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

Prerequisities
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)

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

<table>
<thead>
<tr>
<th>TLAs</th>
<th>Brief Description</th>
<th>CILO No.</th>
<th>Hours/week (if applicable)</th>
</tr>
</thead>
</table>
| 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 |
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.

Students are required to give presentations in class and discuss their findings. The teacher will guide discussions and help focus issues.

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.

<table>
<thead>
<tr>
<th>ATs</th>
<th>CILO No.</th>
<th>Weighting (%)</th>
<th>Remarks (e.g. Parameter for GenAI use)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Journal or Report Write-up</td>
<td>4</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Mini-project and Presentation</td>
<td>1, 2, 3, 4</td>
<td>40</td>
<td></td>
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</table>

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

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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

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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

Syllabus
- Web site development methodologies
- 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
- New technologies and trends
  Web 2.0. Web 3.0.

Reading List

Compulsory Readings

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<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Nil</td>
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Additional Readings

<table>
<thead>
<tr>
<th>Title</th>
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