NORTHWESTERN POLYTECHNIC

DEPARTMENT OF BUSINESS AND OFFICE ADMINISTRATION

COURSE OUTLINE – Fall 2022

BA2060 (A2): Statistics for Business – 3 (3-0-2) UT 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:	Dr. Chuntai Jin	**PHONE:**	(780) 593-2857
OFFICE:	C309	**E-MAIL:**	cjin@nwpolytech.ca
OFFICE HOURS:	Monday & Wednesday, 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.
- 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.

COURSE OBJECTIVES:

This course provides students an introduction to business statistical methods and their applications. Four main topics will be covered in this course: displaying and describing both categorial and quantitative data with numerical and graphical summaries; linear regression; probability distribution theories and statistical inference, which deals with testing hypotheses and drawing conclusions from sample data using scientific methods. Students will learn how to use statistical software such as StatCrunch to conduct statistical analysis. This course will prepare students to apply statistical analysis to real-world decision-making problems.

LEARNING OUTCOMES:

Upon completion of this course students should 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 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.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: (The following criteria may be changed to suite the particular course/instructor)

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

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.gprc.ab.ca/programs/grading-systems.html

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 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.

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, connect 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 7***. Term test 2 is scheduled for ***November 9***.
- The final exam will be scheduled by the registrar's office during the December exam period.

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week Beginning	**Topics**	**Required Reading**
Sep 1	D2L, MyLab, Introduction to Stats	Syllabus, Chapter 1
Sep 5	***Labour Day - No Class - Sep 5***	
	Data, Surveys and Sampling	Chapter 2, 3
Sep 12	Categorial Data	Chapter 4
Sep 19	Quantitative Data	Chapter 5
Sep 26	Scatterplots, Association, and Correlation	Chapter 6
	Truth and Reconciliation – Sep 30	
Oct 3	Linear Regression	Chapter 7
	Term Test 1 – Friday, October 7	***Chapter 1-7***
Oct 10	***Fall Break - No Classes - Oct 10-14***	
Oct 17	Randomness and Probability	Chapter 8
Oct 24	Random Variables and Probability Distribution	Chapter 9
Oct 31	Sampling Distributions	Chapter 10
Nov 7	***Term Test 2 - Wednesday, Nov 9***	***Chapter 8-10***
	Remembrance Day - No Class - Nov 11	
Nov 14	Confidence Intervals for Proportions	Chapter 11
Nov 21	Testing Hypotheses About Proportions	Chapter 12
Nov 28	Statistical Inference for Means	Chapter 13
Dec 5	Chi-Square Tests	Chapter 16
Dec 12	***Last Day of Class – Final Review***	