Computer Science (COMP) 604

Enterprise Computer Networks (Revision 5)

Status:	Replaced with new revision, see the **course listing** for the current revision
Delivery mode:	**Grouped study** with **eText**
Credits:	3
Area of study:	Information Systems
Prerequisites:	None
Precluded:	None
Faculty:	**Faculty of Science and Technology**

Notes:	This is a graduate level course and students need to apply and be approved to one of the graduate programs or as a non-program **School of Computing and Information Systems** graduate student in order to take this course. Minimum admission requirements must be met. Undergraduate students who do not meet admission requirements will not normally be permitted to take this course.
Instructor:	**Dr. Qing (Ching) Tan**

Overview

Computer Science 604 teaches students some of the advanced technologies for designing, implementing, and managing enterprise-wide computer networks. It begins with some fundamental concepts and theories for those with limited knowledge of data communication and computer networks. Following the mandatory computer network fundamentals part of the course, students work on a research paper. This course provides a foundation for many other courses such as distributed computing and web technology for electronic commerce. It not only examines both theoretical and technical issues, but also provides students with some real-world experience of enterprise-wide networking and network management.

Outline

The nine units covering enterprise computer network fundamentals will be completed by the end of Week 4 and tested in Week 5. Week 6-13 will be devoted to research work.

- Unit 1: Introduction and Review: Network Concepts and Standards

- Unit 2: Networking Fundamentals - Transmission Basics, Media, and Hardware
- Unit 3: Networking Protocols, Topologies and Access Methods
- Unit 4: WANs, Internet Access and Remote Connectivity
- Unit 5: Enterprise Networking
- Unit 6: Wireless Networking (WLAN)
- Unit 7: Internetworking with TCP/IP for Enterprise Applications
- Unit 8: Enterprise Network Implementation and Management
- Unit 9: Enterprise Network Security: Issues, Concepts and Techniques
- Unit 10: Research Work

Learning outcomes

Upon completion of the course, students will be able to:

- analyze state-of-the-art real-world enterprise-wide networks;
- design, build, and implement advanced enterprise-wide computer networks;
- manage, configure, troubleshoot, and maintain typical enterprise-wide computer networks;
- effectively communicate course work in writing and oral presentation.

Objectives

This course is designed to:

- provide an in-depth view of the advanced technologies used in enterprise-wide computer networks;
- provide the theoretical foundation and practical skills of advanced computer networks for many other relevant topics, such as distributed computing;
- introduce both theoretical, practical, and technical issues in enterprise-wide computer networks;

- provide the background needed for enterprise-wide networking and network management;
- develop students' interpersonal and teamwork skills

Evaluation

In order to receive credit for COMP 604, you must achieve a cumulative course grade of "B-" (70 percent) or better, and achieve a grade of at least 60 percent on the Oral Test. Your cumulative course grade will be based on the following assessment.

Activity	Weight	Complete by
Assignment 1: Computer and Network Fundamentals	20%	end of Week 4
Oral Test: Computer Network Fundamentals	20%	in Week 5
Assignment 2: Research Proposal	20%	end of Week 7
Assignment 3: Research Paper	30%	end of Week 12
Assignment 4: Online Presentation	10%	in Week 13
Total	**100%**	

Materials

Dean, T. (2013). *Network+ Guide to Networks* (6th ed.). Boston, MA: Course Technology, Cengage Learning.  (eText)

eText

Registration in this course includes an electronic textbook. For more information on **electronic textbooks** , please refer to our **eText Initiative site** .

Other Materials

In addition, documents on the following websites will be used for supplemental reading. The eText also provides a large number of relevant URLs.

- **Microsoft Corporation**
- **The Internet Engineering Task Force** (IETF)
- **StarTech**
- **Cisco**
- **Oracle and Sun**
- **Linux Online**

The reminder of the course material is distributed in electronic format as follows:

- COMP 604 study guide (Unit 1-10)
- detailed description of the requirements for the individual assignments
- a course evaluation form

Special Course Features

COMP 604 can be completed online at the student's workplace or home.

Special Note

Students registered in this course will NOT be allowed to take an extension due to the nature of the course activities.

Important links

- **Future Course Offerings**

- **Important Dates and Deadlines**
- **MScIS Contact Information**

Athabasca University reserves the right to amend course outlines occasionally and without notice. Courses offered by other delivery methods may vary from their individualized study counterparts.

Opened in Revision 5, August 26, 2020

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View **previous revision**