CS4348: SOFTWARE QUALITY MANAGEMENT

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Software Quality Management

Subject Code
CS - Computer Science

Course Number
4348

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
CS3342 Software Design
or CS3343 Software Engineering Practice

Precedents
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil
Part II Course Details

Abstract
This course aims to equip students with the knowledge and techniques of professional practices in software processes and activities. It prepares students to manage the development of quality software using professional practices and established standards in software quality assurance and management.

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 relations among software product, process and project in quality assurance and management.</td>
<td>x</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2. Design process and quality models for developing and assessing software products and processes.</td>
<td></td>
<td>x</td>
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<tr>
<td>3. Describe and apply professional practices in the development of quality software.</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
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<tr>
<td>4. Describe, compare and critique quality systems and established standards for software products and processes.</td>
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<td>x</td>
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</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>Lecture</td>
<td>1, 2, 3, 4</td>
<td>3 hours per week</td>
</tr>
<tr>
<td></td>
<td>Explain key concepts, models and fundamental issues. Describe and compare professional practices and standards.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tutorial</td>
<td>1, 2, 3, 4</td>
<td>8 hours per semester</td>
</tr>
<tr>
<td></td>
<td>Discuss key concepts, models and issues via short questions. Discuss and evaluate techniques and processes via practice with simple exercises.</td>
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</tbody>
</table>
Practice of software quality assurance activities

Require students to perform software quality assurance activities, such as review, inspection, or development of a quality plan that conforms to an established standard. Also require students to report, evaluate and critically reflect on the practices they perform in the activities.

After class

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>Assignments</td>
<td>3</td>
<td>25</td>
<td></td>
</tr>
<tr>
<td>Project or quiz</td>
<td>1, 2, 3</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>

Continuous Assessment (%)
40

Examination (%)
60

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
Assignments

Criterion
1.1 ABILITY to DESCRIBE and APPLY professional practices in the development of quality software

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
Project or quiz

Criterion
2.1 ABILITY to ACHIEVE the respective CILOs

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
Examination

Criterion
3.1 ABILITY to ACHIEVE the respective CILOs

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

Reading List
## Compulsory Readings

<table>
<thead>
<tr>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Selected documents from international software standards: accessible online via CityU library.</td>
</tr>
<tr>
<td>3 Selected articles from IEEE and ACM periodicals: accessible online via CityU library.</td>
</tr>
</tbody>
</table>

## Additional Readings

<table>
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