



CARLETON UNIVERSITY

BUSI 4404 A
IT Infrastructure
Winter 2014

Instructor: Teddy Boyce

Office: TBD

Office Hours: Wednesday 4:45 p.m. – 5:45 p.m.

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Phone Number: 520-2600 Ext. TBD

Course Website: <http://culearn.carleton.ca>

Schedule: Wednesday 6:05-8:55 p.m. Lectures three hours a week.

Location: TBD

Prerequisites: Third-year standing and BUSI 2400 (with a grade of C- or better).

The School of Business enforces all prerequisites. It is your responsibility to ensure you meet the prerequisite requirements for this course. If you have taken a course or courses that you think is/are equivalent to the prerequisites specified for this course, you must show proof to the Undergraduate Adviser. Please bring in your transcript and course description(s). Failure to document this requirement will lead to mandatory de-registration. Only the School of Business can waive prerequisite requirements.

Course description

Challenges and issues managers face in assembling the infrastructure for IT service delivery. IT Service levels, data communications, networks (LAN, MAN, WAN, wireless), internetworking, web services, server and storage virtualization, network security, business continuity and disaster recovery.

Introduction

Telecommunications and data networking technologies are transforming how IT services are delivered in organizations. People and organizations increasingly are conducting their work and operations across time and space using computing and telecommunication networks. The technologies and applications afforded by these networks portend significant management challenges. Businesses now depend on information and

telecommunications technologies and services for their survival and profitability. The strategic impact of IT infrastructure on the firm's value chain is enormous. Managers therefore, must become familiar and conversant with the technologies underpinning IT Infrastructure and how best to apply and exploit them in generating business value.

Course Objectives

The course is designed for business students who need to develop an understanding of IT infrastructure issues and technologies and the challenges and opportunities associated with them. While it does cover some technical issues related to data and telecommunications the course is not designed to train computer and telecommunications networking engineers.

The course will:

- enable students to develop an understanding of the fundamental concepts of telecommunications, data communications and networking.
- familiarize students with network technologies, protocols and standards.
- explore the managerial considerations surrounding telecommunications and networking applications design, procurement and deployment.
- address issues related to the impact of telecommunications and networking technologies on the globalization of business activity and electronic commerce.

Required Text Book

Fitzgerald, J. and Dennis, A. (2011) Business Data Communications and Networking, 11th Edition, John Wiley and Sons.

The e-book can be purchased directly online at: <http://ca.wiley.com/WileyCDA/Section/id-814611.html>

Other References

1. White, C. (2009) Data Communications and Computer Networks, Thomson-Course Technology. 5th Edition.
2. Dennis, Alan (2002) Networking in the Internet Age, New York: John Wiley & Sons.
3. Rowe II, S. H., (2002) Telecommunications for Managers, Upper Saddle River, New Jersey: Prentice Hall. 5th Edition.
4. Stallings, W. (2001) Business Data Communications. Upper Saddle River, New Jersey: Prentice Hall, 4th Edition.

Online References

Light Reading (www.lightreading.com), Dark Reading (www.darkreading.com), Network Computing (www.networkcomputing.com), Network World (www.networkworld.com), Whatis.com (www.whatis.com), Information Week (www.informationweek.com), Datamation (www.datamation.com).

Evaluation and Grading

Grades will be based three (3) assignments and up to two (2) quizzes, a midterm exam, a group project, and a final exam. The distribution of marks towards the final grade will be as follows:

Individual Assignments and Quizzes	20%
Midterm	25%
Final Project	25%
Final Exam	30%
Total	100%

Individual Assignment

Students will do three individual assignments. At least one will be hands-on and based on material taken from the textbook. Source and due dates for the assignments are listed in the Course Schedule below.

Quizzes

Up to two (2) quizzes may be given during the term. Quizzes may be given unannounced. They will cover material in both the previous chapters and the chapter that is being covered on that particular day. There is no make-up for missed quizzes.

Final Project

For the team project, students working in group of three or four people (groups of two will **not** be allowed) will conduct a case study of a local company, not-for-profit organization, or government entity faced with a specific IP infrastructure management challenge (technical or operational) which can be solved by upgrading some part of the IT infrastructure. Each group will develop a proposal which details the planned solution and roadmap to implementation. The proposal must be in a form that will be presented to upper management in order to secure sponsorship, support, and funding for the plan. Therefore, the proposal must include key elements such as cost-benefit analysis, budget, etc.

