

## Subject Description Form

<b>Subject Code</b>	COMP320
<b>Subject Title</b>	Introduction to Internet Computing
<b>Credit Value</b>	3
<b>Level</b>	3
<b>Pre-requisite / Co-requisite/ Exclusion</b>	Pre-requisite: COMP201 (Nil for 61025) Co-requisite: Nil Exclusion: COMP420
<b>Objectives</b>	<ul style="list-style-type: none"> <li>• Highlight the impact of Internet in facilitating a truly distributed, wide area and highly accessible computing environment.</li> <li>• Examine the analysis, design and implementation techniques required to develop the network, enterprise and Internet based information systems.</li> <li>• 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.</li> </ul>
<b>Intended Learning Outcomes</b>	<p>Upon completion of the subject, students will be able to:</p> <p><i>Professional/academic knowledge and skills</i></p> <p>(a) identify different components of distributed client/server on Internet computing;</p> <p>(b) understand the basic concepts of Internet services and related technologies;</p> <p>(c) be proficient in using Java Servlets and related Web development tools;</p> <p>(d) design, develop and implement interactive Web applications;</p> <p>(e) identify different components of XML and its related standards and technologies;</p> <p>(f) understand latest and future Web technology, including wireless and intelligent Internet computing.</p> <p><i>Attributes for all-roundedness</i></p> <p>(g) communicate effectively in project / system presentation and technical documents / reports;</p> <p>(h) learn independently for problem solving and solution seeking;</p> <p>(i) collaborate with other team members for project design and development, while exhibiting leadership in a project team whenever designated or necessary;</p> <p>(j) think and reason in a critical and creative mind, especially in applying different computing technologies to interactive Web applications.</p> <p><b>Alignment of Programme Outcomes:</b></p> <p>Programme Outcome 1: This subject contributes to having students practice their</p>

	<p>presentation skill by a project in designing a true user-interactive system; and also advertising their work to the selected users.</p> <p>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.</p> <p>Programme Outcome 5: This subject contributes to problem solving with programming skills through lab exercise and project with proper design and implementation.</p> <p>Programme Outcome 6: This subject contributes to the learning of the state-of-the-art internet technologies and their impact to the industrial needs.</p> <p>Programme Outcome 7: This subject contributes to team work with group-based project for students to practice team spirit.</p>
--	--

<b>Subject Synopsis/ Indicative Syllabus</b>	<b>Topic</b>
	<p><b>1. Introduction to distributed client/server Internet computing</b> 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.</p>
	<p><b>2. Web-based client/server computing</b> 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.</p>
	<p><b>3. Extensible Markup Language (XML)</b> 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.</p>
	<p><b>4. Latest and future Internet computing</b> Introduction to wireless Internet; wireless Internet applications; intelligent Internet computing using agent technology.</p>
	<b>Laboratory Experiment:</b>
	<b>Topic</b>
	<p>1. Javascripts workshop. 2. Java Servlet workshop. 3. XML and WAP workshop. 4. Internet Computing (IC) project workshop.</p>

