CS3382: WEB USABILITY DESIGN AND ENGINEERING

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Web Usability Design and Engineering

Subject Code

CS - Computer Science

Course Number

3382

Academic Unit

Computer Science (CS)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

B1, B2, B3, B4 - Bachelor's Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

(CS1303 Introduction to Internet and Programming or
CS2204 Fundamentals of Internet Applications Development or
CS3270 Fundamentals of Computer Networks and the Internet, or equivalent)
AND
(CS2310 Computer Programming or
CS2311 Computer Programming or
CS2312 Problem Solving and Programming or
CS2313 Computer Programming or
CS2360 Java Programming, or equivalent)

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to provide students with a balance of design and engineering concepts, principles and professional practices related to Web site design and usability. It also aims to develop students' ability to design, create, and analyse Web sites for usability and accessibility.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Perform a Web site design project using established process models and professional practices.		x	x	
2	Create, design and implement a Web site by applying sound design principles and professional practices for usability and accessibility.		x	x	
3	Perform usability testing or use other techniques and tools to improve Web usability.			x	
4	To appreciate, learn and critique new technologies and trends in Web usability engineering.		x		

A1: Attitude
Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability
Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments
Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs)

	TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture and Tutorial	Explain key concepts, such as principles in Web site design.	1, 2, 3, 4	Lecture: 3 hours/week Tutorial: 8 hours/semester

2	Journal or report	Students are expected to do a fair amount of reading both within and outside of the textbooks. They are required to document in a journal or report their learning and insights of Web site design, usability and accessibility professional practices.	1, 2, 3, 4	
3	Presentation	Students are required to give presentations in class and discuss their findings. The teacher will guide discussions and help focus issues.	1, 2, 3, 4	
4	Mini-project	Each student will be required to select an existing Web site and critically analyse its usability and accessibility. They will create a new design of a simple Web site following professional practices, guidelines and standards in Web design, usability and accessibility. The mini-project should be documented in a project report.	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Journal or Report Write-up	4	20	
2	Mini-project and Presentation	1, 2, 3, 4	40	

Continuous Assessment (%)

60

Examination (%)

40

Examination Duration (Hours)

2

Additional Information for ATs

For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.
This is a CEF approved course, students who want to apply for CEF claims must achieve at least 70% minimum attendance and obtain at least 50% passing mark for the assessment of the course.

Assessment Rubrics (AR)

Assessment Task
Analysis Report Write-up

Criterion
1.1 ABILITY to study and clearly document findings of Web site design principles and professional practices

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
Mini-project and Presentation

Criterion
2.1 ABILITY to create, design and implement a Web site by applying sound design principles and professional practices for usability and accessibility

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching marginal levels

Assessment Task
Mini-project and Presentation

Criterion
2.2 ABILITY to organize and clearly present the techniques used in the mini-project to improve Web usability

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Web site development methodologies. Web site usability and accessibility. Web standards. XHTML/CSS. Design principles and style guidelines. Information architecture. Graphic design and layout. Usability testing. Search engine optimization. Web site analytics. New Web technologies and trends.

Syllabus

· Web site development methodologies
  Web site development life cycle. User-centric design model. Process models. Core process workflow.
· Web standards for usability and accessibility
  XHTML. CSS. WAI/Section 508.
· Design principles and guidelines for the Web
  Basic Web design principles. Web style guidelines. Basic graphic layout: fonts, colors, etc. Usability and accessibility guidelines. Professional practices for Web design.
· Usability testing, techniques and tools
  Usability testing procedures. Analysis of test results. Search engine optimization. Web analytics.
· New technologies and trends
  Web 2.0. Web 3.0.

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Rush, S. (2015). Quantum Web Accessibility: Organizational Awareness, Alignment, and Realization. Taylor & Francis Group. ISBN 978-1138808676.
2	Horton, S., and Quesenbery W. (2014). A Web for Everyone: Designing Accessible User Experiences. Rosenfeld Media. ISBN 978-1933820972.
3	Pickering, H. (2014). Apps For All: Coding Accessible Web Interfaces. Smashing Magazine. ISBN 978-3944540795.
4	Krug, S. (2014). Don't Make Me Think, Revisited: A Common Sense Approach to Web Usability (3rd Edition). New Riders. ISBN 978-0321965516.
5	Connor, J.O. (2012). Pro HTML5 Accessibility: Building an Inclusive Web. Apress. ISBN 978-1430241942.

6	Chisholm, W., and May, M. (2008). Universal Design for Web Applications: Web Applications That Reach Everyone. O'Reilly. ISBN 978-0596518738.
7	Pearrow, M. (2006). Web Usability Handbook (2nd Edition). Charles River Media. ISBN 978-1584504696.