1. **Name of Course/Module**: Internet Computing
2. **Course Code**: TIC2211
3. **Status of Subject**: Core for B.IT Information Technology Management
4. **MQF Level/Stage**: Bachelor Degree – MQF Level 6
5. **Version**: June 2012
6. **Requirement for Registration**: TCP1311 Object Oriented Programming
7. **Name(s) of academic/teaching staff**: Fathin Fakhriah, Chin Yong Jian, Mohd Fikri Azli bin Abdullah
8. **Semester and Year offered**: Trimester 2 (Gamma Level)
9. **Objective of the course/module in the programme**:
   To provide an overview of the Internet and World Wide Web technologies. It also provides students with in depth knowledge of web programming including Client and Server side scripting. An important main objective is to establish sufficient knowledge of the web, its applications, security and services provided.
10. **Learning Outcomes**:
    At the completion of the subject, students should be able to:
    - **LO1**: Illustrate the security issues involved in Internet Programming and the effect of this on the chosen Internet Programming Language. (Cognitive, Level 4)
    - **LO2**: Identify the basic concepts of gateway and server programming. (Cognitive, Level 1)
    - **LO3**: Design a network system in any particular domain. (Cognitive, Level 5)
    - **LO4**: Describe proper steps of connecting, accessing, manipulating and designing database driven website. (Cognitive, Level 6)
11. **Synopsis**:
    This course provides an introduction to the fundamental concepts and architecture of the Internet in addition to the World Wide Web and its associated technologies. The course provides knowledge in two major areas: the Internet architecture and Protocols, and the Web architecture and its client and server scripting technologies. In addition, modern and state of the art concepts associated with the Internet and the Web such as Web Security and Services are surveyed and explained.
12. **Mapping of Subject to Programme Outcomes**:

<table>
<thead>
<tr>
<th>Programme Outcomes</th>
<th>% of Contribution</th>
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</table>
PO1: Apply soft skills in work and career related activities. 27.27
PO2: Demonstrate knowledge and understanding of fundamental concepts, principles and best practices. 36.36
PO3: Analyse the requirements to address problems or opportunities in relevant domains or organisations. 18.18
PO5: Blend innovative mind and entrepreneurial skills. 18.18

13. Assessment Methods and Types:

<table>
<thead>
<tr>
<th>Method and Type</th>
<th>Description/Details</th>
<th>Percentage</th>
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</thead>
<tbody>
<tr>
<td>Test</td>
<td>Written Exam</td>
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<tr>
<td>Project</td>
<td>Report &amp; Presentation</td>
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<tr>
<td>Assignment</td>
<td>Report</td>
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<tr>
<td>Final Exam</td>
<td>Written Exam</td>
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14. Details of Subject

Topics | Mode of Delivery
---|---
1. OVERVIEW OF NETWORKING AND THE INTERNET | Lecture 2 Laboratory 2
Internetworking, problems in Internetworking, Virtual network, Internetworking devices, Repeaters, Bridges, Routers, Gateways, History of the Internet, Internet Architecture and ISP.

2. TCP/IP SOCKETS AND SOCKET PROGRAMMING | Lecture 2 Laboratory 2
TCP/IP basics, IP addresses, Logical addresses, Address Resolution Protocol, Relation between TCP and IP, Ports and Sockets, Socket connections, UDP packets, Difference between UDP and TCP, Client and server sockets.

3. CLIENT-SERVER WEB ARCHITECTURE | Lecture 2 Laboratory 2
Client/Server Fundamentals, Client/Server as a Special Case of Distributed Computing, Client/Server Processes, Middleware, Network Services, Client/Server protocols, HTTP and HTTPS, Web servers.

4. WEB PAGE DESIGN AND HTML | Lecture 4 Laboratory 4
Introduction to HTML basics. Links, Anchors, Tables, Forms, and Frames, introduction to XML.

5. CLIENT SIDE WEB SCRIPTING | Lecture 4 Laboratory 4
Advanced features of HTML, Cascade Style Sheets, Introduction to Java Script programming, Objects in Java scripts, Basic Dynamic HTML with Java scripts.

6. SERVER SIDE WEB PROGRAMMING AND SCRIPTING | Lecture 6 Laboratory 6
Introduction to server side scripting, and in depth study to one server side scripting language such Java Server Pages, PHP, ASP, or a new scripting language required by the industry.

7. DATABASE DRIVEN WEB ARCHITECTURE AND DESIGN | Lecture 2 Laboratory 2
Database connectivity, accessing and manipulating databases, design of a database driven basic website.

8. WEB AND SCRIPTS SECURITIES | Lecture 2 Laboratory 2
User authentication, Sessions and sessions managements, cookies, Web security, Scripts security.

9. INTRODUCTION TO WEB SERVICES | Lecture 4 Laboratory 4
Introduction to web services, Definition, Service orientated architecture, Web services families, Web services protocol stack, SOAP, WSDL, Web service infrastructure, UDDI.
## Laboratory

1. Introduction to C language and HTML.
2. Building a client and server applications using TCP sockets.
3. Install and Configure Apache web server and build a basic HTML based Web page.
4. Experimenting with HTTP protocol and HTML (Get and Post methods and Forms)
5. Create a dynamic user interface for a web page using Java script
6. More Java Script dynamic page interfaces
7. Design and experiment with server side scripting by creating a counter for a web page (use files)
8. Design a basic database driven application (example: basic library system).
9. Design user authentication enabled web site with security features.

### Total Student Learning Time (SLT)

<table>
<thead>
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<th></th>
<th>Lecture</th>
<th>Tutorials</th>
<th>Laboratory/Practical</th>
<th>Assignment</th>
<th>Project</th>
<th>Mid Term Test</th>
<th>Final Exam</th>
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<td>28</td>
<td>28</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>59</td>
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<tr>
<td>Total Guided and Independent Learning</td>
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<td>10</td>
<td>10</td>
<td>15</td>
<td>3</td>
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### Credit Value

- 3

### Reading Materials:

#### Textbook


#### Reference Materials


#### Appendix (to be compiled when submitting the complete syllabus for the programme):

1. Mission and Vision of the University and Faculty
2. Mapping of Programme Objectives to Vision and Mission of Faculty and University
3. Mapping of Programme Outcome to Programme Objectives
4. Programme Objective and Outcomes (Measurement and Descriptions)