COLLEGE OF
THE ROCKIES

WIST-106 – Introduction to Networks

Technology

Effective Term & Year: Fall 2022
Course Outline Review Date: 2027-03-01

Program Area: Information Technology

Description:

This first course in the 3-course Cisco Networking Academy series is an introduction to how networks operate and introduces students to architectures, models, protocols, and networking elements, functions needed to support the operations and priorities of Fortune 500 companies to small innovative retailers. Students will build simple local area networks (LANs), develop a working knowledge of IP addressing schemes and foundational network security and be able to perform basic configurations for routers and switches. After completing all three CCNA courses, WIST 107, WIST 108 and WIST 109 students are able to take the Cisco Networking Academy (CCNA) Certification.

Program Information:

This course is required for the first year of the Wireless Systems Technician program.

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

Credit Type: College of the Rockies Credits

Credits: 4

Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	60
Seminar/Tutorials	

Laboratory/Studio	60
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	120

Course Requisites:

- Earned a minimum grade of C- (55%) in each of the following:
    - WIST105 – Digital Fundamentals (4)

Flexible Assessment: Yes

In some cases students may be able to apply for recognition of prior learning outside the classroom. This flexible assessment process provides equivalent course credit. It is a rigorous process that may include external evaluation, worksite assessment, demonstration, standardized test, self-assessment, interview, products/portfolio, and challenge exam, or other measures as appropriate. Tuition fees apply. Contact an education advisor for more information.

Course Transfer Credit:

For information about receiving transfer credit for courses taken at other BC institutions, please see http://www.bctransferguide.ca. All requests for course transfer credit from institutions in BC or elsewhere should go to the College of the Rockies Enrollment Services office.

Textbook 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 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

- explain the advances in modern network technologies;
- implement initial settings including passwords, ip addressing, and default gateway parameters on a network switch and end devices;
- explain how network protocols enable devices to access local and remote network resources;
- explain how physical layer protocols, services, and network media support communications across data networks;
- calculate numbers between decimal, binary, and hexadecimal systems;
- explain how media access control in the data link layer supports communication across networks;
- explain how ethernet operates in a switched network;
- explain how routers use network layer protocols and services to enable end-to-end connectivity;
- explain how arp and nd enable communication on a local area network;
- implement initial settings on a router and end devices;
- calculate an ipv4 subnetting scheme to efficiently segment your network;
- calculate an ipv6 subnetting scheme to efficiently segment your network;
- explain how icmp manages messaging between devices;
- compare the operations of transport layer protocols in supporting end-to-end communication;
- explain the operation of application layer protocols in providing support to end-user applications;
- configure switches and routers with device hardening features to enhance security; and
- implement a network design for a small network to include a router, a switch, and end devices, switches and computers.

Course Topics:

- OSI Model
- Data Networks
- Ethernet Networks
- Network Architecture

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

Evaluation and Assessments

Assessment Type: On-Campus (face-to-face) and Online, or Hybrid

Assessment Type	% 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	20%
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

Pass requirements: None

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 2.4.3 Students with Documented Disabilities
- Policy 2.4.4 Student Conduct (plagiarism, other cheating, behavioral misconduct)
- Policy 2.5.8 Academic Performance
- Policy 2.5.3 Grade Appeal
- Policy 2.4.9 Student Concerns Re Faculty

Equivalent Course(s) and Course Code Changes

Prior Course Code: AUST 107

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 outline.