School of Information Technology

ICT 523 Data Communication Strategies

First Semester 2007

Unit Coordinator: Associate Professor Lance Fung

Office: ECL 3.042

Phone: 9360 7586
Fax: 9360 2941

Email Address: L.Fung@murdoch.edu.au

CONTENTS

Section I Introduction 2
Handbook Description
Unit objectives, philosophy, and operation
Prerequisites
Learning Activities and Format of the unit
Unit Timetable

Section II Unit Resources 3
Study Materials
Text Book
Computer and Internet Resources
Unit Outline
Teaching Schedule
Changes from previous year

Section III Assessment Details 5
Assessment Components
Assignment Submission
Examination
Determination of the Final Grade
Assessment Information
University Policy on Assessment
SECTION I: Introduction

Handbook Description

This unit deals with the pivotal place of current and emerging data communications technologies in modern business enterprises and their use to gain strategic advantage. Strategic topics covered will include distributed systems, intranets, extranets, system security, information auditing and management of resources. Current and emerging technologies will be examined to be able to differentiate between technologies and particular advantages that they can bring to an organisation.

Unit objectives, philosophy, and operation

Decisions about the deployment and use of data communication technologies in an organisation have the ability to support or distract from the organizations stated mission. The specific technologies bring with them many possibilities for strategic advantage but the same technologies used in isolation from other organisational factors rarely have any beneficial effect.

The unit aim is for you to be able to incorporate your knowledge of organisational culture and structure to facilitate strategic advantage from the deployment of appropriate data communication technologies and strategies. The assessment is to be made from the perspective of the manager who is responsible for the deployment. The specific objectives are:

- To demonstrate knowledge and familiarisation of the various data communication technologies both extant and emerging
- To demonstrate an understanding of the influence of data communication technologies at the operational level to organizations and their staff
- To develop implementation plans for the strategic deployment of various data communication technologies
- To develop an awareness for the opportunity of innovative use of data communication technologies in traditional activities

The rapid advance of data communications technologies means that technologies are often deployed or replaced with the latest technology, well before anyone has really had time to analyse their benefit or pitfalls to an organisation. Changes in data communication technologies happen on an almost daily basis and literature in the area may invariably be lagging. It naturally follows that any usage of these technologies is normally based on extant usage models that do not necessarily extract the full advantage that these new technologies may bring.

In this unit you are expected to independently research both advances in and novel uses of data communication technologies. You are expected to contribute to the weekly class discussion on different case studies. These cases will cover different aspects of data communication strategies decisions. You are required to prepare a short briefing of your findings for possible delivery to your class in the lecture periods. This activity will allow you not only to express your own experiences and knowledge but also allow you to obtain the experience and knowledge of your fellow students.

Prerequisites

Enrolment in Postgraduate IT course.

Learning Activities and Format of the unit

There will be one three-hour session per week. This will include lecture delivery and activities such as Guest lectures, Workshops, Tutorials and student presentations. Studying at Master level expects a high degree of independence and interaction among the students. Students are expected to carry out independent research, reading and share their findings and experience with the class.

Unit Timetable

Lectures/Workshop: Wednesday 4:30PM to 7:30PM in ECL 1.034
SECTION II: Unit Resources

Study Materials

The following are required:

- this guide and detailed syllabus with topic information
- notes will be available on the unit ftp-page before or after each lecture
- weekly details of the research and reading work

Suggested References:


The Unit website at [http://ftp.it.murdoch.edu.au/ICT523/](http://ftp.it.murdoch.edu.au/ICT523/) will be the repository of unit materials. Definitive unit details, announcements, assignment and lecture slides are provided. Anything from the topic schedule or presented in class is eligible for inclusion in the exam, with answers referenced to the text book and materials developed by this class.

Computer and Internet Resources

All students should have access to computer resources and Internet for research and preparation of relevant documents. There is little computational or programming work in this unit.

Unit Outline

This unit will be delivered in four parts

- Part 1. Data Communication Technologies
- Part 2. LAN and Internet Access Technologies and Strategies
- Part 3. Wireless Technologies and Strategies

Each part of the unit will look at how different aspects of Data Communications and networking technologies can be used to support strategic applications within an organisation and how they are used to assist an organisation to gain strategic advantage in the market place. Each part will have distinct themes and each theme will consist of sub-themes.

Part 1 Data Communication Technologies

- Theme 1: Data Communications and Internet
- Theme 2: Business and the Internet

Part 2 Internet Access Technologies and Strategies

- Theme 1: Local Area Networks
- Theme 2: LAN Architecture and Software

Part 3 Wireless Technologies and Strategies

- Theme 1: Wireless technologies and Architecture
- Theme 2: Wireless Networks and Internetworking Technologies

Part 4 Network Management and Organisational Strategies

- Theme 1: Network Management Objectives
- Theme 2: Network Management Services and Security

