



CAMOSUN COLLEGE
Trades and Technology
Electronics and Computer Engineering

ELEN 134
Network Fundamentals

Winter 2019
COURSE OUTLINE

The calendar description is available on the web @

camosun.ca

Please note: This outline will not be kept indefinitely. It is recommended students keep this outline for their records, especially to assist in transfer credit to post-secondary institutions.

1. Instructor Information

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| (a) Instructor | Trevor Curtis |
| (b) Office hours | TBA |
| (c) Location | CBA 122 |
| (d) Phone | 250 370 4441 |
| (e) E-mail | curtis@camosun.bc.ca |
| (f) Website | www.camosun.bc.ca |

2. Intended Learning Outcomes

Networking Fundamentals course introduces the student to local area networks, internetworking and the associated concepts. Students will configure hardware and network resources required to create a functional LAN. The OSI model will be used extensively as a tool to discuss the various concepts such as IP addressing and TCP/IP. The students will explore the Cisco Command Line Interface as they learn how to program network switches and routers. This course follows the Cisco Certified Network Associate (CCNA) curriculum. Lab exercises will focus on the practical skills of Networking Fundamentals.

Upon successful completion of this course a student will be able to:

- Explain the principles of networking architectures;
- Explain the principles of the OSI model;
- Explain the principles of networking protocols;
- Explain the principles of TCP/IP protocols;
- Explain the principles of network access and security;
- Explain the application of international standards in networks;
- Apply the principles of physical layer devices;
- Apply the principles of basic data link layer devices;
- Apply the principles of basic network layer devices; and
- Explain the basic principles of VOIP.

3. Required Materials

- (a) There is no required text for this course. All the information is available online via Cisco Networking Academy site (www.netacad.com)
- (b) Access Cisco recommended Networking equipment
- (c) Student File Share: <\\elexsrv1\elexpub\elen 134>

4. Course Content

Introduction to Networking Course

0. Course Introduction

- 0.1. Welcome to Introduction to Networks

1. Exploring the Network

- 1.1. Globally Connected
- 1.2. LANs, WANs, and the Internet
- 1.3. The Network as a Platform
- 1.4. The Changing Network Environment

2. Configuring a Network Operating System

- 2.1. IOS Bootcamp
- 2.2. Basic Device Configuration
- 2.3. Addressing Schemes

3. Network Protocols and Communications

- 3.1. Rules of Communications
- 3.2. Network Protocols and Standards
- 3.3. Data in the Network

4. Network Access

- 4.1. Physical Layer Protocols
- 4.2. Network Media
- 4.3. Data Link Layer Protocols
- 4.4. Media Access Control

5. Ethernet

- 5.1. Ethernet Protocol
- 5.2. LAN Switches
- 5.3. Address Resolution Protocol

6. Network Layer

- 6.1. Network Layer Protocols
- 6.2. Routing
- 6.3. Routers
- 6.4. Configuring a Cisco Router

7. IP Addressing

- 7.1. IPv4 Network Addresses
- 7.2. IPv6 Network Addresses
- 7.3. Connectivity Verification

8. Subnetting IP Networks

- 8.1. Subnetting and IPv4 Network
- 8.2. Addressing Schemes
- 8.3. Design Considerations for IPv6

9. Transport Layer

- 9.1. Transport Layer Protocols
- 9.2. TCP and UDP

10. Application Layer

- 10.1. Application Layer Protocols
- 10.2. Well-Known Application Layer Protocols and Services

Holidays

See Camosun Calendar

5. Basis of Student Assessment (Weighting)

(a) Assignments (PKA)	=	10%
(b) Chapter Exams	=	10%
(c) Term and Final Exams		
CCNA Midterm Skills Exam (1hr)	=	10 %
CCNA Final Theory Exam (1hr)	=	25%
CCNA Final Skills Exam (2hr)	=	30%
(d) CCNA Lab Exercises	=	10%
(e) Subjective: Professionalism	=	5%
	=	100%

Attendance is required for all classes and labs. It is the student's responsibility to communicate with the instructor, preferably prior to any absence.

Professionalism: "the skill, good judgment, and polite behavior that is expected from a person who is trained to do a job well" (Merriam Webster online). Students will be evaluated on the above as well as their ability to work well in a team.

It is the student responsibility to read the online Cisco Curriculum chapters for that week in advance in order to develop a clear understanding of the content covered in class and lab.

You need to keep a journal for any information relating to this course such as terminology, lab exercises, observations, and procedures.

Please note the following:

1. A grade of 60% or better is required in all assessment items above to be able to pass the course.
2. A grade of 60% or better is required in all assessment items above for this course to qualify as a prerequisite.
3. No late materials will be accepted past midnight of the last day of the course.
4. Late materials will be awarded a grade of 0
5. No opportunity will be available to write missed quizzes.
6. A student is required to inform the instructor prior to being late or missing a class, or as soon as possible.

6. Grading System

Standard Grading System (GPA)

Competency Based Grading System

7. Recommended Materials or Services to Assist Students to Succeed Throughout the Course

LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College Calendar, Student Services or the College web site at <http://www.camosun.bc.ca>

STUDENT CONDUCT POLICY

There is a Student Conduct Policy. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, Registration, and on the College web site in the Policy Section.

<http://www.camosun.bc.ca/policies/policies.html>

A. GRADING SYSTEMS <http://www.camosun.bc.ca/policies/policies.php>

The following two grading systems are used at Camosun College:

1. Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D		1
0-49	F	Minimum level has not been achieved.	0

2. Competency Based Grading System (Non GPA)

This grading system is based on satisfactory acquisition of defined skills or successful completion of the course learning outcomes

Grade	Description
COM	The student has met the goals, criteria, or competencies established for this course, practicum or field placement.
DST	The student has met and exceeded, above and beyond expectation, the goals, criteria, or competencies established for this course, practicum or field placement.
NC	The student has not met the goals, criteria or competencies established for this course, practicum or field placement.

B. Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy at <http://www.camosun.bc.ca/policies/E-1.5.pdf> for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete</i> : A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress</i> : A temporary grade assigned for courses that are designed to have an anticipated enrollment that extends beyond one term. No more than two IP grades will be assigned for the same course.
CW	<i>Compulsory Withdrawal</i> : A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.