

INTE 296

Discover Statistics

Section EC

Fall 2017

This syllabus is subject to change and any changes will be posted in the Announcements section of your eConcordia portal.

Disclaimer: In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.

About the Course

Instructor: Yogendra P. Chaubey

Instructor Contact Information: inte296@econcordia.com

Please allow for two business days for a response to e-mail inquiries. You may also post your question on the class discussion board, which serves as the main medium for communication for course-related issues.

Course Description

Why do we study statistics? This is a question that countless students have asked themselves over the course of their academic life. The answer lies all around us. Whether you are looking at election polls in the newspaper, watching a weather report on television, admiring colourful bar graphs in a company report, analyzing game reports for your favourite sports team, or filling out a survey in your favourite magazine, there is no denying the fact that the field of statistics has become increasingly prevalent in modern society. As consumers, it is not simply a matter of deciphering what is presented to us, but it is also important to be conscious about what has not been divulged. The goal of this course is to give learners the tools they need to conduct their own research, analyze and interpret data, and most importantly, to make informed decisions. This introductory-level course is designed for students with basic mathematical skills (high school mathematics is all that is needed).

This course content is divided into twenty lessons. Lessons 1 to 6 focus on descriptive statistics, including measures of central tendency, measures of variability, and techniques for presenting data. Upon completion of that section, students will be able to calculate summary statistics and create tables and charts to present and interpret data. Lessons 7 to 10 introduce the concept of probability, covering such topics as combinatorial analysis, probability distributions, conditional probabilities, and the normal distribution. Learners will answer probability questions using the elementary rules demonstrated to them in this section. Lessons 11 to 13 present statistical inference techniques using the normal distribution, confidence intervals, and hypothesis testing. Using multiple procedures (z-score, t-test, etc.), the student will be able to use sample data to make inferences about a given population under investigation. Lessons 14 to 17 build on the techniques learnt in the previous lessons, and apply them to multiple populations. This incorporates hypothesis testing for independent means, dependent means, as well as an introduction to the ANOVA technique. Lessons 18 to 20 are entirely devoted to linear correlation and regression analysis that deals with identifying linear relationships between variables and predicting outcomes based on those associations.

Course Material

All the material you need to complete this course is available online via the course website. **There is no additional textbook needed for this course.** The online material will include an electronic version of the course notes (which you can print), video tutorials, assignments, practice problems, discussion board, and other course material.

Course Website

The course website can be accessed at www.econcordia.com.

Your eConcordia account will be valid until the end of the term for which you are registered.

Your account will allow you to access the online course material, which includes videos, notes, discussion boards, all graded course components, useful links, readings and many more resources from the course website for the duration of the term.

Assessments

Graded Assessments:

Assignments (3)	12%
Quiz 1 (online) – Lessons 1-5	7%
Quiz 2 (online) – Lessons 6-9	7%
Quiz 3 (online) – Lessons 10-13	7%
Quiz 4 (online) – Lessons 14-20	7%
Final Exam	60%
Bonus Marks! Participation in Badge Activities	5%

Description of Graded Assessments

Assignments:

The assignments are **mastery assignments**. This means that if you hand in an assignment and it is not perfect, you have the opportunity to fix your errors and re-submit it, thereby renewing your chances at getting full marks. If you do not make any corrections, you will receive the original grade. You are allowed to re-submit your assignment once, as long as it conforms to the proper deadlines. This system allows most students to get perfect marks on their assignments, provided that they complete the work. The quicker you hand in your assignments (even before the due date), the quicker you get feedback about them and the more time you will have to make any necessary corrections.

Group work is accepted (for assignments only), but students are asked to keep the group membership to a maximum of four students. When working in a group, only one copy of the assignment need be submitted, but all group members, along with their student I.D. number, must be clearly indicated. It is also strongly suggested that you keep a copy of the assignment with you, especially if it was handed-in.

