



TEJ3M1 – Computer Engineering Technology

Cisco Networking Academy – CCNA Routing and Switching

Introduction to Networks

Prerequisites: None

Teacher: Mr. T. Nguyen

Textbooks: online curriculum - <https://www.netacad.com> or <http://ciscoacademy/ccna1/> (intranet only)

Materials: pens, pencils, paper, 3 ring binder, calculator

This course combines the expectations of the TEJ3M1 course and the Cisco Networking Academy program.

The **Cisco CCNA® Routing and Switching** curriculum provides foundational networking knowledge, practical experience, opportunities for career exploration, and soft-skills development to help students prepare for entry-level careers in IT and networking. The curriculum offers a hands-on approach to learning, and uses interactive tools and easy-to-follow labs to help students learn the general theory needed to build networks.

CCNA Introduction to Networks is designed to be offered as an independent, standalone curriculum or combined with programs offered by secondary schools, technical schools, colleges, and universities. Students who enroll in CCNA Introduction to Networks are not expected to have any previous technical skills or knowledge, aside from basic PC skills.

Ministry of Education –TEJ3M1 Expectations

This course examines computer hardware and the control of external components from an engineering perspective. Student will learn how to solve problems, and will study the functions of key computer components and peripherals, logic gates, fundamental programming concepts, internal numbering and character representation systems, and operating systems and networks. Students will also develop an awareness of potential careers in the field of computer engineering.

Ontario Catholic School Graduate Expectations

The purpose of Technological Education in the Catholic faith community is to enable young adults to develop and utilize their gifts and resources to find solutions and develop products that benefit others in a way that models gospel values. The focus of the curriculum is to enable students to become critical and innovative problem-solvers who question the use of resources and understand the implications of technological innovations. An emphasis on process as well as results ensures that students create products and provide services that recognize our God-given responsibility to respect the dignity and value of the individual and the protection of the environment.



Ontario Catholic School Graduate Expectations: CGE1d, CGE2b, CGE2c, CGE3c, CGE3f, CGE4f, CGE5a.

A Discerning Believer Formed in the Catholic Faith Community who (CGE1d) develops attitudes and values founded on Catholic **social teaching** and acts to promote social responsibility, human solidarity and the common good;

An Effective Communicator who (CGE2b) reads, understands and uses written materials effectively

An Effective Communicator who (CGE2c) presents information and ideas clearly and honestly and with sensitivity to others;

A Reflective and Creative Thinker who (CGE3c) thinks reflectively and creatively to evaluate situations and solve problems;

A Reflective and Creative Thinker who (CGE3f) examines, evaluates and applies knowledge of interdependent systems (physical, political, ethical, socio-economic and ecological) for the development of a just and compassionate society.

A Self-Directed, Responsible, Life Long Learner who (CGE4f) applies effective communication, decision-making, problem-solving, time and resource management skills;

A Collaborative Contributor who (CGE5a) works effectively as an interdependent team member;

Theory and Foundation - Overall Expectations

By the end of this course, students will:

- describe how the internal components of the computer enable the peripherals to function;
- describe a problem-solving model such as the input, processing, output model; explain internal numbering and character representation systems;
- describe the relationship between the binary number system and computer logic; define a standard way of representing characters in binary code;
- use precise terminology in relation to all hardware, interfaces, and networking systems;
- identify the basic internal and external components of a computer; describe the primary function of each basic component;
- identify computer internal and peripheral devices and describe their relationship



- describe how computers store and work with different types of data, including numbers and characters- connect and use correctly a variety of computer components and peripherals;
- demonstrate the use of an operating system, including a network; set up a desktop computer system and install software;
- trace the operation of a system consisting of a program, an interface, hardware, and directories; use appropriate file management techniques;
- use correctly a variety of network system software;
- use Internetworking services correctly to access and navigate global information resources. describe the evolution of computer electronics;
- identify the social impact of computers and associated technologies; identify related computer careers.
- use appropriate strategies to avoid potential health and safety problems associated with computer use, such as posture problems, eye strain, and musculoskeletal injuries;
- use safe practices in the handling of computer hardware and electronic components;
- identify important scientific advances in computer electronic components;
- describe the development of computer engineering technology and its impact;
- describe careers related to computer engineering;
- analyze the influences of computers on the engineering profession;
- describe how computer engineering has evolved and how it has affected people's security, safety, and privacy;
- demonstrate understanding of the importance of ethical computer use;
- demonstrate compliance with acceptable-use policies;
- identify computer skills that are important to employers.

Cisco Networking Academy –CCNA1- Learning Goals

Goal #	By the end of the semester, each student will
1	Master basic content: OSI model, Internetworking devices, IP Addressing, LAN media & Topologies, Structured cabling, electronics
2	Master hands on lab skills
3.	Master people skills: working in engineering teams, self and project management,
4.	Achieve awareness and access: basic technological literacy; awareness of IT careers; preparation for future Cisco Networking Academy curriculum;



CCNA1 - Cisco Networking Academy Evaluation

TERM – 70% **FINAL- 30%**

Application	25%
Thinking/Inquiry	25%
Communication	25%
Knowledge	25%

Culminating	10%
Final Exam	20%

IMPORTANT: To be eligible for Certificate of Completion from Cisco Systems and to take CCNA2 course, a course average of at least 50% and a Final Exam mark of 60% or more are needed (75% for the Cisco letter).

Class Expectations

1. Presentations, labs and or activities will commence immediately after the start of class. Students are expected to be in class, in **full uniform**, with all required materials / supplies prior to the starting bell.
2. Students are expected to be on target with class lessons and labs. Students who are absent are responsible for making up missed work. The course curriculum can be reviewed on the Cisco Networking Academy web site at: <https://www.netacad.com>. Log on as indicated by your teacher using the assigned login id and password. Students also can access the course curriculum through school computers at <http://ciscoacademy/ccna1/>.
3. Upon successful completion of this course students will receive an OSSD credit. The Cisco Academy program will present a **Certificate of Completion** from Cisco Systems to all students who successful pass the final exam with a mark of 60% or more and who have been absent less than ten days due to non-school related absences (75% for the Cisco letter). Excessive absences will also result in missed labs and therefore a reduced mark.
4. Students will be provided with on-line IDs and passwords to access the Cisco Networking site: <https://cisco.netacad.com>. Students will be provided access to the computer network in Rm 108. The 'Computer Access / Networking Agreement' signed by parents and students is in effect. Any student breaking the agreement by damaging class equipment or hacking will lose access to the network.
5. Students must confirm to all of the policies of the 'Student Network Agreement'. Failure to follow these policies may result in the permanent removal from the Cisco Networking Academy program.