**Subject Description Form**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>COMP5212</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Subject Title</strong></td>
<td>Software Design and Architecture</td>
</tr>
<tr>
<td><strong>Credit Value</strong></td>
<td>3</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td>5</td>
</tr>
<tr>
<td><strong>Pre-requisite/ Exclusion</strong></td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Objectives**

The objectives of this subject are to:

1. introduce design concepts such as abstraction, information hiding, functional decomposition, modularization and reusability;
2. provide an opportunity for students to learn how to cope with the complexity of problem specification, make design trade-offs, and use software architecture and domain knowledge for development.

**Intended Learning Outcomes**

Upon completion of the subject, students will be able to:

a) apply abstraction, information hiding, functional decomposition and modularization in design;
b) define a software architecture;
c) understand design tradeoffs and apply various design representations;
d) use basic design methods; and
e) use design metrics to evaluate a design.

**Subject Synopsis/Indicative Syllabus**

- Concepts and Principles
- Design Notations
- Design Quality and Metrics
- Software Architecture
- Design Strategies and Method
- Psychology of Programming

**Teaching/Learning Methodology**

Lectures, self study, face-to-face/online tutorials, discussion forums, lab/workshop/seminar where applicable

**Assessment Methods in Alignment with Intended Learning Outcomes**

<table>
<thead>
<tr>
<th>Specific Assessment Methods/Tasks</th>
<th>% weighting</th>
<th>Intended subject learning outcomes to be assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignments, Tests &amp; Projects</td>
<td>55</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Final Examination</td>
<td>45</td>
<td>✓ ✓ ✓ ✓ ✓</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Student study effort expected</td>
<td>Class Contact:</td>
<td></td>
</tr>
<tr>
<td>-------------------------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td>Class activities (lecture, tutorial, lab)</td>
<td>39 hours</td>
<td></td>
</tr>
<tr>
<td>Other student study effort:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assignments, Quizzes, Projects, Exams</td>
<td>65 hours</td>
<td></td>
</tr>
<tr>
<td><strong>Total student study effort</strong></td>
<td><strong>104 hours</strong></td>
<td></td>
</tr>
</tbody>
</table>

| Reading list and references | (1) Bass, L., Clements, P., Kazman, R., 2013, Software architecture in practice, 3rd Ed, Addison-Wesley. |