

# Business Data Communications

*INFS5983 Session S2 - 2004*

School of Information Systems,  
Technology and Management

*The University of New South Wales*



## Aims of the Subject

To provide students with a basic understanding of:

- The fundamentals of Networks and Data Communications
- Data Communications and Distributed Data Processing in a business environment;
- The more common technologies underpinning e.business environments
- The management issues associated with telecommunication systems for business.
- The ethical issues associated with deploying networking technology to support e.business
- Reliability, security and risk assessment in telecommunication systems

## Course Arrangements

The course will normally consist of two sets of 2 hours lecture and one hour tutorial each week. Lectures are scheduled on Mondays from 6 to 9 PM.

## Academic Staff

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## Information Source

The Web Page of the Course is an important source of information. We highly recommend you visit it regularly. In order to access the web page you need to be enrolled in the subject and use your student ID and your unipass as password.

Web Page URL: <http://www.sistm.unsw.edu.au/courses/inf5983/>

## Assessment

<b>Tutorials/Case Study</b>	<b>10 %</b>
<b>Mid Session Quiz</b>	<b>10 %</b>
<b>Research Project</b>	<b>15 %</b>
<b>Exam</b>	<b>65 %</b>
<b>Total</b>	<b>100 %</b>

## Discussion Sets

A list of problems to be discussed during tutorials. Although they are not assessed, preparation is compulsory as students will be selected at random to present their findings. Students presenting will lead a discussion on the topics selected.

## Research Project

A list of topics will be published on the web during the first weeks of the session. A group may present their own topic proposal to the lecturer for suitability assessment. The research project is a considerable piece of research on an area of current development in the telecommunications industry from a business perspective.

## Tutorials/Case Studies

At least two tutorials will be published on the web during the session. Students are to prepare a written report on the selected topics in groups. Random group members will be selected to present and lead a discussion in tutorials. Case studies may be offered to student for revision and discussion during tutorial times. Discussion of the case stud(y/ies) will be carried out in workshop mode in selected tutorials.

## Mid Session Quiz

Mid Session Quiz will take place in the second half of the lecture time, in the same lecture venue.

### **Team Work Groups & Team Leader**

All activities (exception of Discussion Sets and Case Studies) are to be carried in groups of 4 people. The teams must be finalised by week 3. There will be no changes after that date. The marks assigned to each member of the group will be scaled based on peer assessment of each group member's contribution to the project. It should be noted that group members are expected to work in a harmonious and professional fashion. All work to be assessed should be treated as a **BUSINESS PROJECT** managed by a selected **Team Leader** (could be a different student for each of the different deliveries). The project manager will be responsible for timed delivery and to oversee that a strong ethical code is enforced. He/She will report to the lecturer and inform (via email) of teams' progress.

### **Handouts and Deliverables**

<b>Week No.</b>	<b>Handout</b>	<b>Collection</b>
1	Discussion Set 1	
2	Tutorial 1 / Research Project Topics	Discussion Set 1
3		Discussion Set 1
4	Discussion Set 2	Team Leader's Report
5		Discussion Set 2 / Tutorial 1
6	<b>Mid Session Quiz (20<sup>th</sup> of September) Check! &amp;</b>	Team Leader's Report
7	Tutorial 2	Team Leader's Report
8		
9		Research Project (Friday by 4 PM School Office)
10	NO LECTURE THIS WEEK!	
11		Tutorial 2

### **Workload Expectations**

As this is a Postgraduate subject, the expectation is that student will put the necessary effort to comply with the subject's requirements. This will vary from student to student but a reasonable expectation is, in addition to lectures, at least 5 extra hours per week for reading, working on tutorials/discussion sets and research project as well as preparation for lectures.

### **General Subject Assessment Requirements**

1. Although in order to pass this course, you must attain an overall mark of at least 50%, a mark of 45 percent or lower in a component of the subject would normally be regarded as unsatisfactory.
2. Each component of the subject may be scaled.
3. Late submission of assignments and tutorial work will incur a penalty of 10 percent of the maximum assessment mark per day. (Example: Assignment gets 70/100, handed in two days later means a final mark of 50). An extension in the time of submission will only be granted under exceptional circumstances by the tutor-in-charge. In all cases documented evidence must be provided. In determining unsatisfactory performance the penalty will be ignored.
4. In the case of peer assessed group work, the mark assigned to each member of the group will be scaled based on peer assessment of each member's contribution to the task. It should be noted that group members are expected to work in a harmonious and professional fashion which includes adequate management of non-performing members.
5. The School recognises and encourages the need of external students to have contact with each other and where possible to collaborate in their studies. However, there have been instances where students have copied each other's material and submitted it as their own. Lecturers and Tutors are not unaware of this practice. It is emphasised that where collusion can be shown, the students involved may be required to rewrite and re-submit their assignments or may be awarded a fail for the assignment or may be failed in the whole course and even excluded from the University for misconduct. You should not attempt the assignment questions together and submit the same work as someone else.

