

COURSE SPECIFICATIONS

FACULTY OF MANAGEMENT AND COMMERCE

COURSE CODE: MIT 22043

COURSE TITLE: Web Application Development

Semester II, Academic Year 2019 / 2020

University: South Eastern University of Sri Lanka
Faculty: Management and Commerce

Course specifications

Program(s) on which the course is given:	Bachelor of Science in Management and Information Technology (BSc in MIT)
Major or minor element of programs:	IT (65%) and Management and others (35%)
Department offering the program:	Department of Management and Information Technology (DMIT)
Department offering the course:	Department of Management and Information Technology (DMIT)
Level / Year:	2
Semester:	II
Date of specification approval:	

Basic Information

Course Code:	MIT 22043
Course Title:	Web Application Development
Credit Hours	45
Lecture (Theory)	45
Tutorial	15
Practical	30
Total	90

Professional Information

This course provides students' knowledge to create professional looking websites; both static and dynamic ones. This is a specialized course that provides a comprehensive theoretical and practical knowledge in the area of web-based application. Further, this course will provide a basic understanding of the methods and techniques of developing a simple to moderately complex web site. Using the current standard web page language, students will be instructed on creating and maintaining a simple web site.

Overall aims of course

The Aims of the Course are to:

Provide opportunities to gain sufficient practical and theoretical knowledge in the field of Web designing and development.

Motivate the student to get used to the new technologies available for web technology.

Write server-side scripts within HTML to communicate with a web server and database

Enable students to analyze a system and design an appropriate, custom solution.

Develop subject related practical skills.

Provide students with the opportunities to develop their soft skills such as written and oral communication skills

Prepare students for employment, research, further professional studies such as CIW Web Foundations Associate certification (CIW Associate), Certified Web Designer (CWD), The Certified Associate Webmaster (CAW), Certified Professional in Web Development (CPWD) etc. etc. and lifelong learning by developing their intellectual, problem-solving, practical and key (transferable) skills.

Intended learning outcomes of course (ILOs)

The course provides opportunities for students to develop and demonstrate knowledge and understanding, skills and other attributes in the following areas. The program outcomes are referenced to the SLQF subject benchmark and relate to the typical student.

After successfully completing these modules, students will be able to design and develop Web sites for specified tasks using the learned Web Technologies.

1. Knowledge and understanding:

On completion of the course students will have knowledge and understanding of:

- 1.1 The basic understanding of Web pages, websites, and web information architecture.
- 1.2 Client requirements analysis, planning and designing the sitemap with examples.

- 1.3 Basic and advanced technologies for web design and development.
- 1.4 Ethical, legal and professional issues in the deployment of web designing development.

2. Intellectual skills

On completion of the course students will be able to:

- 2.1 understand the fundamental concepts of web designing and development.
- 2.2 identify different components and technologies in terms of web designing and development.
- 2.3 apply the knowledge, concepts and terms related to web designing and development.
- 2.4 acquaint themselves with the web programming languages and understanding their functional capabilities.
- 2.5 know the strategies for developing responsive web designing.
- 2.6 appreciate usefulness and importance of web communication in today life and society.
- 2.7 Learn independently, think logically and critically and demonstrate a systematic approach to problem-analysis and to finding solutions.
- 2.8 Understand and be able to define the context within which web application development can sit within and across the business as a whole (e.g., a collaborative service scenario).
- 2.9 Identify current issues in the area of web application development.
- 2.10 Build upon the experience and responsibility gained as a result of the practical application of the skills acquired during the course to make a significant contribution to web application development within an organization.

3. Professional and practical skills

On completion of the course students will be able to:

- 3.1 Select and use effectively a wide range of methods, tools and techniques used in the design and development of web applications.
- 3.2 Design, deploy, and secure reliable website infrastructure showing in depth understanding of web design and development principles and practical techniques.
- 3.3 Analyze and specify user requirements, including security policies and countermeasures for websites.