Project Deliverables

Deliverables for the team project include the following: a project proposal, project report, project presentation, and a peer evaluation.

1. **Team Project Proposal :** The proposal should outline what the team plans to investigate and report on. It should contain the following: a title for the project, a short description and rationale, possible sources of information, resources that may be needed, and a project management schedule for the team's project (not the final implementation of the proposal). I will review each project proposal to verify its appropriateness for the course. The proposals must be submitted by the third class meeting.
2. **Project Report :** The project report should be constructed as a proposal for upgrade and request for funding, targeted at, and delivered in the language of, upper management. The proposal should contain at least the following: a title page; an executive summary page; table of contents and list of figures; departmental/company overview (i.e. how the affected department fits within, and contributes to, the overall organization); description of the problem and how it is negatively impacting the operations of the department/company; scope and requirements of proposed solution; limited cost-benefit analysis for proposed solution (**do not** include items: discounting/net present value/time value of money, uncertainty/sensitivity analysis; but **do** include an estimated payback period); proposed implementation plan for the proposed solution (including budget and timeline); references; and appropriate appendices and illustrations. The report should not be more than 4000 words in length, excluding appendices and illustrations. **You will lose 1 point for every 100 words over the allowed limit for the report.**
3. **Project Presentation :** Each team will give an in-class presentation of its project lasting no more than 15 minutes. This will consist of 12 minutes for the actual presentation and 3 minutes for questions. The limited presentation time makes it imperative for the group to organize what is to be presented. Visual aids should be used to enliven the presentations. However, these must be well designed and clear. All team members should take part in the presentation.
4. **Peer Evaluation :** Each student will be required to perform a peer evaluation of his or her peers' involvement and performance in the project team. The evaluation of team member involvement and performance in the project preparation and presentation, and team formation and development should be submitted by 18:00, April 4, 2014 via cuLearn. The peer evaluation will be used to adjust your project grade downward by a maximum of 20 points. **Failure to submit an evaluation will lead to a loss of 10% of your project grade.** Please check out the peer evaluation documents on cuLearn.

Example Project Focus Areas (Not an exhaustive list):

- Data and Telecommunications strategy
- LAN equipment and hardware provision
- Voice over IP telephone services
- Remote and mobile network access services
- Network management services
- Security and disaster recovery services
- Desktop management and support services
- Virtual Private Network

- Cloud Computing
- Managed Web hosting services

Assignment Submission

All written assignments should be submitted to the Instructor by **6:00 p.m., CuLearn**, on the day they are due. It is the student’s responsibility to ensure that all assignments are received in an accessible format on or before the due date. Assignments are due at the time indicated. Late assignments will be marked down by 10% for every calendar day late (only when late submissions are allowed). All documents should have the student’s name, number, and course section.

Additionally, **and only if specifically requested**, assignments should be printed and submitted to the instructor in class on the due date. Please do not include extra binding or folders

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

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|-------------|-------------|-------------|-------------|
| A+ = 90-100 | B+ = 77-79 | C+ = 67-69 | D+ = 57-59 |
| A = 85-89 | B = 73-76 | C = 63-66 | D = 53-56 |
| A - = 80-84 | B - = 70-72 | C - = 60-62 | D - = 50-52 |

F = Below 50 WDN = Withdrawn from the course

ABS = Student absent from final exam

DEF = Deferred

FND = (Failed, no Deferred) = Student could not pass the course even with 100% on final exam

Class news and updates to class outline and schedule

Please check the class webpage at <http://culearn.carleton.ca> for regular news and updates.

