

1. Title of subject	Internet Computing
2. Subject code	TIC2211
3. Status of subject	Major
4. Credit hour	3 28 Hours of Lecturers 28 Hours of Lab LAN credit Hours equivalence: 3.00
5. Semester	Trimester 2 (Gamma Level)
6. Pre-Requisite	Object Oriented Programming (TCP 1311)
7. Methods of teaching	28 Hours of Lecture 28 Hours of Lab
8. Assessment	Coursework: 60 % - Test 20 % - Project 20 % - Assignment 20 % Final Exam: 40 %
9. Teaching staff (Proposed)	Mr. Rizwan Javaid
10. Objective of subject	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.
11. Synopsis of subject	<p>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.</p> <p>Kursus ini mengetengahkan konsep asas internet, senibina internet, jaringan internet dan juga teknologi-teknologi yang berkaitan dengan internet. Kursus ini dibahagikan kepada dua bahagian utama. Pertama, senibina internet dan protokol-protokol internet dan yang kedua, senibina jaringan internet dan teknologi pengaturcaraan skrip klien dan pelayan. Konsep-konsep terkini termasuk bidang sekuriti internet dan perkhidmatan jaringan internet juga akan ditinjau dan dikupas.</p>

12. Learning Outcomes	By the end of the subject, students should be able to:	
	<ul style="list-style-type: none"> • Illustrate the security issues involved in Internet Programming and the effect of this on the chosen Internet Programming Language. • Identify the basic concepts of gateway and server programming • Design a network system in any particular domain. 	
	Programmes Outcomes	Degree of contribution
	Ability to apply soft skills in work and career related activities	5
	Good understanding of fundamental concepts	40
	Acquisition and mastery of knowledge in specialized area	20
	Acquisition of analytical capabilities and problem solving skills	20
	Adaptability and passion for learning	5
	Cultivation of innovative mind and development of entrepreneurial skills	5
	Understanding of the responsibility with moral and professional ethics	5
13. Details of subject	Topics Covered	Hours
1.	OVERVIEW OF NETWORKING AND THE INTERNET Internetworking, problems in Internetworking, Virtual network, Internetworking devices, Repeaters, Bridges, Routers, Gateways, History of the Internet, Internet Architecture and ISP.	2
2.	TCP/IP SOCKETS AND SOCKET PROGRAMMING 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.	2
3.	CLIENT-SERVER WEB ARCHITECTURE 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.	2
4.	WEB PAGE DESIGN AND HTML Introduction to HTML basics. Links, Anchors, Tables, Forms, and Frames, introduction to XML.	4

	5.	CLIENT SIDE WEB SCRIPTING Advanced features of HTML, Cascade Style Sheets, Introduction to Java Script programming, Objects in Java scripts, Basic Dynamic HTML with Java scripts.	4
	6.	SERVER SIDE WEB PROGRAMMING AND SCRIPTING 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.	6
	7.	DATABASE DRIVEN WEB ARCHITECTURE AND DESIGN Database connectivity, accessing and manipulating databases, design of a database driven basic website.	2
	8.	WEB AND SCRIPTS SECURITIES User authentication, Sessions and sessions managements, cookies, Web security, Scripts security.	2
	9.	INTRODUCTION TO WEB SERVICES Introduction to web services, Definition, Service oriented architecture, Web services families, Web services protocol stack, SOAP, WSDL, Web service infrastructure, UDDI.	4
Laboratory		<ol style="list-style-type: none"> 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 Contact Hours	28
14. Text	Text Book	None	

	Reference Books	<ul style="list-style-type: none">▪ Douglas E. Comer, Internetworking with TCP/IP Vol.1: Principles, Protocols, and Architecture, 5/E, Prentice Hall, 2006.▪ Godbole and Kahate, Web Technologies: TCP/IP top Internet Application Architectures, McGraw Hill, 2003.▪ Bates, Web Programming: Building Internet Applications, John Wiley, 2002.▪ Deitel, Internet and World Wide Web How to Program, Prentice Hall, 2004.▪ Bai, et al, The Web Warrior Guide to Web Programming, Thomson, 2003.▪ David M. Geary, Advanced JavaServer Pages, Barnes and Noble, 2001.▪ Martin, J., "TCP/IP Networking - Architecture, Administration, and Programming", Prentice-Hall, 1994.
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