4. General and transferable skills

On completion of the course students will be able to:

4. 1 Self-Awareness

- Take responsibility for own learning and plan for and record own personal development
- Recognize own academic strengths and weaknesses, reflect on performance and progress and respond to feedback.
- Organize self effectively, agreeing and setting realistic targets, accessing support where appropriate and managing time to achieve targets.
- Work effectively without supervision in unfamiliar contexts

4.2 Communication Skills

- Express ideas clearly and unambiguously in writing and the spoken word (including CV writing)
- Present, challenge and defend ideas effectively
- Actively listen to ideas of others in an unbiased way

4.3 Interpersonal Skills

- Work well with others in a group or team
- Work flexibly and respond to change
- Discuss and debate with others and make concessions to reach agreement
- Give, accept and respond to constructive feedback
- Show sensitivity and respect for diverse values and beliefs

4. 4 Research and Information Literacy Skills

- Search for and select relevant sources of information
- Critically evaluate information and use it appropriately
- Apply the ethical and legal requirements in both the access and use of information
- Accurately cite and reference information sources
- Use software and IT technology as appropriate

4. 5 Numeracy Skills

- Handle and understand number as required for context
- Interpret and apply data to inform judgements

4.6 Management & Leadership Skills

- Determine the scope of a task (or project)
- Identify resources needed to undertake the task (or project) and to schedule and manage the resources
- Evidence ability to successfully complete & evaluate a task (or project), revising the plan where necessary
- Motivate and direct others to enable an effective contribution from all participants

4.7 Creativity & Problem-Solving Skills

- View problems from arrange of perspectives to find solutions to problems
- Imagine, create and exploit ideas
- Work with complex ideas and justify judgements made through effective use of evidence

Detailed Contents of the course

TOPIC	NO. OF HOURS	LECTURE	TUTORIAL / PRACTICAL
1. Internet / Web basics 1.1. Brief history 1.2. Web Technologies & Standards 1.3. Types of web sites	03	03	
2. Web Design overview 2.1. Web Applications Architecture 2.2. Web Page standards (navigation, download speed) 2.3. Importance of HTML, CSS, XML, WML in Web technologies	06	06	
3. Introduction to Hypertext Mark-up Language (HTML) 3.1. Understanding HTML basic tags 3.2. Working with Fonts and Attributes 3.3. Working with links 3.4. Working with Images 3.5. Creating and Working with Tables 3.6. Importance of Forms in Web Designing 3.7. Controlling layout design	09	09	10
4. Introduction to client site Script 4.1. Introduction to Java Scripts 4.2. Java script programming model & syntax 4.3. Built in objects in Java scripts 4.4. Use of Functions & arrays in Java Scripts	06	06	10
5. Understanding Server-Side Technologies 5.1. Introduction to Server-Side Technologies (Microsoft .Net, Java	06	06	

**Technology & Open Source
Technology)****5.2. Advantage and Disadvantages of
Server-Side Scripts**

6. Introduction to Open Source: PHP	06	06	10
6.1. PHP & IIS Server Installation			
6.2. Introduction to PHP Programming			
6.2.1. Basic PHP Syntax			
6.2.2. Sending Data to Web Browser			
6.2.3. Variables in PHP			
6.2.3.1. Strings, numbers, or arrays			
6.2.4. Operators in PHP			
6.2.4.1. Arithmetic Operators			
6.2.4.2. Comparison Operators			
6.2.4.3. Logical Operators			
6.2.5. Conditional Statements in PHP			
6.2.5.1. Switch Statement			
6.2.5.2. If Statement			
6.2.5.3. Looping			
6.2.6. Functions in PHP			
6.2.7. PHP Server Variables			
6.2.8. Creating Validating FORMs in PHP			
6.2.9. Cookies and Sessions in PHP			
7. MYSQL Basics	04	04	
7.1. Introduction to MYSQL			
7.2. MySQL Setup and Administration			
7.3. Creating Databases and Tables in MYSQL			
7.4. Selecting Data using Conditions			
7.5. Data Manipulations			
8. Developing Dynamic Web sites	03	03	
9. Hosting	02	02	
9.1. Hosting the site			
9.2. Name registration			
9.3. Service providers			

