

DEPARTMENT OF BUSINESS AND OFFICE ADMINISTRATION

COURSE OUTLINE – Fall 2024

BA2060 (A2): Statistics for Business – 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: Chuntai Jin, Ph.D. **PHONE:** (780) 593-2857
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OFFICE HOURS: Tuesdays & Thursdays, 10:00 - 11:30 AM

CALENDAR DESCRIPTION:

This is an introduction to the use of random variables, descriptive statistics, probability, the binomial and normal probability distributions, estimation, small and large sample theory, analysis of variance, tests of hypotheses, regression analysis, forecasting, time series and linear programming is provided. Practical applications are emphasized in the course.

PREREQUISITE:

BA1050

REQUIRED TEXT/RESOURCE MATERIALS:

- Sharpe, De Veaux, Velleman, & Wright (2020). *Business Statistics 4th Canadian Edition*, Pearson.
<https://www.pearson.com/store/p/business-statistics-fourth-canadian-edition/P100002962598>

This textbook includes *MyLab Statistics*. *MyLab* is a learning platform that allows students to practice course material without limit. It will also help you identify topics you still need to work on and will create a personalized study plan. Furthermore, you are required to complete a series of online assignments in *MyLab*. You need an access code to register for *MyLab Statistics* for this course. *MyLab* registration instructions are available on D2L.

- Microsoft Excel/StatCrunch will be used to assist with the statistical calculations. StatCrunch is available through *MyLab Statistics*.
- A business/financial calculator (TI-BA II Plus is recommended).

DELIVERY MODE(S):

On-campus (face-to-face) – This type of course will be delivered on campus in a specific location which will be indicated on the student timetable. Students are expected to fully attend in person.

LEARNING OUTCOMES:

Upon completion of this course students will be able to understand and explain:

- What are the five W's and how use them to identify the context of data
- different types of data including quantitative/categorical; cross-sectional/time series; and primary/secondary
- different ways of selecting a representative sample
- how to use a bar or pie chart appropriately and how to analyze contingency tables
- how to display data in a histogram and in a stem-and-leaf diagram
- how to draw a scatterplot and use it to analyze the relationship between two variables
- how to calculate the correlation as a measure of linear relationship between two variables
- how to use a linear model to analyze the relationship between two variables
- probability distribution and statistical inference
- the difference between independent and disjoint events
- how to represent probabilities of multiple events using a probability tree
- how to model discrete random variables and continuous random variables
- the sampling distribution of a proportion and a mean
- how to calculate a confidence interval and perform a hypothesis testing for a proportion
- the relationship between hypothesis tests and confidence intervals
- how to calculate a confidence interval for the difference between two proportions
- how to perform a hypothesis test comparing two proportions
- how to construct a confidence interval and perform a hypothesis testing for a mean
- how to calculate a confidence interval for the difference between two means
- how to perform a homogeneity test and a goodness-of-fit test

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.alberta.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.....	20%
Term Test 1	20%
Term Test 2	20%
Final Exam.....	40%

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	95-100	C+	2.3	67-69
A	4.0	85-94	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

STUDENT RESPONSIBILITIES:

- Attendance:** Students are expected to attend all scheduled lectures, arrive on time, and remain for the duration of the activities. Arriving late and leaving early is disruptive to the entire class. Frequent tardiness may be treated as an absence. **Students with absences in excess of 6 classes may be refused permission to write the final exam.** For more information, please refer to the Academic Regulations on Debarred from Exams at <https://www.nwpolytech.ca/programs/grading-systems.html>
- Time Management:** Adopting and adhering to effective learning habits in this course will likely take up a great deal of time so plan your schedule accordingly. It is difficult to catch up once a student falls behind in required readings and exercises.
- Cell Phones:** The use of cell phones during class time is unprofessional and distracting to the instructor and fellow students. Texting and talking on a cell phone during class is therefore strictly prohibited. Cell phones must be either turned off or set to silent mode and placed out of sight.

- **Email:** Email is the preferred option to communicate with your instructor. **Email correspondence to your instructor must be sent from your NWP student email account.** Emails should be professionally formatted and include a subject, correct spelling and grammar, and a reference to course material and/or textbook pages, etc. Emails that do not adhere to this format may not be responded to.
- **Recording: Photographing and/or recording course content is strictly prohibited** unless advance permission is obtained from the instructor and any guest presenter(s). In the event permission is granted, such recordings may only be used for individual study, and may not be reproduced, transferred, distributed or displayed in any public manner.

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.

ASSIGNMENTS, QUIZZES AND EXAMS:

Students are expected to complete all assignments before the due dates. **Late/missed assignments are NOT accepted** and **will result in a grade of zero**. All exams will be written as scheduled. **No rewrite/rescheduled exams will be given**, and **all missed exams will result in a grade of zero** unless there is an excusable absence and prior arrangements have been made with the instructor. If there is a legitimate reason of absence, the weighting of the missed midterm exam will be added to the final exam weighting. Course materials (course outline, lecture notes, *MyLab* instructions, etc.) are available on your *D2L* course space (<https://myclass.gprc.ab.ca/d2l/home>).

- There are 12 assignments throughout the semester. The best 10/12 accounts for 20% of the final grade with each assignment worth 2% of the final grade, regardless of the length of the assignment.
- Term test 1 is scheduled for ***October 11***.
- Term test 2 is scheduled for ***November 8***.
- The final exam will be scheduled by the registrar's office during the December exam period.

COURSE SCHEDULE/TENTATIVE TIMELINE:

<u>Week Beginning</u>	<u>Topics</u>	<u>Required Reading</u>
Sep 3	D2L, MyLab, Introduction to Stats	Syllabus, Chapter 1
Sep 9	Data, Surveys and Sampling	Chapter 2, 3
Sep 16	Categorical Data	Chapter 4
Sep 23	Quantitative Data	Chapter 5
Sep 30	<i>Truth and Reconciliation - No Classes - September 30</i>	
	Scatterplots, Association, and Correlation	Chapter 6
Oct 7	Linear Regression	Chapter 7
	<i>Term Test 1 – Friday, October 11</i>	
		<i>Chapter 1-7</i>
Oct 14	Randomness and Probability	Chapter 8
Oct 21	Random Variables	Chapter 9
Oct 28	Probability Distribution	Chapter 9
Nov 4	Sampling Distributions	Chapter 10
	<i>Term Test 2 - Friday, November 8</i>	
		<i>Chapter 8-10</i>
<i>Nov 11</i>	<i>Fall Break - No Classes - November 11 - 15</i>	
Nov 18	Confidence Intervals for Proportions	Chapter 11
Nov 25	Testing Hypotheses About Proportions	Chapter 12
Dec 2	Statistical Inference for Means	Chapter 13
Dec 9	Chi-Square Tests	Chapter 16
	<i>Last day of Class – December 10</i>	
<i>Dec 12-19</i>	<i>Final Exam - TBA</i>	