CS2204: FUNDAMENTALS OF INTERNET APPLICATIONS DEVELOPMENT

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Fundamentals of Internet Applications Development

Subject Code
CS - Computer Science

Course Number
2204

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
Nil

Equivalent Courses
Nil

Exclusive Courses
CS1303 Introduction to Internet and Programming, CS2161 Fundamentals of Web Technologies
Part II Course Details

Abstract

This course aims at providing the fundamental skills in programming Internet applications. Upon completion, students should be able to:a) be familiar with the development of WEB programmingb) write web pages with the Extensible HyperText Markup Language (XHTML) and Cascading Style Sheet (CSS)c) write dynamic web pages using scriptingd) write a basic client-side web-based application

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 Explain the development of WEB and its current trends.</td>
<td>5</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Use of internet development tools such as XHTML editor.</td>
<td>5</td>
<td></td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>3 Design and implement static Web pages using WEB standards.</td>
<td>54</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>4 Create and set up Web sites and write interactive Web pages.</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Understand, compare and evaluate the design techniques required for Internet applications.</td>
<td>7</td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

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>
<tbody>
<tr>
<td>1</td>
<td>Lecturing, discussions, question and answer based tutorial sessions.</td>
<td>1, 2</td>
<td>Lecture: 3 hours/week</td>
</tr>
<tr>
<td>2</td>
<td>Instructor led and self-paced exercises focused on individual topics.</td>
<td>3, 4</td>
<td>Tutorial: at least 8 hours/semester</td>
</tr>
<tr>
<td>3</td>
<td>Problem Based Learning (XPBL) approach is adopted; students are required to implement a Web application project.</td>
<td>3, 4, 5</td>
<td></td>
</tr>
</tbody>
</table>
## Assessment Tasks / Activities (ATs)

<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>1</td>
<td>3 Short Quizzes are used to assess students’ understanding of fundamental concepts</td>
<td>1, 3, 4, 5</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Coursework are designed to assess students’ ability to set up Web pages; it will include components with emphasis on structure, style setting and Javascript programming</td>
<td>3, 4, 5</td>
<td>35</td>
</tr>
</tbody>
</table>

### Continuous Assessment (%)
50

### Examination (%)
50

### 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.

### Assessment Rubrics (AR)

#### Assessment Task

Coursework are designed to assess students’ ability to set up Web pages

#### Criterion

1.1. Ability to use matching structures in Web pages to meet specified requirements

##### Excellent (A+, A, A-)

High

##### Good (B+, B, B-)

Significant

##### Fair (C+, C, C-)

Moderate

##### Marginal (D)

Basic

##### Failure (F)

Not even reaching margin level

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Assessment Task

Coursework are designed to assess students’ ability to set up Web pages
Criterion
1.2. Ability to design the layout of Web pages with justification

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching margin level

Assessment Task
Coursework are designed to assess students’ ability to set up Web pages

Criterion
1.3. Ability to write Javascript codes with good practice to meet specified requirements

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching margin level

Assessment Task
Quiz

Criterion
2.1. Quantitative mark based

Excellent (A+, A, A-)
High

Good (B+, B, B-)
Significant

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not even reaching margin level
Fair (C+, C, C-)
Moderate
Marginal (D)
Basic
Failure (F)
Not even reaching margin level

Assessment Task
Examination
Criterion
3.1 Quantitative mark based
Excellent (A+, A, A-)
High
Good (B+, B, B-)
Significant
Fair (C+, C, C-)
Moderate
Marginal (D)
Basic
Failure (F)
Not even reaching margin level

Part III Other Information
Keyword Syllabus
Review of Internet organization, Common Internet services and protocols. HyperText Transfer Protocol (HTTP), Client-server model, HyperText Markup Language (HTML), Document Object Model (DOM), Cascading Style Sheet (CSS), Scripting language and Web browser, JavaScript and Client-side programming models.
Syllabus
- Review of Internet and World Wide Web
- HTTP, WEB multimedia, XHTML CSS, and DOM
- Client-side Scripting
- Dynamic HTML and introduction to HTML5 scripting API

Reading List
Compulsory Readings

<table>
<thead>
<tr>
<th>Title</th>
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## Additional Readings

<table>
<thead>
<tr>
<th>Title</th>
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<tbody>
<tr>
<td>Various on-line resources on HTML, CSS and Javascript</td>
<td>3</td>
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