NORTHWESTERN POLYTECHNIC

DEPARTMENT OF BUSINESS AND OFFICE ADMINISTRATION

COURSE OUTLINE – Winter 2025

BA2060 (EC): 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.

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OFFICE HOURS: TBA

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).

Students are responsible for all fees associated with ProctorU, a live proctoring service for online exams. Fees are paid when you schedule your exams through ProctorU.

Pricing per exam is as follows:
60 minutes or less - $16 USD
61-120 minutes - $25 USD
121- 180 minutes - $31 USD

DELIVERY MODE(S):

Asynchronous (online) – This type of course will be delivered online through NWP's learning management system and *MyLab Statistics*. There are no set class times and students attend remotely and asynchronously.

This is a paced self-study course and is delivered entirely online using *MyClass (D2L)* and *MyLab Statistics.* For each chapter, required readings and PowerPoint lecture notes are available, along with student resources in *MyLab Statistics*. Relevant practice exercises for each chapter will be assigned as well as weekly assignments and quizzes to test your knowledge, understanding and application of the material throughout the course. You will be evaluated several times so you can assess how you are doing as you work through the material. The assignments, quizzes, and exams have specific due dates to help you finish the course on time.

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 choose the size of a sample to achieve a given level of accuracy
- 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.....15%

Quizzes.....15%

Midterm Exam.....30%

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

COURSE SCHEDULE/TENTATIVE TIMELINE:

Week	Date	Topics and Required Reading	Assignments Due Dates	Quizzes Due Dates
1	Jan 6-12	Ch1 An Introduction to Statistics; Ch2 Data	A1: Jan 11	Q1: Jan 12
2	Jan 13-19	Ch3 Surveys and Sampling	A2: Jan 18	Q2: Jan 19
3	Jan 20-26	Ch4 Categorical Data	A3: Jan 25	Q3: Jan 26
4	Jan 27-Feb 2	Ch5 Quantitative Data	A4: Feb 1	Q4: Feb 2
5	Feb 3-9	Ch6 Scatterplots, Association, and Correlation	A5: Feb 8	Q5: Feb 9
6	Feb 10-16	Ch7 Linear Regression	A6: Feb 15	Q6: Feb 16
7	***Feb 17-23***	***Midterm Exam (Chapters 1-7)***		
8	Feb 24-Mar 2	Ch8 Randomness and Probability	A7: Mar 1	Q7: Mar 2
9	Mar 3-9	Ch9 Random Variables and Probability Distribution	A8: Mar 8	Q8: Mar 9
10	Mar 10-16	Ch10 Sampling Distributions	A9: Mar 15	Q9: Mar 16
11	Mar 17-23	Ch11 Confidence Intervals for Proportions	A10: Mar 22	Q10: Mar 23
12	Mar 24-30	Ch12 Testing Hypotheses about Proportions	A11: Mar 29	Q11: Mar 30
13	Mar 31-Apr 6	Ch13 Confidence Intervals and Hypothesis Tests for Means	A12: Apr 5	Q12: Apr 6
14	Apr 7-11	Ch16 Inference for Counts: Chi-Square Tests	A13: Apr 10	Q13: Apr 11
	Apr 14 -23	***Final Exam (Chapters 8-13, 16)***		

STUDENT RESPONSIBILITIES:

- The expectation for this course is that students will read the chapter material and complete all assignments and quizzes. You should supplement your learning with the resources in *MyLab Statistics*.
- Adopting and adhering to effective learning habits in this course will likely take up a great deal of time. You should plan your schedule according to the course schedule.
- 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 with a subject line, 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.

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.

Additional Information: IMPORTANT Assignment, Quiz and Exam Policies:

Students are expected to finish all assignments and quizzes. **Late/missed assignments and quizzes 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 will be available on your *D2L* course space https://myclass.gprc.ab.ca/d2l/home.
- Assignments, quizzes and exams will be available on *MyLab Statistics*. https://mlm.pearson.com/northamerica/mystatlab.

StatCrunch

- StatCrunch is a web-based statistical software that allows students to collect data, perform statistical analysis, and generate reports. StatCrunch is integrated directly into *MyLab Statistics*.
- It is the student's responsibility to learn how to use StatCrunch. Turorial videos are available in *MyLab Statistics* or http://statcrunch.com.

Assignments

- There will be 13 assignments dispersed throughout the semester. The best 12/13 will account for 15% of the overall grade regardless of the length of the assignments.

Quizzes

- There are 13 quizzes dispersed throughout the semester. The best 12/13 will account for 15% of the overall grade.
- Each quiz consists of 20 multiple choice questions. Corrections for the quizzes will be made available to the students after the due date.
- Once you start the quiz, you must complete the entire quiz within the one-hour time limit. Logging off or losing the internet connection during the quiz will result in a grade based only on the proportion of the quiz that has been completed. It is imperative that the student has a reliable internet connection when attempting the quiz.

Exams

- There will be two exams in this course. The midterm exam will be written upon the completion of Chapter 7 and is scheduled for the week of ***February 17 – 23***. The final exam covers chapters 8 – 13 and 16 and it must be completed during the examination period of ***April 14 – 24***.
- Exams will be administered online (Proctoring software will be used).
- All *MyLab Statistics* resources will be hidden and unavailable from students during the exam period.
- Final grades are based on academic performance throughout the semester. There are no test re-writes, deadline extensions, or extra-credit assignments available to improve your grade. It is important to complete all assessments as scheduled and to the best of your abilities.

USING PROCTORU:

This course uses ProctorU Live for online exams. To utilize this service, you are required to complete the following steps:

- Create a ProctorU account by clicking the ProctorU link in the course.
- Download and install the Guardian Web Browser, Google Chrome, and the ProctorU extension.
- Schedule each exam at least 3 days (72 hours) in advance. If you miss this deadline, you cannot take the exam.
- Pay for the proctoring service. The fees are exclusively your responsibility and in no event shall be the responsibility of Northwestern Polytechnic.

For more detailed instructions click here, and for video instructions click here.

Before each exam, you must complete a room scan with your web camera, during which you will show your surroundings to a live proctor.

The invigilator will ask to view (but not collect or store) your student identification to verify your identity and will remotely access your computer to unlock the exam. When monitoring your actions via video streaming, the invigilator may possibly record your actions if they suspect academic integrity behavioural issues. You will be verbally notified if/when recording begins.

The collection of and access to the personal information listed above is permitted under subsection 33(c) of the *Freedom of Information and Protection of Privacy Act*, RSA 2000, c F-25, which states, "No personal information may be collected by or for a public body unless that information relates directly to and is necessary for an operating program or activity of the public body." In addition, subsection 39(4) states, "A public body may use personal information only to the extent necessary to enable the public body to carry out its purpose in a reasonable manner."

Records Retention: Any video records of you created by ProctorU will be kept by ProctorU for a maximum of 7 days in order to make a decision about any possible academic integrity infraction, after which time it shall

be permanently deleted. All other personal information collected and stored by ProctorU within your profile account will be permanently deleted if the account has not been used after one year.

Consent to Store Personal Information Outside Canada

ProctorU is an American company. An agreement is in place between ProctorU and Northwestern Polytechnic by which ProctorU will take reasonable steps to protect your personal information from unauthorized access and disclosure. Information about how ProctorU protects your privacy can be found in their Privacy Policy.

By using the ProctorU service via Northwestern Polytechnic, you consent to the storage of and access to your personal information outside of Canada.

This consent is in effect from the day you register with ProctorU and expires one year after completion of your exam.

Additional privacy and liability information regarding the use of ProctorU is available on the NWP website.