Quizzes:

There are four (4) online quizzes that will be issued during the semester. Each quiz will comprise of a series of multiple-choice, true-false, and/or short-answer questions. Questions will be randomized and automatically generated from a pool of possible questions so that each student will have a “unique” assessment. The quiz opens at 12:01am on the scheduled day and closes at 11:59pm. Quiz 1 will cover the content from Lessons 1 to 5, Quiz 2 will be based on content from Lessons 6 to 9, Quiz 3 will cover Lessons 10 to 13, and Quiz 4 will cover Lessons 14 to 20 .

Bonus Activities - Badges

To encourage you to visit the course website on a regular basis, to share with the community, and to practice as many different problems as possible (this is, after all, an applied course), this course makes use of a customized reward system. Whether it is through the completion of specialized activities found throughout the course website, by logging in on a regular basis, by posting a popular discussion board thread, or by finding one of the hidden “Bonus Buzzes”, you will have the opportunity to earn badges and points.

As you earn more badges and points, you will level up, earn new titles, and progress to the top of the class leaderboard! At the end of the semester, you will be awarded bonus marks based on the level that you achieved (up to a maximum of 5 bonus marks). This could be the difference between an A and an A+ (or an F and a D-).

Participation in these activities is optional. You will notice that the quizzes, assignments, and the final exam add up to 100% of your final grade and are not included in the badges and points. Therefore, this is truly a bonus activity for “extra credit”.

Here is the breakdown of the bonus marks you can earn in this course:

Level	Point Range	Title	Bonus Points
1	0-39	Statistics Stooge	0
2	40-89	Simple Sample	1
3	90-149	Probability Prude	1.5
4	150-219	Standard Deviant	2
5	220-299	Average Jill/Joe	2.5
6	300-399	Master/Mistress of the Mean	3
7	400-549	Regression Champion	3.5
8	550-699	Hypothesis Hero	4
9	700-899	Prince/Princess of Parametrics	4.5
10	900+	Queen/King of Statistics	5

Here are four activities that you can complete from the get-go to earn you those first few badges to take an early lead on your colleagues! For a complete list of the badges you can earn in this course, visit the My Badges page.

Introduction Activity: (Icebreaker Badge)

Since this is an online course, it is quite likely that you will not have a chance to formally meet your classmates during the semester. Likewise, unless you come in to see them during office hours, it is possible your professors will not get to meet you either! The Introduction Activity serves as an “icebreaker” with multiple benefits: it introduces you to your classmates and to your instructors, it allows you to experiment with the discussion board (and change your profile picture), and it earns you a participation badge!

In order to earn this bonus badge, you must log-in to the course website, go to the discussion board and select the thread called “Introduce Yourself”. Following that, click on “New Topic” (in the top-right horizontal menu) and type in your introduction. Do not use the “reply” feature unless you are replying to a classmates’ posting (you are welcome to do so!). In this introduction, **which must be at least 100 words**, you will answer the following questions:

1. What is your name? (Not much of an introduction without one!)
2. Why did you enrol in this course? (Was it part of your programme? For fun?)
3. What do you expect to get out of this course? What would you like to be able to do once you complete it? (To conduct research? To understand the numbers?)

Please see the Agenda for the deadline to submit your introduction in order to earn this participation badge (and associated points)!

Discussion Board Participation: (*Participation Stars*)

The class discussion board is a useful tool to obtain answers to common problems, as well as to seek aid from your fellow students. It is strongly recommended that you make a habit of verifying the board on a regular basis. Furthermore, you are encouraged to participate in the active discussion, either by offering your comments or by helping a fellow student with their queries. Students who are judged to be active on the discussion board or who have

made a significant contribution (e.g., started a popular thread) may be awarded a participation badge (and associated points). This participation activity is not associated to the introduction discussion board activity.

The rubric used for awarding the participation badge involves quality and quantity and is at the sole discretion of the instructional team. Only postings made by the last day of the semester will be considered for this activity.

