



ORIGINAL COURSE IMPLEMENTATION DATE: September 2020  
 REVISED COURSE IMPLEMENTATION DATE:  
 COURSE TO BE REVIEWED (six years after UEC approval): January 2026  
 Course outline form version: 05/18/2018

## OFFICIAL UNDERGRADUATE COURSE OUTLINE FORM

Note: The University reserves the right to amend course outlines as needed without notice.

<b>Course Code and Number:</b> ELTR 180		<b>Number of Credits:</b> 3 <a href="#">Course credit policy (105)</a>															
<b>Course Full Title:</b> Networks and Data Communications <b>Course Short Title:</b> Networks and Data Comms <i>(Transcripts only display 30 characters. Departments may recommend a short title if one is needed. If left blank, one will be assigned.)</i>																	
<b>Faculty:</b> Faculty of Applied and Technical Studies		<b>Department (or program if no department):</b> Electronics															
<b>Calendar Description:</b> Introduction to basic concepts and terminologies related to data communications, networking, and network topologies. Students will learn about the TCP/IP protocol suite and the principles of protocols at the physical, data link, network, and transport layers. Networking and internetworking devices, LANs, and WANs will also be discussed.																	
<b>Prerequisites (or NONE):</b>		NONE															
<b>Corequisites (if applicable, or NONE):</b>		NONE															
<b>Pre/corequisites (if applicable, or NONE):</b>		ELTR 100, ELTR 130, and ELTR 150.															
<b>Antirequisite Courses</b> <i>(Cannot be taken for additional credit.)</i> Former course code/number: Cross-listed with: Dual-listed with: Equivalent course(s): <i>(If offered in the previous five years, antirequisite course(s) will be included in the calendar description as a note that students with credit for the antirequisite course(s) cannot take this course for further credit.)</i>		<b>Special Topics</b> <i>(Double-click on boxes to select.)</i> This course is offered with different topics: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, topic will be recorded when offered.)</i>															
		<b>Independent Study</b> If offered as an Independent Study course, this course may be repeated for further credit: <i>(If yes, topic will be recorded.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes, repeat(s) <input type="checkbox"/> Yes, no limit															
		<b>Transfer Credit</b> Transfer credit already exists: <i>(See <a href="#">bctransferguide.ca</a>.)</i> <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes Submit outline for (re)articulation: <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <i>(If yes, fill in transfer credit form.)</i>															
<b>Typical Structure of Instructional Hours</b> <table border="1"> <tr> <td>Lecture/seminar hours</td> <td>30</td> </tr> <tr> <td>Tutorials/workshops</td> <td></td> </tr> <tr> <td>Supervised laboratory hours</td> <td>15</td> </tr> <tr> <td>Experiential (field experience, practicum, internship, etc.)</td> <td></td> </tr> <tr> <td>Supervised online activities</td> <td></td> </tr> <tr> <td>Other contact hours:</td> <td></td> </tr> <tr> <td><b>Total hours</b></td> <td><b>45</b></td> </tr> </table>		Lecture/seminar hours	30	Tutorials/workshops		Supervised laboratory hours	15	Experiential (field experience, practicum, internship, etc.)		Supervised online activities		Other contact hours:		<b>Total hours</b>	<b>45</b>	<b>Grading System</b> <input checked="" type="checkbox"/> Letter Grades <input type="checkbox"/> Credit/No Credit	
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Labs to be scheduled independent of lecture hours: <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes		<b>Maximum enrolment (for information only):</b> 36 <b>Expected Frequency of Course Offerings:</b> Winter only <i>(Every semester, Fall only, annually, etc.)</i>															
<b>Department / Program Head or Director:</b>		<b>Date approved:</b> November 2019															
<b>Faculty Council approval</b>		<b>Date approved:</b> November 14, 2019															
<b>Dean/Associate VP:</b> John English		<b>Date approved:</b> November 14, 2019															
<b>Campus-Wide Consultation (CWC)</b>		<b>Date of posting:</b> January 17, 2020															
<b>Undergraduate Education Committee (UEC) approval</b>		<b>Date of meeting:</b> January 31, 2020															

**Learning Outcomes**

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

- Discuss and summarize the concept of data communications.
- Assemble, operate, and troubleshoot basic data networks.
- Operate basic data network software on the Windows or Linux operating systems.
- Explain and discuss the TCP/IP networking model.
- Identify and select common network cables (twisted pair, coaxial, fiberoptic).
- Identify and operate basic network equipment (modem, router, switch, wireless access point).
- Explain and discuss common application protocols (HTTP, HTTPS, FTP, SSH).
- Explain and discuss transmission control protocol (TCP).
- Explain and discuss internet protocol (IP).

**Prior Learning Assessment and Recognition (PLAR)**

☒ Yes      ☐ No, PLAR cannot be awarded for this course because

**Typical Instructional Methods** *(Guest lecturers, presentations, online instruction, field trips, etc.; may vary at department's discretion.)*

Lecture and Lab Work

**NOTE:** The following sections may vary by instructor. Please see course syllabus available from the instructor.

**Typical Text(s) and Resource Materials** *(If more space is required, download Supplemental Texts and Resource Materials form.)*

Author (surname, initials)	Title (article, book, journal, etc.)	Current ed.	Publisher	Year
1. Behrouz A Forouzan	Data communication and networking	<input checked="" type="checkbox"/>	McGrawHill	2012
2.		<input type="checkbox"/>		
3.		<input type="checkbox"/>		
4.		<input type="checkbox"/>		
5.		<input type="checkbox"/>		

**Required Additional Supplies and Materials** *(Software, hardware, tools, specialized clothing, etc.)***Typical Evaluation Methods and Weighting**

Final exam:	40%	Assignments:	10%	Field experience:		Portfolio:	%
Midterm exam:	%	Project:		Practicum:	%	Other:	%
Quizzes/tests:	20%	Lab work:	30%	Shop work:	%	Total:	100%

**Details (if necessary):****Typical Course Content and Topics**

- Basic definition of a network, brief history, and common uses.
- OSI and TCP/IP network models
- Application layer
- Transport layer
- Internet layer
- Network infrastructure layer
- Servers and clients
- Modems and routers
- Switches and cables
- Wireless access points