
| | 2.3 | Working with Forms and Form Validation - Handling form submissions with jQuery; Validating forms with jQuery; Using jQuery plugins for form validation; Implementing custom form validation with jQuery | 5 | |
| 3 | Responsive Design & CSS Frameworks | | 3,4 | |
| | 3.1 | Introduction to Bootstrap - Features, advantages; Setting up Bootstrap: installation methods; Understanding the Bootstrap grid system; Using Bootstrap components: navigation bars, buttons, forms. | | 5 |
| | 3.2 | Responsive Design with Bootstrap - Introduction to responsive web design; Using Bootstrap's responsive utilities; Creating responsive layouts with Bootstrap grid system; Designing for different screen sizes: mobile, tablet, desktop | | 5 |
| | 3.3 | Bootstrap components - Working with Bootstrap typography; Using Bootstrap's CSS classes for styling text and headings; Creating and customizing buttons and button groups; Building responsive navigation bars and dropdowns. | 5 | |
| 4 | Teacher specific content | | | |

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| Teaching and Learning Approach | Classroom Procedure (Mode of transaction) Leverage a blended learning approach with a mix of lectures, interactive discussions, and hands-on lab sessions |
| Assessment Types | MODE OF ASSESSMENT A. Continuous Comprehensive Assessment (CCA) Theory - 25 Internal Test, Assignment, Case Study/Project/ Site Visit/Workshop. |
| | B. End Semester Evaluation (ESE) Written Test (50 marks) -1 Hour 30 Minutes (Duration of Examination) 1.MCQ - 35x1= 35 Marks 2.Short Essay Question = 15 Marks (3 out 5:- 3x5) |

REFERENCES:

- 1.Thomas A. Powell, The Complete Reference HTML & CSS, Fifth Edition, 2017
2. Jon Duckett, "Web Design with HTML, CSS, JavaScript and jQuery", 1st Ed., Wiley, 2014.
3. Jake Spurlock, "Bootstrap: Responsive Web Development", O'Reilly Media, 2013.

SUGGESTED READINGS:

1. Duckett, J. "HTML and CSS: Design and Build Websites/Jon Duckett. Robson E. Head First HTML and CSS: A Learner's Guide to Creating Standards-Based Web Pages/E. Robson, E." (2012): 768.
2. Silvio Moreto, Bootstrap 4 By Example, ebook, 2016.
3. Tanweer Alam, Web Technologies, Khanna Book Publishing, 2011.
4. Haverbeke, Marijn. *Eloquent JavaScript: A modern introduction to programming*. No Starch Press, 2018.



MGU-UGP (HONOURS)

Syllabus