Bonus Buzz Badges

Bonus Buzz is a little "scavenger-hunt" type of game in order to promote navigation of the website, and in doing so, allow you to discover the many resources that are available to you. We have embedded an image of our school mascot, "Buzz", in **five** (5) different locations.

If you find one of these icons, click on the accompanying button to be awarded one of the associated participation badges (and points). Please note, however, that the opportunity to earn these participation badges concludes on the last day of classes.

Math Review: (Math Maestro Badge)

For many students, this course is a requirement for their programme of study. Otherwise, they would have never registered for a university-level math course. In fact, in several cases, they have managed to avoid math since high school! We understand that this subject may cause added anxiety since you may not feel confident in your mathematical abilities. Although this course does require some math skills, they are very basic ones.

In order to give you a sense of the types of operations that you should be familiar with, we have prepared a small math quiz. Completing this quiz by the deadline (see the Agenda) will earn you a participation badge (and associated points). Based on your score, you can self-assess where you need some additional help and consult the resources that we have prepared for you in the Resource Centre.

Grades

In order to view your grades throughout the semester, click on the My Grades link in your eConcordia portal.

It is your responsibility to ensure your work has been received (to be verified as outlined in your assignment instructions) and to contact your TA via e-mail for clarification if you have any questions concerning your grades.

Your final letter grade for the course will be posted in your [myConcordia Portal](#) at the end of the term.

Grading Distribution

Letter Grade	% Grade		Letter Grade	% Grade	
A+	89 to	100	C	64 to	67.99
A	85 to	88.99	C-	60 to	63.99
A-	82 to	84.99	D+	57 to	59.99
B+	78 to	81.99	D	53 to	56.99
B	74 to	77.99	D-	50 to	52.99
B-	71 to	73.99	F	0 to	49.99
C+	68 to	70.99			

Policies:

Late Submissions and Extensions

- It is your responsibility to ensure that if you are unable to complete your work by the deadline or complete an assessment on the assigned date, you must request an extension beforehand from the instructor of the course.
- Extensions will be granted only to students who are able to provide a reasonable, verifiable, medical note before the deadline.
- In the case of emergencies, it is your responsibility to notify your instructor via e-mail or phone as soon as the issue arises in order to determine the course of action required for the matter at hand.
- If the assignment is late, you will be penalized 20% for each day past the deadline and will not be allowed to re-submit it.
- If the assignment is incomplete (i.e., you omit answering questions, you do not provide any evidence of having worked out the problem), you will not be permitted to resubmit it with corrections.
- Vacations and travel plans (work-related or otherwise) are not considered valid reasons for late submissions of or an inability to complete assignments, quizzes and exams.
- Please note that you are responsible for the version of the work you upload to the website. If you upload the incorrect version of your work to the website, you can resubmit the correct version prior to the deadline. If you fail to meet the deadline, the version of your work located on the website is the one that will be graded.

Important Information

Topic	Link
Academic Integrity	Academic Integrity
Academic Integrity Quiz	How to take the quiz
Access Centre for Students with Disabilities	ACSD
Concordia Library Citation & Style Guides	Citing - Help & How-to
Course Communication Tools	Communication
eConcordia Policies	Policies
Final Exams Information	Final Exams
Helpdesk/Support	FAQ
Refunds	Refunds
Technical Requirements	Technical Requirements
Tips for Studying Online	Studying Tips

INTE 296 - Discover Statistics Agenda Fall 2017

All deadlines indicated are on the due date listed by 11:59 p.m. unless otherwise indicated.

