NORTHWESTERN POLYTECHNIC

DEPARTMENT OF SCIENCE

COURSE OUTLINE – Winter 2025

CS3130: Telecommunications and Computers – 3 (3-0-3) UT
90 Hours for 15 Weeks

Northwestern Polytechnic acknowledges that our campuses are located on Treaty 8 territory, the ancestral and present-day home to many diverse First Nations, Metis, and Inuit people. We are grateful to work, live and learn on the traditional territory of Duncan's First Nation, Horse Lake First Nation and Sturgeon Lake Cree Nation, who are the original caretakers of this land.

We acknowledge the history of this land, and we are thankful for the opportunity to walk together in friendship, where we will encourage and promote positive change for present and future generations.

INSTRUCTOR:	Dr. Mohamed Elgamal	**PHONE:**	780-539-2976
OFFICE:	C-306	**E-MAIL:**	melgamal@nwpolytech.ca
OFFICE HOURS:	TW. 15:00-17:00 (by Appointment)		

CALENDAR DESCRIPTION:
Introduction to computer communication networks. Digital data and voice transmission. Protocols for error and flow control, media access for LANs and MANs, routing and condition control, interconnection of networks. Introduction to recent advances in networks.

PREREQUISITE(S)/COREQUISITE:
CS2000 and CS2010

RECOMMENDED TEXT/RESOURCE MATERIALS:
"Foundations of Python Network Programming", third edition, Rhodes, B and Goerzen, J

DELIVERY MODE(S):
In-Person, On-Campus
This course includes 3-hours of lectures per week and 3-hours lab.

Lectures:	G112	TR	10:00 – 11:20
Lab:	G112	M	14:30 – 17:20

COURSE OBJECTIVES:

This course will introduce students to the following programming concepts using Python:

- Client/Server programming.
- Developing Application-layer protocols programs, such as:
  - HTTP client/server and WWW,
  - Mail (SMTP/POP/IMAP),
  - Telnet / SSH, and FTP.

LEARNING OUTCOMES:

As a result of taking this course, students will gain the ability to:

- Demonstrate and articulate fundamental knowledge of the various protocols found at the different layers of the internet protocol stack.
- Identify the protocols that are work in the different network applications that users interact with.
- Demonstrate the developing of programs running over networks.

TRANSFERABILITY:

Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at the Alberta Transfer Guide main page http://www.transferalberta.ca.

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. **Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability**

EVALUATIONS:

Lab Assignments:	40%
Course Project:	10%
Quizzes:	15%
Midterm:	10%
Final Exam:	25%

Late work will not be accepted and will be granted a mark of 0. All work must be submitted via myClass; no emailed assignments will be accepted. The due date for each assessment will be posted in the myClass.

GRADING CRITERIA:

Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE/TENTATIVE TIMELINE:

- Introduction to Python
- Introduction to Client / Server Programming
- UDP/TCP/DNS
- TLS /SSL
- Server Architecture
- HTTP Clients /Server and WWW
- Mail - SMTP /POP /IMAP
- Telnet / SSH
- FTP

STATEMENT ON PLAGIARISM AND CHEATING:

Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, refer to the Student Conduct section of the Northwestern Polytechnic Calendar at https://www.nwpolytech.ca/programs/calendar/ or the Student Rights and Responsibilities policy which can be found at https://www.nwpolytech.ca/about/administration/policies/index.html.

**Note: all Academic and Administrative policies are available on the same page.

STUDENT RESPONSIBILITIES:

Students are responsible for all lecture material, labs and readings. If the final is missed due to illness it will be deferred. A doctor's note or a phone message or email will be required in both cases.

It is the student's responsibility to adhere to ALL requirements of the assignments. Students are expected to arrive on time for both class and lab. If students are consistently late, they may be barred from attending future classes

Assignments MUST be submitted on their due date. Late assignments will NOT be accepted and will receive a grade of 0.

The quizzes are programming tasks to measure the students' programming skills and will be during the lab or class time.

NOTE: To pass this course, the students **MUST** pass in the practical programming part (i.e., %50 at least in the combined marks for assignments, project and programming quizzes/midterms) and **MUST** also pass the theoretical part as well (i.e., %50 at least in the combined theoretical midterms and final tests).