

THE INSTITUTE OF COMMERCIAL MANAGEMENT

SUBJECT SYLLABUS



Networks

Unit code: NK-0908

Level: Advanced Diploma

Credits: 20

Unit leader: PY

Pre-requisites:

Main Aims of the Unit:

This unit provides an overview of different types of networks and their use in business systems. The importance of the internet and the use of emails and associated applications will be explored. Further details will be included on the development tools associated with web design and the associated security issues.

Main Topics of Study:

A. Types of Networks

1. Definitions of LAN, WAN and the distinction between them.
2. Advantages and disadvantages of networking in general compared with stand-alone systems.
3. Advantages and disadvantages of networking in a particular situation.
4. Definition of Bandwidth. Importance of bandwidth.
5. Open Systems Interconnection (OSI).

B. LAN

1. Network topologies – Star, Bus, Ring, peer-peer.
2. Advantages and disadvantages of each of the main types of network.
3. Factors affecting speeds of networks.
4. How signals are passed and controlled in each of the network types.
5. The client-server.

C. WAN

1. Analogue and digital signals. Roles of the modem and multiplexer. Time Division Multiplexing (TDM). Frequency Division Multiplexing (FDM). ISDN.
2. Polling individual workstations.
3. Switching techniques – circuit, message, packet.
4. EDI. Uses made by business. Advantages compared with traditional communications.
5. EFT. Uses made by business. Advantages compared with traditional payment methods.
6. ATM usage by banks. The sequence of events WITHIN THE COMPUTER for a successful transaction in TECHNICAL terms.

D. Internet

1. Its origins.
2. Business use of internet.
3. Uniform Resource Locators (URL). Domain name. Domain name suffix. IP address.
4. Components of the Internet. WWW. E-mail, File Transfer Protocol Servers, News.
5. Use of internet by individuals.
6. Use of internet by business and organisations.
7. Setting up your own domain name.
8. Search engines. Structuring queries to eliminate irrelevant information.
9. Cookies.
10. Affects on society – good and bad.

E. E-mail

1. Registering for e-mail and logging on.
2. The e-mail system as seen by the user.
3. How to send and receive e-mail. Attachments.
4. Options open to the user on receiving an e-mail message.

F. Hypertext Markup Language (HTML) and JAVAscript

1. Purpose of the HTML language.
2. Format of the HTML language.
3. Simple web pages in HTML.
4. Javascript. Applets. Simple examples.

G. Data transfers

1. Hypertext Transfer Protocol (HTTP).
2. File transfer Protocol (FTP).
3. Transmission Control Protocol (TCP)
4. JPEG, MPEG formats

H. Control of a network and its security

1. Role of the network supervisor/manager.
2. Password systems. Allocation of passwords. Levels of access.
3. Network threats. Viruses and their control.
4. Hacking. Firewall.
5. Encryption. Public key encryption.

Learning Outcomes for the Unit:

At the end of this Unit, students will be able to:

1. Distinguish between different types of network (eg LAN and WAN)
2. Describe in detail the business uses of networks
3. Describe techniques and simple procedures used in the design of web pages
4. Evaluate security and privacy issues in relation to using networks

The numbers below show which of the above module learning outcomes are related to particular cognitive and key skills:

Knowledge & Understanding 1-4

Analysis 2, 4

Synthesis/Creativity 4

Evaluation 2, 4

Interactive & group Skills -

Self-appraisal/Reflection on Practice -

Planning and Management of Learning -

Problem Solving 2,4

Communication & Presentation -

Other skills (please specify) -

Learning and teaching methods/strategies used to enable the achievement of learning outcomes:

Learning takes place on a number of levels through lectures, class discussion including problem review and analysis. Formal lectures provide a foundation of information on which the student builds through directed learning and self managed learning outside of the class. The students are actively encouraged to form study groups to discuss course material which fosters a greater depth learning experience.

Assessment methods weightings which enable students to demonstrate the learning outcomes of the Unit:

3 hour examination: 100%
(Answer any 5 questions from 8, each question equals 20% of the marks)

Indicative Reading for this Unit:

Main text

Refer to the ICM website for learning material

Alternative Texts & Further Reading:

A Level Computing by PM Heathcote & S Langfield - Payne Galloway
ISBN 1 904467 52 0 (Fifth edition)

Computer Science for Advanced Level by R Bradley – Stanley Thornes
ISBN 0 7487 4046 5 (Fourth edition).

Guideline for Teaching and Learning Time (10 hours per credit)

Lectures / Seminars / Tutorials / Workshops: 50 hours

Tutorial support includes feedback on assignments and may vary by college according to local needs and wishes.

Directed learning: 50 hours

Advance reading and preparation / Class preparation / Background reading / Group study / Portfolio / Diary etc

Self managed learning: 100 hours

Working through the course text and completing assignments as required will take up the bulk of the learning time. In addition students are expected to engage with the tutor and other students and to undertake further reading using the web and/or libraries.

Guidelines

- Candidates need to be precise in their explanations for this technical subject. Defining a LAN as local does not explain “how local” the networks extends.
- Practical experience is desirable in using a LAN. Candidates should have used e-mail and the internet. A visit to an organisation that uses the internet for business would also be beneficial.
- Clear distinction should also be made between user actions and actions by hardware/software – for instance in drawing money from a bank using an ATM.
- If the centre has its own website, some benefit could be gained if the creator/controller could discuss his/her work with students. Similarly, discussion with a LAN supervisor would be useful.
- Only a brief introduction to HTML and Javascript is required. The named books cover this adequately.