Week 1: September 5 - September 10	
	Review the course outline and navigate the course website
	Lesson 0: About this Course
	Lesson 1: Introduction
September 05	Discussion Board opens at 2 PM.
September 06	Attend the Virtual Orientation Session on Wednesday, September 6 th 7:00 pm. Virtual Classroom: http://connect.econcordia.com/inte296 (Virtual room will be available at least 15 minutes prior to the start of the session. Enter your name in the "Guest" field to enter the room. Do NOT log-in with your eConcordia account).
Week 2: September 11 - September 17	
	Lesson 2: Distributions
	Lesson 3: Measures of Central Tendency
September 15	Bonus! Post your Introduction on the Discussion Board: Friday, September 15 (Icebreaker Badge).
September 14	Assignment 1 posted on course website on Thursday, September 14
September 15	Bonus! Complete the Math Quiz: Friday, September 15 (Math Maestro Badge).
Week 3: September 18 - September 24	
	Lesson 4: Measures of Variability
	Lesson 5: Measures of Position
	Lesson 6: Presenting Data
September 18	DNE Date: Academic withdrawal deadline (with tuition refund)
September 18	Last day to add two-term and fall-term courses.
September 19	Virtual Office Hour on Tuesday, September 19 at 2:00pm Virtual Office: http://connect.econcordia.com/inte296
September 21	Deadline – Online Quiz 1: Thursday, September 21 (Lessons 1-5)
Week 4: September 25 - October 1	

	Lesson 7: Combinatorial Analysis
	Lesson 8: The Nature of Probability
	Lesson 9: Conditional Probabilities
September 26	Deadline – Submit Assignment 1: Tuesday, September 26 (Lessons 1-9)
Week 5: October 2 - October 8	
	Lesson 10: Probability Distributions
Week 6: October 9 - October 15	
October 09	Thanksgiving Day -- University closed
	Lesson 11: Estimates and Repeated Sampling
October 10	Virtual Office Hour on Tuesday, October 10 at 2:00pm Virtual Office: http://connect.econcordia.com/inte296
October 10	Deadline – Corrections of Assignment 1: Tuesday, October 10 (Lessons 1-9)
October 12	Assignment 2 posted on course website on Thursday, October 12
October 12	Deadline – Online Quiz 2: Thursday, October 12 (Lessons 6-9)
Week 7: October 16 - October 22	
	Lesson 12: Confidence Intervals and Coefficient
	Lesson 13: Hypothesis Testing
Week 8: October 23 - October 29	
	Lesson 14 - Dependent Means Hypothesis Testing
October 24	Deadline – Submit Assignment 2: Tuesday, October 24 (Lessons 10-13)
Week 9: October 30 - November 5	
	Lesson 15: Independent Means Hypothesis Testing
	Lesson 16: Ratio of Variance
October 31	Virtual Office Hour on Tuesday, October 31 at 2:00pm Virtual Office: http://connect.econcordia.com/inte296
November 2	Deadline – Online Quiz 3: Thursday, November 2 (Lessons 10-13)
November 2	Assignment 3 posted on course website on Thursday, November 2
Week 10: November 6 - November 12	
	Lesson 17: ANOVA
	Lesson 18: Linear Correlation
November 06	DISC Date: Academic withdrawal deadline from fall-term courses (without tuition refund).

November 07	Deadline – Corrections of Assignment 2: Tuesday, November 7 (Lessons 10-13)
Week 11: November 13 - November 19	
	Lesson 19: Linear Regression
	Lesson 20: Correlational Analysis
November 14	Deadline – Submit Assignment 3: Tuesday, November 14 (Lessons 14-20)
Week 12: November 20 - November 26	
November 21	Virtual Office Hour on Tuesday, November 21 at 2:00pm Virtual Office: http://connect.econcordia.com/inte296
November 23	Deadline – Online Quiz 4: Thursday, November 23 (Lessons 14-20)
November 21	Course Evaluation released
Week 13: November 27 - December 3	
November 28	Deadline – Corrections of Assignment 3: Tuesday, November 28 (Lessons 14-20)
November 27	Last day for instructor-scheduled tests and examinations
Week 14: December 4 – December 10	
December 04	Last day of classes
December 04	Deadline – Bonus Activities (Badges): Monday, December 4
December 05	Deadline to complete Course Evaluation
Examination Period: December 6 - December 22	
	Virtual Tutorial (TBD) Virtual Office: http://connect.econcordia.com/inte296
	Final Exam date, time and location is posted on your MyConcordia Portal