



## DEPARTMENT OF SCIENCE

## COURSE OUTLINE – FALL 2019

**ST1510 (D2): Introduction to Applied Statistics I – 3 (3-0-2) 75 Hours for 15 weeks**

**INSTRUCTOR:** Tom McLeister

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**OFFICE:** J212

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**OFFICE HOURS:** MTRF 10:30-11:30

**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 B208  
Lab: T 14:30-16:20 A312

**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:** UA, UC\*, UL, AU\*, AF, CU, GMU, KUC\*, (From the GPRC catalog)

**\*Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the**

**transferability of this course to Alberta Colleges and Universities.** Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at <http://transferalberta.alberta.ca/transfer-alberta-search/#/audienceTypeStep>

**\*\* 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**

<b>EVALUATIONS:</b>	Assignments	10%	
	Lab Reports	10%	
	Midterm	27%	Friday October 25
	Lab Exam	15%	Tuesday December 3
	Final Exam	38%	Cumulative, during exam period Wed Dec 11—Fri Dec 20 (including evenings and Sat Dec 14)

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-**. This means **DO NOT GET LESS THAN “C-” IF YOU ARE PLANNING TO TRANSFER TO A UNIVERSITY.** And less than a C- may not be accepted as a prerequisite at the college and elsewhere.

#### GRADE CONVERSION GUIDELINES

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. 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/](http://www.gprc.ab.ca/about/administration/policies/)