## Subject Description Form

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>COMP320</th>
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<tbody>
<tr>
<td>Subject Title</td>
<td>Introduction to Internet Computing</td>
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<tr>
<td>Credit Value</td>
<td>3</td>
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<tr>
<td>Level</td>
<td>3</td>
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</table>
| Pre-requisite / Co-requisite / Exclusion | Pre-requisite: COMP201 (Nil for 61025)  
Co-requisite: Nil  
Exclusion: COMP420 |
| Objectives      | - Highlight the impact of Internet in facilitating a truly distributed, wide area and highly accessible computing environment.  
- Examine the analysis, design and implementation techniques required to develop the network, enterprise and Internet based information systems.  
- Review state-of-the-art technologies such as distributed client/server computing paradigm, middleware concepts and architecture, web-based client/server computing technologies, XML, wireless and intelligent Internet computing. |
| Intended Learning Outcomes | Upon completion of the subject, students will be able to:  
Professional/academic knowledge and skills  
(a) identify different components of distributed client/server on Internet computing;  
(b) understand the basic concepts of Internet services and related technologies;  
(c) be proficient in using Java Servlets and related Web development tools;  
(d) design, develop and implement interactive Web applications;  
(e) identify different components of XML and its related standards and technologies;  
(f) understand latest and future Web technology, including wireless and intelligent Internet computing.  
Attributes for all-roundedness  
(g) communicate effectively in project / system presentation and technical documents / reports;  
(h) learn independently for problem solving and solution seeking;  
(i) collaborate with other team members for project design and development, while exhibiting leadership in a project team whenever designated or necessary;  
(j) think and reason in a critical and creative mind, especially in applying different computing technologies to interactive Web applications. |

## Alignment of Programme Outcomes:

Programme Outcome 1: This subject contributes to having students practice their
presentation skill by a project in designing a true user-interactive system; and also advertising their work to the selected users.

Programme Outcome 4: This subject contributes to developing student critical thinking through tutorial and lab exercises on solving problems. They will also practice more in written assignments, programming exercises, and project.

Programme Outcome 5: This subject contributes to problem solving with programming skills through lab exercise and project with proper design and implementation.

Programme Outcome 6: This subject contributes to the learning of the state-of-the-art internet technologies and their impact to the industrial needs.

Programme Outcome 7: This subject contributes to team work with group-based project for students to practice team spirit.

Subject Synopsis/Indicative Syllabus

| Topic | 1. **Introduction to distributed client/server Internet computing**  
Client/server evolution and its relation to Internet computing Internet vs Intranet computing; overview of Internet services including file servers, database servers, transaction servers, web servers; concepts of two-tier versus three-tier architectures; network infrastructure and support for internet computing; building blocks of network infrastructure including bridges, routers and gateways.  
2. **Web-based client/server computing**  
Revolution of Web as the intergalactic client/server Internet computing platform; web model. Web protocols and hypertext technology; HTTP data representation and response; interactive Web-based client/server; Web programming with Servlets; Servlet JDBC; Servlet Session Tracking technology.  
3. **Extensible Markup Language (XML)**  
XML introduction: XML Schema, DTD concepts, design and modelling; XML conjunction standards: DOM and SAX, XLink and XPointer, XSL and XSLT; XML data management: Querying XML data, XML data storage, XML relational mapping; related applications using XML technology.  
4. **Latest and future Internet computing**  
Introduction to wireless Internet; wireless Internet applications; intelligent Internet computing using agent technology. |

Laboratory Experiment:

2. Java Servlet workshop.  
3. XML and WAP workshop.  
4. Internet Computing (IC) project workshop. |
**Teaching/Learning Methodology**

The teaching and learning process will be tightly associated with projects and labs. The course will provide the students with on-hand experience of each individual technique taught in class.

**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>
<th>(Please tick as appropriate)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Assignments</td>
<td>55%</td>
<td>a b c d e f g h i j</td>
<td></td>
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<tr>
<td>2. Lab exercises</td>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
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<tr>
<td>3. Project</td>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
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<td>4. Mid-term</td>
<td></td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
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<tr>
<td>5. Examination</td>
<td>45%</td>
<td>✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓</td>
<td></td>
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<tr>
<td>Total</td>
<td>100%</td>
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Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:

The assessment is appropriate. More specifically, this course is heavy-weighted with labs and projects. As a course aims at on-hand experience of the state-of-the-art technologies of the Internet, labs and projects are the best for the individual techniques learned and group collaborations. The exams and assignments will evaluate the student the knowledge they learned and the skills to solve problems independently.

**Student Study Effort Expected**

<table>
<thead>
<tr>
<th>Class contact:</th>
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<tbody>
<tr>
<td>Lecture</td>
<td>26 Hrs.</td>
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<tr>
<td>Laboratory</td>
<td>13 Hrs.</td>
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</tbody>
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Other student study effort:

| Self-study/assignments/project     | 52 Hrs. |

Total student study effort 91 Hrs.

**Reading List and References**

**Reference Books:**


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