Additional Materials and Support

Other readings, URLs and associated tutorials may be provided as the course progresses. Topic themes and order may vary slightly from wording above and includes the ongoing repository of unit materials.
## Teaching Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Case Studies</th>
<th>Due Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wk 1 21/2</td>
<td>Data Communications and Internet</td>
<td>Instant Messaging</td>
<td></td>
</tr>
<tr>
<td>Wk 2 28/2</td>
<td>Business and the Internet</td>
<td>Internet in the Sky</td>
<td></td>
</tr>
<tr>
<td>Wk 3 7/3</td>
<td>Off campus Conf. (No lecture)</td>
<td>Online Learning</td>
<td></td>
</tr>
<tr>
<td>Wk 4 14/3</td>
<td>Internet Operation</td>
<td>Internet2 and NGI</td>
<td>Project Part 1: presentation</td>
</tr>
<tr>
<td>Wk 5 21/3</td>
<td>LAN Architecture &amp; Software</td>
<td>Home Networks</td>
<td>Case Study Representation 1</td>
</tr>
<tr>
<td>Wk 6 28/3</td>
<td>Wide Area Networks</td>
<td>Video and Web Conferencing</td>
<td>Case Study Representation 2</td>
</tr>
<tr>
<td>4/4</td>
<td>Easter Break</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11/4</td>
<td>(Seminar @ Eng Aust) Murray St, 5:30PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wk 7 18/4</td>
<td>WAN Architecture &amp; WAN Services</td>
<td>Telemedicine</td>
<td>Case Study Representation 3</td>
</tr>
<tr>
<td>Wk 8 25/4</td>
<td>Anzac Day (No Lecture)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wk 9 2/5</td>
<td>Internetworking Technologies</td>
<td>Service Level Agreements</td>
<td>Case Study Representation 4</td>
</tr>
<tr>
<td>Wk 10 9/5</td>
<td>Network Management Objectives</td>
<td>Routers and Denial of Service attacks</td>
<td>Case Study Representation 5</td>
</tr>
<tr>
<td>Wk 11 16/5</td>
<td>Network Management Systems</td>
<td>Web-based Project Management</td>
<td>Final Project Presentation</td>
</tr>
<tr>
<td>Wk 12 23/5</td>
<td>Off campus Conf. (No lecture)</td>
<td></td>
<td></td>
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<tr>
<td>St. wk 30/5</td>
<td>One-day CIO course on campus (TBA)</td>
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Note that there are three days with no lecture due to Anzac Day on 25th April and two other prior commitments by the unit coordinator. The lectures will be made up by extended lectures during the subsequent weeks. In other words, it is likely that the lectures will go beyond 7:30PM. There are also two extra activities planned – to attend an off-campus seminar at the Engineer Australia Headquarter on Wednesday 11th April, 2007, 5:30PM. It is expected that the talk will be on Wireless Security. Details will be given out shortly. Another activity is to join an one-day CIO workshop on campus. This is expected to happen at the end of May subject to confirmation. Details will be given out later.

### Changes from previous year

1. The Project assignment has changed from Group to Individual. Marks were reduced from 40% to 30%.
2. Case Studies will be assessed and replaced journal submission. Two reports and presentations are required. 20% is allocated.
3. Final Examination contribution increased to 50%
4. Additional activities – Seminar and workshop are introduced to include industrial inputs.
SECTION III: Assessment Details

Assessment Components

Assessment of students' work in this course consists of several components:

- Project (Refer to project sheet for schedule and breakdown) 30%
- TWO Case Studies 20%
- Final Examination 50%

Assignments Submission

Note: It is the responsibility of all students to keep a copy of all submissions handed in for assessment.

The Project Assignment for this course will involve individual research and design work relating to the topics covered in the course. The details of the work to be done, submission requirements and submission dates are given out in the Project Information Sheet.

As most of the students will be likely taking up employments in the Information Technology industry, the standard of presentation of assignments and projects will be at a level suitable for putting before a Managing Director or the Managing Board. Also, in industry, it is essential that deadlines must be met. If an assignment is submitted late, 5% will be deducted for each day late up to a maximum of 7 calendar days. After 7 days (that is, 1 week after due date), no marks will be rewarded for the assignment.

If an extension is required, you must contact the unit coordinator. An extension may be granted on medical or compassionate ground, but the application must be supported with a medical certificate or appropriate document.

Submit all Project assignments and your case study reports to your unit coordinator direct. Assignment must be submitted in hard copy and soft copy. Marking will be done on the printed hard copy only. The soft copy may be submitted on a floppy disk, a CD-ROM or electronic mail. If you send by email, please make sure the file name contains the unit code and your last name. For example: ICT523_SMITH_Case Study

Each assignment must have a standard cover sheet. Cover sheets are available at:

http://ftip.it.murdoch.edu.au/ICT523

Examination

The final examination is a 3-hour "close-book" examination and will be held during the University assessment period at the end of semester. You are permitted to take one A4 sheet of HANDWRITTEN notes. You are permitted to hand write notes on both sides of the sheet. For further information about examinations, refer to

Determination of the Final Grade


Final Grade

In order to pass this unit, you must satisfy the following conditions:

achieve an overall aggregate score of 50% or higher for all of the combined assessments (Continuous Assessment and Final Examination);

and

• achieve a satisfactory performance in the final examination. A satisfactory performance is normally considered to be 45% or higher;

and

• achieve a satisfactory performance in the continuous assessment (Project, Assignment and Case-study Exercises). A satisfactory performance is normally considered to be 45% or higher.

Failure to achieve the above indicates that the unit objectives have not been met and so the unit has not been successfully completed.

*The award of the grade of S shall be at the recommendation of the Unit Coordinator to the Board of Examiners.

The grade descriptors are provided in the Murdoch University Handbook and Calendar and at


UNIVERSITY POLICY ON ASSESSMENT

Assessment for this unit is in accordance with the provisions of Degree regulations 40-48. Check these in the current Murdoch University Handbook and Calendar or http://www.murdoch.edu.au/admin/legsln/regs/bachelor.html#assessment

Assessment roles and responsibilities

Please refer to the University Policy on Rights and Responsibilities of Students and Staff

http://www.murdoch.edu.au/admin/policies/assessment.html#8

Honesty in assessment and avoiding plagiarism

For guidelines on honesty in assessment including avoiding plagiarism, see:

http://www.murdoch.edu.au/teach/plagiarism

Non-discriminatory language

Please refer to: http://www.murdoch.edu.au/teach/studyat/non_disc.html

FURTHER INFORMATION

Visit the unit welcome page: http://online.murdoch.edu.au/public/UNITCODE

End of ICT523 Unit Guide