Liverpool John Moores University

Title:	INTERNETWORKING
Status:	Definitive
Code:	**7014COMP** (103273)
Version Start Date:	01-08-2011
Owning School/Faculty:	Computing and Mathematical Sciences
Teaching School/Faculty:	Computing and Mathematical Sciences

Team	Leader
Kashif Kifayat	Y
Michael Mackay	

Academic Level:	FHEQ7	**Credit Value:**	15.00	**Total Delivered Hours:**	36.00
Total Learning Hours:	150	**Private Study:**	114		

Delivery Options
Course typically offered: Semester 2

Component	Contact Hours
Lecture	12.000
Practical	6.000
Seminar	6.000
Tutorial	12.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	Develop an internetworking solution for a given application scenario including a critical review of appropriate technologies and related internet evolution issues.	100.0	

Aims

To develop understanding of distributed multimedia systems requirements
To develop understanding of global internetworking design challenges

To critically review solutions to internetworking problems
To examine current research directions in internetworking

Learning Outcomes

After completing the module the student should be able to:

1	Display an advanced knowledge of the design issues in distributed multimedia systems
2	Apply advanced knowledge in the design of a global internetworking solution
3	Critically evaluate solutions for supporting multimedia internetworking
4	Demonstrate expertise in the challenges of Internet evolution

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Internetworking solution	1	2	3	4

Outline Syllabus

The module is intended to reflect current research and deployment but the following themes are recurring (example topics are given but may vary)

Internetwork design: End-to-end argument, control/data plane, network neutrality and telecommunications

Multimedia: performance issues such as traffic shaping, call admission, congestion control, and technologies such as ATM, QoS, VoIP, H323, SIP, and Wide Area Ethernet

Wireless/Mobile: challenges of wireless and mobility, 3G telecommunications, IMS

Service Provision: ISPs, SLAs, network pricing/accounting

Security: encryption, DoS, protocol security, malware (e.g. worms)

Future research directions, e.g. cross-layer design, cognitive networks, programmable networks, future Internet design, overlay networks, ad hoc and sensor networks, conducting network experiments (e.g. PlanetLab).

Learning Activities

Lectures, Tutorials, Labs and Seminars

References

Course Material	Book
Author	Comer, D.
Publishing Year	2008
Title	Computer Networks and Internets
Subtitle	
Edition	5th Edition
Publisher	Prentice Hall
ISBN	0136061273

Course Material	Book
Author	Kurose, J.F. & Ross, K.W.
Publishing Year	2008
Title	Computer Networking: A Top Down Approach
Subtitle	
Edition	4th Edition
Publisher	Addison-Wesley
ISBN	0321497708

Course Material	Book
Author	Peterson, L.L. & Davie, B.S.
Publishing Year	2007
Title	Computer Networks a Systems Approach
Subtitle	
Edition	2nd Edition
Publisher	Morgan-Kaufman
ISBN	0123739748

Course Material	Book
Author	
Publishing Year	2009
Title	Journals including; ACM SIGCOMM Computer Communications Review, Elsevier Computer Communications, Elsevier Computer Networks, IEEE Communications, IEEE Network, (available via e-Journals/FindIt database)
Subtitle	
Edition	
Publisher	
ISBN	

Notes

This module builds on previous knowledge of computer networks and distributed multimedia systems to look at advanced issues relating to internetworking design.

The module will have a focus on contemporary deployment problems including Internet evolution, as well as current internetworking research challenges.