
**CISCO CERTIFIED NETWORK
PROFESSIONAL (CCNP) –
ROUTING AND SWITCHING**

AEC – LEA.CS



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CISCO CERTIFIED NETWORK PROFESSIONAL (CCNP) ROUTING AND SWITCHING AEC - LEA.CS

PROGRAM OBJECTIVE

The goal of this two-semester program is to develop students' ability to plan, design, implement, verify and troubleshoot local and wide-area enterprise networks as well as collaborate with network professionals on advanced security, voice, wireless and video solutions. Additionally, by providing students with the appropriate training, the program also aims at preparing graduates to successfully complete the three industry-recognized Cisco CCNP - Routing and Switching certification exams (300-101, 300-115, and 300-135). Students will obtain sought-after skills in complex network troubleshooting which are critical for those seeking advancement in careers in the IT networking sector.

CAREER OUTLOOK

An advanced specialization such as the CCNP certification enhances employment prospects and career advancement possibilities for professionals already working in IT, specifically in the following positions:

Network Administrator	Network Installation Manager
Network Manager	Network Operations Manager
Network Supervisor	Network Controller
Network Engineer	Network Analyst
Support Engineer	Systems Engineer

TARGETED CLIENTELE

This *Cisco Certified Network Professional (CCNP) – Routing and Switching – AEC (LEA.CS)* is directed at those who have already acquired the building blocks of networking through professional experience or formal studies, such as the Network Management DEC (420.AC) and/or the CCNA – Routing and Switching AEC (LEA.21). In general, they will be working in IT positions, or recently graduated from computer science programs and will see this additional certification as a means to enhance their opportunities for acquiring employment or advancement. They will be technically-oriented and comfortable with the hands-on, practical nature of the program. Students must also meet the government requirements for admission to an AEC program.

ADMISSION REQUIREMENTS

To be admissible for this AEC program, applicants must meet the eligibility requirements of the *Règlement sur le régime des études collégiales* that are in effect at the time of admission as well as the specific requirements.

Ministerial Requirements

Applicants must have a Quebec Secondary V Diploma OR a Diploma of Secondary Studies OR equivalent scholary OR have instruction deemed acceptable by the College.

In addition, the applicant must meet **one** of the following requirements:

- The applicant's studies have been interrupted for at least two consecutive terms or one school year.
- The applicant is covered by an agreement entered into by the College and an employer or by a government program.
- The applicant has completed at least one year of post-secondary studies over a period of one year or more.

Specific Requirements

Students must demonstrate a knowledge level equivalent to the CCNA – Routing and Switching certification. The following are deemed equivalent:

- a valid¹ CCNP (routing and switching) or CCIE certification;
- a valid² CCNA (routing and switching) certification;
- an expired CCNA, CCNP, CCIE (routing and switching) certification or other network certifications deemed equivalent;
- a completed program of studies containing CCNA level content;
- previous professional experience involving CCNA level content.

Applicants will be asked to submit their curriculum vitae (CV) and proof of CCNA completion. They will be asked to write a qualifying exam if their CCNA was done more than two years before the application for CCNP AEC. This exam will be based on the CCNA curriculum.

Applicants may be interviewed for English-language proficiency. They must have attained a certain level of mastery of the English language, in order to be able to deal with the course content.

Potential candidates may be required to take an appropriate remedial course(s).

¹ CCNP certifications are valid for a period of three (3) years.

² CCNA certifications are valid for a period of three (3) years.

GENERAL INFORMATION

Total number of hours: 375 hours

Anticipated Dates: Semester 1 – February 18th 2019 – June 19th 2019
Semester 2 – August 2019 – December 2019

Schedule: Mondays and Wednesdays (6:30 p.m. to 10:30 p.m.)
and
Alternating Saturdays (9:00 a.m. to 4:00 p.m.)

PROGRAM CONTENT

Course	Course Title	Hours
420-937-LA	Implementing Infrastructure Services	45
420-938-LA	Advanced IP Routing	75
420-939-LA	Advanced IP Switching	75
420-940-LA	Advanced IP Troubleshooting	90
420-942-LA	Implementing Complex IP Networks	90
Total		375

FEES

Application Fee (new student)	\$30.00
Registration Fee (\$145.00 per semester x 2 semesters)	\$290.00*
CCNP Routing and Switching v2.0	
Official Certification Guide Library - ISBN 978-1-58720-663-4	\$165.00
**Lab Kit (Console Cable)	\$35.00

**Fee may vary depending upon Québec Residency Status*

***At the discretion of the instructor*

Please note that if you choose to withdraw from a course(s) or if you fail a course(s), it may affect your student status and you may have to pay tuition fees – (Example - \$1.50 per course hour and a \$25.00 registration fee).

Also, by withdrawing from a course(s) or failing a course(s) within your Attestation program, it may make it difficult or impossible for you to continue with your program at that time, it may delay you in the completion of your program, or it may hinder your opportunity to complete the program as the College cannot guarantee that the program will continue to be offered in the future.

Information and fees are subject to change.

