Aston University REG/03/53(2)

Quality and Standards Committee

Module Specification

School and Subject Group		School of Engineering and Applied Science, Electronic Engineering		
Module Code		EE4008		
Module Title		Internet Applications		
Module Type		Taught		
Date of introduction of new module		2001		
Level		7	Credit Value	10
Programme(s) in which module is available		MSc in Data Communications Networks MSc in Data Communications Networks (Distance Learning)		
Involvement of Other Schools		None		
Resource Split				
Name of Module Co-ordinator		Dr. John A.R. Williams		
Name of Module Advisor		Keith J Blow		
Related Modules	Pre-requisites	None		
	Co-requisites	None		
	Prohibited Combinations	None		
Minimum and Maximum Intake Sizes		None – None		
Aims of the Module To familiarise students with the technical issues and principles associated with a range of internet applications and services.				

Summary of Content

What is a protocol? ● Network protocols

The network edge ● Client/Server architectures, connectionless and connection oriented services

The network core ● circuit, packet and message switching, routing

Protocol layers and their service models ● layered architecture, Internet protocol stack, network entities and layers

Application layer ● Principles of application layer protocols

- the 'time' service
- The HTTP protocol
  - Overview, non-persistent and persistent connections, HTTP message format, User-Server interaction: Authentication and Cookies, The conditional GET, Web caches
- The FTP protocol
  - FTP Commands and replies
- Email
  - SMTP, comparison with HTTP, Mail message formats and MIME, Mail access protocols (POP3,IMAP)
- Socket programming with TCP (using Java)
  - Building a simple web server: web server functions

Security considerations ● What is network security?

- Principles of Cryptography
- Authentication: Who are you?
- Integrity
- Key distribution and Certification
- Secure E-mail (PGP)

Multimedia Networking ● Audio and Video Compression

- Streaming Audio and Video (Real time Streaming Protocol)
- Making the best of best-effort service
- RTP
- Beyond Best effort
- RSVP
- Differentiated Services

Summary of Methods and Frequency of Teaching	**Lectures** 18 hours. (On-campus students only) **Laboratory** 12 hours. Practical Work (can be carried out on home computer with provided software or in supported campus laboratory, supported via online discussion group)

Summary of Methods of Assessment

Assessment Type	*Status*	*%*	*Requirements*	*Due*
Formal Examination	Compulsory	50.0	Exam. 1.5hr formal examination	13 Dec 2009
Laboratory	Compulsory	25.0	Group.	11 Jan 2010
Online test	Compulsory	15.0	MCQ.	10 Dec 2009
Laboratory	Compulsory	10.0	HTTPD.	19 Nov 2009

Module Outcomes - what the student should gain from successful completion of the module:	Learning and Teaching and Assessment Strategies to enable outcomes to be achieved and demonstrated	
	Learning and Teaching Methods	Assessment Methods
A. Knowledge and Understanding		

the technical issues and principles associated with a range of internet applications and services	Laboratory, Lectures	Formal Examination, Laboratory, Online test
B. Intellectual Skills		
C. Professional Skills		
apply their knowledge of the principles underlying modern data networks	Laboratory	Laboratory
D. Transferable Skills		
teamwork	Laboratory	Laboratory

Please provide either or both of:	
(i) Introductory Learning Resources	
(ii) Core Texts	1. *Course text:*Chapters 1,2,6 and 7 of “Computer Networking: A Top-Down Approach Featuring the Internet” by James F. Kurose and Keith W. Ross, Addison Wesley Longman ISBN 0-201-47711-4, 2000 Âč59.99 2. A programmer’s guide for the Java platform. from SUN 3. “Network Security Essentials”, William Stallings, Pearson Higher Education 2002 0131202715 Âč29.99 4. “Pattern Language for Web Usability”, Ian Graham, Pearson Professional Education 2002 0201788888 Âč36.99
Reading Lists	Attached
Specification completed by:	Dr. John A.R. Williams
Date	22-Apr-2009
Date module approved by Teaching Committee(s)	
Date module approved by School Board(s)	