**It is also not acceptable to submit an assignment which has been submitted by a student in a previous year.**

### **Academic Misconduct**

Students are reminded that the University regards academic misconduct as a very serious matter. Students found guilty of academic misconduct are usually excluded from the University for 2 years. Because of the circumstances in individual cases the period of exclusion can range from one session to permanent exclusion from the University.

Plagiarism entails taking and using as one's own, the thoughts or writings of another without acknowledgement including: (a) where paragraphs, sentences, a single sentence or significant part of a sentence which are copied directly, are not enclosed in quotation marks and appropriately footnoted; (b) where direct quotations are not used, but ideas or arguments are paraphrased or summarised, and the source of the material is not acknowledged either by footnoting or other reference within the text of the paper; and (c) where an idea, which appears elsewhere in print, film or electronic medium, is used or developed without reference being made to the author or the source of the idea

**URL:** [http://www.student.unsw.edu.au/academiclife/assessment/academic\\_misconduct.shtml](http://www.student.unsw.edu.au/academiclife/assessment/academic_misconduct.shtml)

The following are some of the actions which have resulted in students being found guilty of academic misconduct in recent years:

1. Taking unauthorised materials into an examination;
2. Submitting work for assessment knowing it to be the work of another person;
3. Improperly obtaining prior knowledge of an examination paper and using that knowledge in the examination.
4. Failing to acknowledge the source of material in an assignment.

Students should consult the UNSW web page on how to write an essay and proper referencing techniques.

**URL:** [http://www.library.unsw.edu.au/links/Research\\_and\\_Study\\_Skills/](http://www.library.unsw.edu.au/links/Research_and_Study_Skills/)

### **Education Development Unit**

Additional learning support, tailored to the needs of FCE students, is available from the Education Development Unit (EDU) in the Faculty. The EDU offers a range of services for FCE students including:

Academic skills workshops run throughout the session;

Printed and on-line study skills resources e.g. referencing guide, report writing and exam preparation;

A drop-in resource centre containing books and audio visual material that can be borrowed;

A limited consultation service for students with individual or small group learning needs.

More information about the EDU services including on-line resources, workshop details and consultation request forms are available from the EDU website.

### **Contacts and location:**

EDU Web: <http://education.fce.unsw.edu.au>

EDU Location: Room 2039, Level 2 Quadrangle Building

EDU services are free and confidential and are available to students of the Faculty of Commerce and Economics.

### **Other UNSW support**

In addition to the EDU services, the UNSW Learning Centre provides academic skills support services for students. The Learning Centre is located on Level 2 of the Library and can be contacted by Phone: 9385 3890 or through their website: <http://www.lc.unsw.edu.au> Students experiencing problems of an academic or personal nature are encouraged to contact the Counselling Service at UNSW. This service is free and confidential and run by professional counsellors. The Counselling Service is located on Level 2, Quadrangle East Wing, and can be contact on 9385 5418.

## **Textbook, Supporting Material and Recommended Reading**

### **Textbook**

**White C. M.**, *Data Communications and Computer Networks: A Business Users' Approach*, Third Edition, Thompson: Course Technology, Australia, 2004.

### **Supporting Material**

**Stamper, D. A. & Case, T.L.**, *Business Data Communications*, 6th ed, Prentice Hall International Edition, 2003, Upper Saddle River, New Jersey

**Forouzan, B. A.**, *Data Communications and Networking*, 2nd Ed (UPDATE) McGraw-Hill Higher Education, New York, 2001 (Please, make sure you buy the right edition!)

**Web Page Links**, A set of selected web links will be published on the web page of the subject as "Tech Resources" and there will also be some "recommendations" at the end of each set of lecture handouts. Students are strongly encouraged to follow them.

### **Recommended Reading**

**Shay, W., A.**, *Understanding Data Communications & Networks*, 2<sup>nd</sup> Ed. International Thomson Publishing Company, Pacific Grove, 1999.