In order to more fully ensure that our graduates are competitive in the market place, the College reserves the right to modify portions of this program at any time.

COURSE DESCRIPTIONS

IMPLEMENTING INFRASTRUCTURE SERVICES

420-937-LA

Pre-requisite: None

This course provides students with an opportunity to define and apply algorithmic problem-solving approaches to the implementation of infrastructure services. Through the evaluation of complex scenarios, students will configure, maintain and evaluate IP infrastructure. Thereafter, students will troubleshoot any problems that arise by applying relevant problem-solving approaches and tools. Topics covered include: Troubleshooting methodologies, Cisco troubleshooting tools, algorithmic solutions, FIB, adjacency tables, HTTP, HTTPS, debugging and NTP authentication.

ADVANCED IP ROUTING

420-938-LA

Pre-requisite: 420-937-LA

This course provides students with an opportunity to configure and evaluate advanced IP routing. Through the application of content learned in the first course as well as an introduction to new routing technologies, students will develop the ability to implement complex routing solutions that target specific and complex scenarios. Students will then evaluate their implemented solutions and learn to make judgments on how effective the configurations were. Topics covered include: GRE, DMVPN, EVN, Access ports, VLAN databases, PVST+, Unicast, EUI-64 and eBGP.

ADVANCED IP SWITCHING

420-939-LA

Pre-requisite: 420-938-LA

This course provides students with an opportunity to configure and evaluate advanced IP switching. Students will develop the ability to implement complex switching solutions that target specific and complex scenarios. Students will then evaluate their implemented solutions and learn to make judgments on the efficacy of the configurations. Topics covered include: PPP, Frame-relay, SDM templates and MAC address tables.

ADVANCED IP TROUBLESHOOTING

420-940-LA

Pre-requisite: 420-939-LA

This course encompasses all topics relevant to the CCNP certification and relies on the solid foundation of skills that students have developed over the first three courses. This course provides students with an opportunity to practice advanced troubleshooting methodologies through the analysis of troubleshooting requests and complex IP scenarios that combine aspects of infrastructure, security, routing and switching. Students are prompted to evaluate probable causes and propose effective solutions. Finally, students must implement these solutions and validate them through an evaluation of the steps taken during the resolution. Topics covered include: VTPv2, VTPv3, dot1Q, Split-horizon, Route poisoning, 4-byte AS number, NSSA.

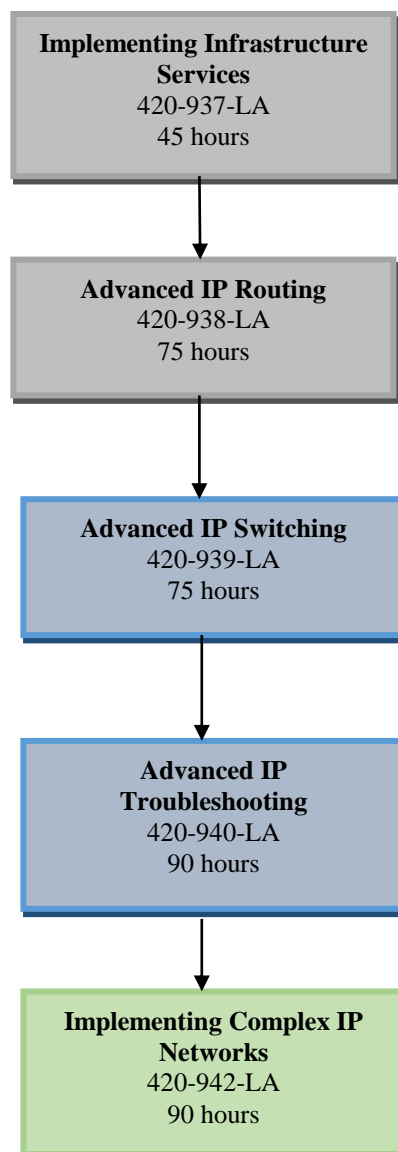
IMPLEMENTING COMPLEX IP NETWORKS

420-942-LA

Pre-requisite: 420-940-LA

This course concludes the CCNP program by prompting students to plan, design and implement an advanced IP routing and switching configuration that targets the issues and elements of a complex, industry-specific scenario. This course is primarily hands-on, requiring students to spend most of their time in a laboratory environment, working on and producing the solution to their scenario. Finally, students are asked to auto-evaluate and report on how effective their network installation was and reflect on how well the scenario was solved. Because this course synthesizes all program content, there are no specific topics covered in this course.

FLOWCHART: COURSE SEQUENCE



COMPETENCIES

Upon completion of the program, the student will be able to:

BJ7H	Apply and evaluate advanced algorithmic problem-solving approaches.
BJ8H	Evaluate and troubleshoot infrastructure services.
BJ9H	Evaluate and troubleshoot infrastructure security.
BJ0J	Configure and evaluate IP routing and switching.
BJ1J	Maintain and troubleshoot complex IP networks.
BJ2J	Plan and implement a complex IP routed and switched network.