<b>Teaching/Learning Methodology</b>	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.																																																																																																						
<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	<table border="1" data-bbox="461 300 1466 846"> <thead> <tr> <th data-bbox="461 300 680 459" rowspan="2">Specific assessment methods/tasks</th> <th data-bbox="680 300 849 459" rowspan="2">% weighting</th> <th colspan="10" data-bbox="849 300 1466 394">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th data-bbox="849 394 906 459">a</th> <th data-bbox="906 394 963 459">b</th> <th data-bbox="963 394 1019 459">c</th> <th data-bbox="1019 394 1076 459">d</th> <th data-bbox="1076 394 1133 459">e</th> <th data-bbox="1133 394 1190 459">f</th> <th data-bbox="1190 394 1247 459">g</th> <th data-bbox="1247 394 1304 459">h</th> <th data-bbox="1304 394 1360 459">i</th> <th data-bbox="1360 394 1466 459">j</th> </tr> </thead> <tbody> <tr> <td data-bbox="461 459 680 522">1. Assignments</td> <td data-bbox="680 459 849 716" rowspan="4">55%</td> <td data-bbox="849 459 906 522"></td> <td data-bbox="906 459 963 522">✓</td> <td data-bbox="963 459 1019 522"></td> <td data-bbox="1019 459 1076 522"></td> <td data-bbox="1076 459 1133 522">✓</td> <td data-bbox="1133 459 1190 522">✓</td> <td data-bbox="1190 459 1247 522"></td> <td data-bbox="1247 459 1304 522">✓</td> <td data-bbox="1304 459 1360 522"></td> <td data-bbox="1360 459 1466 522">✓</td> </tr> <tr> <td data-bbox="461 522 680 585">2. Lab exercises</td> <td data-bbox="849 522 906 585">✓</td> <td data-bbox="906 522 963 585">✓</td> <td data-bbox="963 522 1019 585">✓</td> <td data-bbox="1019 522 1076 585">✓</td> <td data-bbox="1076 522 1133 585">✓</td> <td data-bbox="1133 522 1190 585">✓</td> <td data-bbox="1190 522 1247 585"></td> <td data-bbox="1247 522 1304 585">✓</td> <td data-bbox="1304 522 1360 585"></td> <td data-bbox="1360 522 1466 585">✓</td> </tr> <tr> <td data-bbox="461 585 680 648">3. Project</td> <td data-bbox="849 585 906 648">✓</td> <td data-bbox="906 585 963 648">✓</td> <td data-bbox="963 585 1019 648">✓</td> <td data-bbox="1019 585 1076 648">✓</td> <td data-bbox="1076 585 1133 648">✓</td> <td data-bbox="1133 585 1190 648">✓</td> <td data-bbox="1190 585 1247 648">✓</td> <td data-bbox="1247 585 1304 648">✓</td> <td data-bbox="1304 585 1360 648">✓</td> <td data-bbox="1360 585 1466 648">✓</td> </tr> <tr> <td data-bbox="461 648 680 711">4. Mid-term</td> <td data-bbox="849 648 906 711">✓</td> <td data-bbox="906 648 963 711">✓</td> <td data-bbox="963 648 1019 711"></td> <td data-bbox="1019 648 1076 711"></td> <td data-bbox="1076 648 1133 711"></td> <td data-bbox="1133 648 1190 711">✓</td> <td data-bbox="1190 648 1247 711"></td> <td data-bbox="1247 648 1304 711">✓</td> <td data-bbox="1304 648 1360 711"></td> <td data-bbox="1360 648 1466 711"></td> </tr> <tr> <td data-bbox="461 711 680 774">5. Examination</td> <td data-bbox="680 711 849 774">45%</td> <td data-bbox="849 711 906 774">✓</td> <td data-bbox="906 711 963 774">✓</td> <td data-bbox="963 711 1019 774"></td> <td data-bbox="1019 711 1076 774"></td> <td data-bbox="1076 711 1133 774"></td> <td data-bbox="1133 711 1190 774">✓</td> <td data-bbox="1190 711 1247 774"></td> <td data-bbox="1247 711 1304 774">✓</td> <td data-bbox="1304 711 1360 774"></td> <td data-bbox="1360 711 1466 774"></td> </tr> <tr> <td data-bbox="461 774 680 846">Total</td> <td data-bbox="680 774 849 846">100 %</td> <td colspan="10" data-bbox="849 774 1466 846"></td> </tr> </tbody> </table> <p data-bbox="461 894 1466 957">Explanation of the appropriateness of the assessment methods in assessing the intended learning outcomes:</p> <p data-bbox="461 989 1466 1146">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.</p>												Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)										a	b	c	d	e	f	g	h	i	j	1. Assignments	55%		✓			✓	✓		✓		✓	2. Lab exercises	✓	✓	✓	✓	✓	✓		✓		✓	3. Project	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	4. Mid-term	✓	✓				✓		✓			5. Examination	45%	✓	✓				✓		✓			Total	100 %										
Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)																																																																																																					
		a	b	c	d	e	f	g	h	i	j																																																																																												
1. Assignments	55%		✓			✓	✓		✓		✓																																																																																												
2. Lab exercises		✓	✓	✓	✓	✓	✓		✓		✓																																																																																												
3. Project		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																																																																																												
4. Mid-term		✓	✓				✓		✓																																																																																														
5. Examination	45%	✓	✓				✓		✓																																																																																														
Total	100 %																																																																																																						
<b>Student Study Effort Expected</b>	<table border="1" data-bbox="461 1161 1466 1608"> <tr> <td data-bbox="461 1161 1162 1224">Class contact:</td> <td data-bbox="1162 1161 1466 1224"></td> </tr> <tr> <td data-bbox="461 1224 1162 1287">▪ Lecture</td> <td data-bbox="1162 1224 1466 1287">26 Hrs.</td> </tr> <tr> <td data-bbox="461 1287 1162 1350">▪ Laboratory</td> <td data-bbox="1162 1287 1466 1350">13 Hrs.</td> </tr> <tr> <td data-bbox="461 1350 1162 1413">Other student study effort:</td> <td data-bbox="1162 1350 1466 1413"></td> </tr> <tr> <td data-bbox="461 1413 1162 1476">▪ Self-study/assignments/project</td> <td data-bbox="1162 1413 1466 1476">52 Hrs.</td> </tr> <tr> <td data-bbox="461 1476 1162 1539">▪</td> <td data-bbox="1162 1476 1466 1539">Hrs.</td> </tr> <tr> <td data-bbox="461 1539 1162 1608">Total student study effort</td> <td data-bbox="1162 1539 1466 1608">91 Hrs.</td> </tr> </table>												Class contact:		▪ Lecture	26 Hrs.	▪ Laboratory	13 Hrs.	Other student study effort:		▪ Self-study/assignments/project	52 Hrs.	▪	Hrs.	Total student study effort	91 Hrs.																																																																													
Class contact:																																																																																																							
▪ Lecture	26 Hrs.																																																																																																						
▪ Laboratory	13 Hrs.																																																																																																						
Other student study effort:																																																																																																							
▪ Self-study/assignments/project	52 Hrs.																																																																																																						
▪	Hrs.																																																																																																						
Total student study effort	91 Hrs.																																																																																																						
<b>Reading List and References</b>	<p data-bbox="461 1629 686 1661"><b>Reference Books:</b></p> <ol data-bbox="461 1692 1466 1961" style="list-style-type: none"> <li data-bbox="461 1692 1466 1797">1. B. Krishnamurthy and J. Rexford, “Web Protocols and Practice: HTTP/1.1, Networking Protocols, Caching, and Traffic Measurement”, Addison-Wesley, 2001</li> <li data-bbox="461 1808 1466 1881">2. A. Godbole and A. Kahate, “Web Tecnologies: TCP/IP Architecture, and Java Programming”, McGraw-Hill, 2009</li> <li data-bbox="461 1892 1466 1961">3. L. Welling and L. Thomson, “PHP and MySQL Web Development”, Addison-Wesley, 2008</li> </ol>																																																																																																						

- |  |   |
|--|---|
|  | <ol style="list-style-type: none"><li>4. M. Hall and L. Brown, “Core Web Programming”, Prentice Hall, 2001.</li><li>5. A. Steelman and J. Murach, “Murach’ s Java Servlets and JSP” , Mike Murach &amp; Associates, 2010.</li><li>6. A. Ceponkus and F. Hoodbhoy, “Applied XML: A Toolkit for Programmers”, John Wiley &amp; Sons, 1999</li></ol> |
|--|---|