



CIST-105 – Introduction to Data Communication and Networking

Technology

Effective Term & Year: Fall 2024
Course Outline Review Date: 2029-03-01

Program Area: Information Technology

Description:

In this course learners will study the fundamentals of computer networking, protocols, components, major networking technologies and systems of modern networks, and will be able to configure, manage, and troubleshoot modern networks. Students will learn how to provide access to local and remote network resources and to enable end to end connectivity between remote devices. Students will also learn how to implement IPv4 and IPv6 addressing schemes.

The topics include TCP/IP protocol suite, multiplexing/switching techniques, basic error detection and correction, elementary data link protocols, flow control and an introduction to routing and congestion control issues, multiple access protocols, networking and internetworking devices, LANs and WANs.

Program Information:

This course is required for the first year of the Computer Information Systems Technology program. Students will receive a certificate from CISCO Networking Academy after this course.

Delivery Methods: Hybrid – On-campus (Face-to-Face) and Online

Credit Type: College of the Rockies Credits

Credits: 3

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	30
Seminar/Tutorials	
Laboratory/Studio	30
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	60

Course Requisites:

- Completed the following:
 - [CIST101](#) – Computer Systems Administration (4)

Prior Learning and Recognition: Yes

Students are able to request formal recognition of their prior learning or experience outside the classroom. Challenge examination, portfolio-assisted assessment, work-based assessment or a combination of assessments that is appropriate to identify, assess, and recognize prior skills, competencies, and knowledge to achieve course credit. Tuition fees apply, refer to [Policy 2.5.5 Prior Learning Assessment and Recognition \(PLAR\)](#) or contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see <https://www.bctransferguide.ca/> or <https://transferalberta.alberta.ca> . For more transfer credit information, please visit <https://www.cotr.bc.ca/Transfer>

All requests for course transfer credit from institutions in British Columbia or elsewhere should go to the College of the Rockies Enrolment Services office.

Textbook Resources:

At the Course Outline Effective Date the following textbooks were in use:

Cisco Academy Course Material and CCNA 200-301 Official Cert Guide.

Please see the instructor's syllabus or check COTR's online text calculator <https://textbook.cotr.bc.ca/> for a complete list of the currently required textbooks.

Learning Outcomes:

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

- describe computer networks and network media; identify major types of network implementations;
 - configure the TCP/IP protocol;
 - identify major TCP/IP services;
 - describe WAN infrastructures;
 - configure IPv4 and IPv6 addressing schemes
 - identify components of cloud computing and virtualization;
 - describe methods of preventing security breaches;
 - identify components of remote networking; and
 - identify methods of network management.
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Course Topics:

- Computer networks and media
- Basic network connectivity and communications
- Network application communications
- Building and securing a small network
- Ethernet concepts
- Communicating between networks
- IP addressing
- TCP/IP protocol and services
- WAN infrastructures
- Remote networking
- Network management and troubleshooting

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

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Module quizzes	15%
Participation	5%
Module Labs	30%

Project	20%
Final Exam	30%
Total	100%

Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

Evaluation Notes: A grade of “D” grants credit, but may not be sufficient as a prerequisite for sequential courses.

Evaluation Notes Comments:

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 Attendance:

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a “0” on the exam.

Academic Policies:

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.1.4 Course Audit
- Policy 2.4.1 Credential Framework
- Policy 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Rights, Responsibilities and Conduct
- Policy 2.4.8 Academic Performance
- Policy 2.4.9 Student Feedback and Concerns
- Policy 2.4.11 Storage of Academic Works
- Policy 2.5.3 Student Appeal
- Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)

Course Changes:

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to

this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outlin