

DEPARTMENT SCIENCE
COURSE OUTLINE – Winter 2024

ST1510 (A3): Introduction to Applied Statistics I – 3 (3-0-2) 75 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: Tom McLeister **PHONE:** (780) 539-2961
OFFICE: J212 **E-MAIL:** tmcleister@nwpolytech.ca
OFFICE HOURS: MWR13:00 -14:00; F10:00—15:00

CALENDAR DESCRIPTION:

The course includes data collection and presentation, descriptive statistics. Probability distributions, sampling distributions, and the central limit theorem; point estimation and hypothesis testing; correlation and regression analysis; goodness of fit and contingency table.

PREREQUISITE(S)/COREQUISITE: Prerequisites: Mathematics 30-1 or equivalent or Mathematics 30-2 or equivalent

REQUIRED TEXT/RESOURCE MATERIALS:

Open (free) textbook at www.lyryx.com: Introductory Statistics, Current Edition (by Illowsky, Dean, openstax) ([Click here](#) to go to download page!)

DELIVERY MODE(S):

Lecture:	A3	T R	11:30 – 12:50	J204
Lab:	AL2	T	14:30 – 16:20	A312
	AL1	W	14:30 – 16:20	A312

LEARNING OUTCOMES: At the end of this course, the student should be able to:

- Demonstrate basic knowledge of descriptive statistics and its use
- Perform calculations and solve problems involving elementary probability theory
- Perform elementary analysis of research data and to interpret the results of statistical tests.
- Demonstrate a conceptual knowledge of the concepts and principles involved in inferential statistics
- Select the appropriate statistical test.
- Analyze data using the computer program EXCEL.

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:

Assignments	10%
Lab Reports	10%
Midterms	2 × 20% (Tentatively Thur Feb 15, Thur Mar 28)
Lab Exam	10% (AL1 Wed Apr 10; AL2 Tue Apr 9)
Final Exam	30% (Cumulative, during exam period Wed Apr 17—Wed Apr 24)

It is the student's responsibility to be available to write the final exam at the scheduled time. Writing early is not permitted.

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:

- Chapters 1,2 Sampling, Experiments, Graphs, Measures of Central Tendency and Spread
- Chapters 3-7 Probability, Probability Distributions, Binominal, Normal, Sampling Distributions of \bar{x} and \hat{p} , Central Limit Theorem
- Chapter 8 Confidence Intervals
- Chapter 9-11 Hypothesis Tests about the Mean, Proportion, Two Populations, Chi-square
- Chapter 12 Linear Regression, Correlation, Inference about B
- Chapter 13 ANOVA

STUDENT RESPONSIBILITIES:

Students are responsible for all lecture material, labs and readings. Students are expected to practice the material by doing problems from the textbook and/or exercises posted on myClass. Assignments are not accepted if handed in late. If a midterm is missed due to illness the weight will be put on the next midterm or the final. If the final is missed due to illness it will be deferred (see calendar for information). A doctor's note and a phone message or email will be required in both cases.

STATEMENT ON ACADEMIC MISCONDUCT:

Academic Misconduct will not be tolerated. For a more precise definition of academic misconduct and its consequences, refer to the Student Rights and Responsibilities policy available at <https://www.nwpolytech.ca/about/administration/policies/index.html>.

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