

DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2020

ST1510 (E3): Introduction to Applied Statistics I – 3 (3-0-2) 75 Hours for 15 weeks

INSTRUCTOR: Tom McLeister **PHONE:** 780-539-2961

OFFICE: J212 **E-MAIL:** tmcleister@gprc.ab.ca

OFFICE HOURS: MTR 10:00-11:20 F 11:30-12:50

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: Mathematics 30-1 or Mathematics 30-2 or equivalent

REQUIRED TEXT/RESOURCE MATERIALS:

Open (free) textbook at https://openstax.org/details/introductory-statistics

DELIVERY MODE(S): Lectures: WF 13:00-14:20 J204

Lab: R 14:30-16:20 A313

COURSE OBJECTIVES: This course provides an introduction to statistical methods and their applications. The main topics are: obtaining and summarizing data with graphs and numeric measures; probability theory; and statistical inference (drawing conclusions from sample data by carrying out a hypothesis test). This course also comes with a lab component; students will use EXCEL as a tool to further help their understanding in statistical analysis.

LEARNING OUTCOMES: To demonstrate the basic knowledge of descriptive statistics and its use. To perform elementary analysis of research data and to interpret the results of statistical tests. To demonstrate a conceptual knowledge of the concepts and principles involved. To select the appropriate statistical test. To be able to enter and analyze data using the computer program EXCEL.

TRANSFERABILITY: Please consult the Alberta Transfer Guide for more information (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 10%

Lab Reports 10%

Midterm 27% Friday February 28 Lab Exam 15% Thursday April 9

Final Exam 38% Cumulative, during exam period Wed Apr 15—Sat Apr 25

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	4-point	Percentage	Alpha	4-point	Percentage
Grade	Equivalent	Guidelines	Grade	Equivalent	Guidelines
A+	4.0	90-100	C+	2.3	67-69
A	4.0	85-89	С	2.0	63-66
A-	3.7	80-84	C-	1.7	60-62
B+	3.3	77-79	D+	1.3	55-59
В	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. Assignments are not accepted if handed in late. If the midterm is missed due to illness the weight will be put on the final (i.e. the final will be worth 65%). 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 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 College Calendar at http://www.gprc.ab.ca/programs/calendar/ or the College Policy on Student Misconduct: Plagiarism and Cheating at

https://www.gprc.ab.ca/about/administration/policies

Note: all Academic and Administrative policies are available at www.gprc.ab.ca/about/administration/policies/