Teaching / Learning Methods and Strategies

The range of learning and teaching methods and strategies include staff-student contact with a mixture of e- learning as part of blended learning:

Lectures

Workshops /Laboratories (staff or student)

Group assignments

Individual assignments

Problem solving classes

Directed reading (texts and work books: hard or e-copy)

Directed program of internet-based lecture and tutorial videos

Directed research projects

Visits to outside organizations

Collaborative learning tools E.g., Google docs

Student assessment methods

The assessment strategies employed are designed to include formative and summative assessments which test the learning outcomes of the course using the following mechanisms:

Methods	Reference to Intended Learning Outcomes
Written examinations/tests	1.1, 1.2, 1.3,2.2, 2.3, 4.7
Multiple choice tests	1.1, 1.2, 1.3,2.2, 2.3, 4.7
Quizzes	1.1, 1.2, 1.3,2.2, 2.3, 4.7
Practical demonstrations	1.2, 1.3, 2.6, 2.7, 2.10, 3.1, 3.2, 3.3
Design exercises	1.2, 1.3, 2.6, 2.7, 2.10, 3.1, 3.2, 3.3
Group presentations	4.1, 4.2, 4.3, 4.4, 4.6, 4.7
Individual presentations	4.1, 4.2, 4.7
Individual reports	2.7, 2.9, 3.1, 3.2, 4.1, 4.2, 4.4
Group reports	4.1, 4.2, 4.3, 4.4, 4.6, 4.7
Researched literature surveys	1.4, 2.1, 2.9, 3.3, 4.2, 4.4
Computer-aided assessment	1.2, 1.3, 2.6, 2.7, 2.10, 3.1, 3.2, 3.3

Assessment Structure and schedule

Assessments	Assessment Description	Duration
Assignment 1	Web Information Architecture: Literature review on the selected Chapters from the recommended text books	1 st Week
Assignment 2	Website Planning	4 th Week
Mid Semester Test	Written examination (quiz or essay)	8 th Week
Group Project	Web Design and Development Project	13 th Week

Weighting of assessments

Mid-semester examination	20%
Final-semester examination	60%
Practical examination	5%
Other types of assessment	15%
Total	100%

Any formative only assessments

In-class exercises, case in point discussions, and presentations done by students.

List of references

a. Course notes

Class Handouts

b. Essential books (text books)

1. Thomas A. Powell. Web Design, The Complete Reference. McGraw-Hill Osborne Media; Subsequent edition (August 23, 2002).
2. Larry Ullaman, PHP and MYSQL for Dynamic Web sites, (Indian Edition: Techmedia Publications).
3. James Fuller (2003). Professional PHP Web Services. Wrox Press (Indian Edition: Shroff Publishers).
4. Dietel and Dietel, How to Internet Program.
5. Teach yourself MYSQL in 21 Days, Sams Series Publications
6. Teach yourself PHP in 21 Days, Sams Series Publications

d Periodicals, Web sites, ... etc

The PHP home: <http://www.php.net>

MySQL free RDBMS home: <http://www.mysql.com/>

Web Services Resources from O'Reilly: <http://webservices.oreilly.com/>

Microsoft's Web Services pages: <http://msdn.microsoft.com/webservices/>

Tools for Practical:

Be able to configure and run the Apache web server on Windows

Understand the role of the IIS server and be able to configure it

Able to install and connect PHP to Apache/IIS server

Install and use the MySQL database and connect to it from PHP (and Java/ASP) and be aware of how to do this with other databases (e.g., SQL Server, ORACLE)

Be aware of the equivalent database and web services support in ASP.NET and Java

Facilities required for teaching and learning

IT Lab with computers and internet connectivity (wired and wireless), Multimedia with projector, large lecture hall with 150 Seats and power sockets for laptop charge, and computers installed with needed web authoring tools.

Course coordinator:

Head of Department:

Date: / /
