



Data Networks 1 – AUST 107 Autonomous Systems Technician Program

Course Outline

COURSE IMPLEMENTATION DATE: September 2020
OUTLINE EFFECTIVE DATE: September 2020
COURSE OUTLINE REVIEW DATE: March 2025

GENERAL COURSE DESCRIPTION:

Instruction will cover the fundamentals of LANs, routers, switches, router and switch programming, network standards, and terminology. Topics also include the OSI model, cabling, TCP/IP protocol suite including IP addressing and subnetting for both IPv4 and IPv6. A close look at Ethernet and the functionality of the Data-Link and Physical layers allows students to visualize and describe communication between computers and networks. Students will also learn valuable network troubleshooting techniques and concepts.

Program Information: This course is required for the first year of the Autonomous Systems Technician program.

Delivery: This course is delivered face to face.

COTR Credits: 3

Hours for this course: 90 hours

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	45
Seminars / Tutorials	
Laboratory / Studio Hours	45
Practicum / Field Experience	
Other Contact Hours	
Total	90

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-Job Experience	
Formal Work Experience	
Other	
Total	

Course Outline Author or Contact:

Joy Brown, BEd

Signature

APPROVAL SIGNATURES:

Department Head
Joy Brown
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Dr. Jack Moes
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Department Head Signature

Dean Signature

EDCO

Valid from: September 2020 – March 2025

Education Council Approval Date

COURSE PREREQUISITES AND TRANSFER CREDIT:

Prerequisites: AUST 106 with a minimum grade of C- (55%) or higher.

Corequisites: N/A

Flexible Assessment (FA):

Credit can be awarded for this course through FA Yes No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Transfer Credit: For transfer information within British Columbia, Alberta and other institutions, please visit <http://www.cotr.bc.ca/Transfer>.

Student should also contact an academic advisor at the institution where they want transfer credit.

Prior Course Number: N/A

Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Cisco Networking Academy online course materials

Companion Guide text from Cisco Press (Optional)

Please see the instructor's syllabus or check COTR's online text calculator

<http://go.cotr.bc.ca/tuition/tCalc.asp> for a complete list of the currently required textbooks.

LEARNING OUTCOMES:

Upon the successful completion of this course, students will be able to

- identify the devices and services that are used to support data communications;
 - describe the OSI model, its layers and the functions of each layer;
 - use network protocol models to explain the layers of communications in data networks
 - describe the importance of addressing and naming schemes at various layers of data networks;
 - explain fundamental Ethernet concepts such as media, framing and switching;
 - describe the structure and format of the IP addressing system;
 - describe the differences between straight-through, crossover and roll-over patch cords;
 - describe simple network architecture;
 - calculate and apply subnet masks and IP addresses;
 - build a simple Ethernet network using routers, switches and computers;
 - perform basic device configuration using router and switch CLI commands; and
 - troubleshoot and verify correct network operations.
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COURSE TOPICS:

- Data Communications Devices and Services
- OSI Model
- Data Networks
- Ethernet Networks
- Network Architecture

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

EVALUATION AND ASSESSMENT (Face-to-Face Delivery):

Assignments	% of Total Grade
Labs	20%
Lab Tests (x2 @ 10% each)	20%
CISCO Chapter Exam	10%
CISCO Final Exam	10%
Mid-term Exams (x2 @ 10% each)	20%
Final Exam	<u>20%</u>
Total:	100%

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

EXAM POLICY:

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

COURSE GRADE:

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	< 50

A grade of "D" grants credit but may not be sufficient as a prerequisite for sequential courses.

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating and plagiarism.

COURSE CHANGES:

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.

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