Class Schedule – Winter 2014

Dates	Topic	Group Assignment	Readings/ Individual Assignment
January 8	Introduction to Data Communications		Chapter 1
15	Application Layer		Chapters 2

22	Physical Layer		Chapter 3 Project Proposal Due Assignment 1 given
29	Data Link Layer		Chapter 4 Assignment 1 Due
February 5	Network and Transport Layer		Chapter 5 Assignment 2 given - hands-on part
12	Local Area Networks (Wired & Wireless) Backbone Networks		Chapter 6 Chapter 7 Assignment 2 Due
19	Winter Break		No Class
26	Midterm Exam		
March 5	Wide Area Networks The Internet		Chapter 8 Chapter 9
12	Network Security		Chapter 10 Assignment 3 given
19	Network Design		Chapter 11 Assignment 3 Due
26	Network Management		Chapter 12
April 2	Project Presentations		All Projects Due
April 4	Peer Evaluation		Peer Evaluations Due
TBA	Final Examination		As per Exam Schedule

IMPORTANT ADDITIONAL INFORMATION

Required calculator in BUSI course examinations

If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII

Group work

The Spratt School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

Medical certificate

Please note that in all occasions that call for a medical certificate you must use or furnish the information demanded in the standard university form.

<http://www2.carleton.ca/registrar/forms/>

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your **Letter of Accommodation** at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website for the deadline to request accommodations for the formally-scheduled exam (*if applicable*).

The deadline for contacting the Paul Menton Centre regarding accommodation for final exams for the April 2014 exam period is March 7, 2014.

Religious observance

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student.

Students or instructors who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holy

days and Carleton's Academic Accommodation policies, or may contact an Equity Services Advisor in the Equity Services Department for assistance.

Pregnancy

Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete a letter of accommodation. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

Academic Integrity

Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated. Penalties may include expulsion; suspension from all studies at Carleton; suspension from full-time studies; a refusal of permission to continue or to register in a specific degree program; academic probation; and a grade of Failure in the course, amongst others. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at <http://www2.carleton.ca/sasc/advisingcentre/academic-integrity/>.

Important Dates & Deadlines – Winter 2014

Date	Activity
January 2, 2014	University re-opens.
January 6, 2014	Winter-term classes begin.
January 17, 2014	Last day for registration for winter term courses. Last day to change courses or sections (including auditing) for winter term courses.
January 31, 2014	Last day for withdrawal from winter term and winter portion of fall/winter courses with full fee adjustment.
February 1, 2014	Last day for receipt of applications for admission to the Bachelor of Architectural Studies and the Bachelor of Social Work degree programs for the fall/winter session.
February 14, 2014	April examination schedule available online.
February 14-22, 2014	Fall-term deferred examinations will be written.
February 17, 2014	Statutory holiday. University closed.
February 17-21, 2014	Winter Break, no classes.
March 1, 2014	Last day for receipt of applications from potential Spring (June) graduates. Last day for receipt of applications to the Bachelor of Humanities, Bachelor of Industrial Design, Bachelor of Information Technology (Interactive Multimedia and Design), Bachelor of Journalism, and the Bachelor of Music degree program for the

Date	Activity
March 7, 2014	fall/winter session. Last day for receipt of applications for admission to a program for the summer term. Last day to submit, to the Paul Menton Centre for Students with Disabilities, Formal Examination Accommodation Forms for April examinations.
March 25, 2014	Last day for tests or examinations in courses below the 4000-level before the final examination period (see Examination Regulations in the Academic Regulations of the University section of this Calendar).
April 1, 2014	Last day for receipt of applications for admission to an undergraduate degree program for the fall/winter session, from candidates whose documents originate outside Canada or the United States, except for applications due February 1 or March 1.
April 8, 2014	Winter term ends. Last day of fall/winter and winter-term classes. Last day for academic withdrawal from fall/winter and winter-term courses. Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for fall/winter and winter-term courses.
April 9-10, 2014	No classes or examinations take place.
April 11-26, 2014	Final examinations in winter term and fall/winter courses may be held. Examinations are normally held all seven days of the week. Please note that examinations will not be held on April 18-20.
April 15, 2014	Winter Co-op Work Term Reports are due.
April 18, 2014	Statutory holiday, University closed.
April 26, 2014	All take home examinations are due on this day.
May 1, 2014	Last day for receipt of applications for internal degree transfers to allow for registration for the summer session.
June 1, 2014	Last day for receipt of applications for admission to an undergraduate program for the fall/winter session from mature applicants, from those presenting post-secondary education qualifications and from those transferring from other universities in Canada or the United States, and from applicants with high school qualifications from Canada and the United States, except for applications due March 1.
June 9-19, 2014	Fall/winter and winter term deferred final examinations will be held.
June 15, 2014	Last day for receipt of applications for internal degree transfers to allow for registration for the 2013-2014 fall/winter session.