**Forouzan, B. A.**, *Local Area Networks*, 1<sup>st</sup> Ed., McGraw-Hill, Boston, International Edition, 2003

**Goldman, J. A.**, *Applied Data Communications- A Business Oriented Approach*, 2<sup>nd</sup> ed., John Wiley & Sons, Inc., New York, 1998

### **Peer Assessment Form and Assignment/Projects Cover Page**

Both can be downloaded off the subject's Web Page. All submitted work should include them.

### **Post Examination and Supplementary Exam Policy**

**URL:** <http://www.sistm.unsw.edu.au/student/schoolpolicies.html>

## Topics and Reading

Topic Number <sup>1</sup>	Topic Content	Textbook Reading
1	<b>Business Perspective on Data Communications</b> <ul style="list-style-type: none"> <li>➤ The Need for Data Communications</li> <li>➤ Information Transmission (business processes, e.business requirements, e.commerce example)</li> </ul> <b>Business Networks</b> <ul style="list-style-type: none"> <li>➤ Network Configurations</li> <li>➤ Open System Interconnection (OSI)</li> </ul>	Ch 1 White
2	<b>Data Communications Fundamentals I</b> <ul style="list-style-type: none"> <li>➤ <b>Business Focus:</b> Types of Data, Signals</li> <li>➤ Data Transmission</li> <li>➤ Data Encoding</li> </ul>	Ch 2 White
3	<b>Data Communications Fundamentals II</b> <ul style="list-style-type: none"> <li>➤ Conducted and Wireless Media</li> <li>➤ <b>Business Focus:</b> Media Selection Criteria</li> </ul>	Ch 3 White
4	<b>Making Connections</b> <ul style="list-style-type: none"> <li>➤ Modems, Interfaces</li> <li>➤ Transmitting Data, Type of Connections <ul style="list-style-type: none"> <li>✓ Synchronous vs Asynchronous</li> <li>✓ Simplex, Half &amp; Full Duplex</li> </ul> </li> </ul>	Ch 4 White
5	<b>Multiplexing: Sharing a Medium</b> <ul style="list-style-type: none"> <li>➤ FDM, TDM (STDM), WDM, CDM</li> <li>➤ <b>Business Focus:</b> Comparison of Multiplexing Techniques</li> </ul>	Ch 5 White
6	<b>Business Data Transmission Accuracy</b> <ul style="list-style-type: none"> <li>➤ Error Detection &amp; Error Correction</li> <li>➤ Data Link Control</li> <li>➤ Data Link Control Protocols</li> </ul>	Ch 6 – 7 (part) White
7	<b>Local Area Networks (LAN's)</b> <ul style="list-style-type: none"> <li>➤ Network Topologies</li> <li>➤ Ethernet, Fast-Ethernet, Gigabit Ethernet</li> <li>➤ Token-Ring, FDDI</li> </ul>	Ch 7 (part) White
8	<b>Networking &amp; Internetworking Devices</b> Bridges, Routers, Switches <b>LAN: Software &amp; Support Systems</b> <ul style="list-style-type: none"> <li>➤ Network Operating Systems</li> <li>➤ Client /Server &amp; Peer-to-Peer Networks</li> <li>➤ <b>Business Focus:</b> Current NOS trends</li> </ul>	Ch 8 - 9 White
9	<b>Wide Area Networks (WAN's)</b> <ul style="list-style-type: none"> <li>➤ Circuit Switching &amp; Packet-Switching</li> <li>➤ X.25, Frame-Relay, ATM</li> </ul>	Ch 10 & Ch 12 White
10	<b>Using the Internet for Business</b> <ul style="list-style-type: none"> <li>➤ TCP/IP Introduction and IP basics, IP Networks</li> </ul>	Ch 11 White
11	<b>Network Security (Information Integrity)</b> <ul style="list-style-type: none"> <li>➤ Risks and Security Threats</li> <li>➤ e.business Security</li> </ul> <b>Ethical Issues associated with e.commerce</b>	Ch 13 White
12	<b>Network Analysis, Design and Implementation</b> <ul style="list-style-type: none"> <li>➤ Building Networks for business</li> </ul> <b>Management of Information Technology</b> <ul style="list-style-type: none"> <li>➤ Network Management</li> </ul>	Ch 14 White

<sup>1</sup> Please note that the topic number does NOT necessarily have to match the week number.