

ADM 2303X STATISTICS FOR MANAGEMENT I Spring-Summer 2016

Professor	<i>Dr. Suren Phansalker</i>
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Office Hours	Wednesday: 15:00 - 16:30. <i>Please write an e-mail by Monday for an appointment on the following Wednesday.</i>
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	In all e-mail communications, in the subject line, please include “ADM 2304” plus your section and student number and your signature/name at the end of body of your message.
Classes & DGD:	Classes: Tuesdays - 15:00 - 18:00 in SMD425 DGD: Wednesday - 16:30 - 18:00 in SMD224
Programme of Study:	B.Com. mandatory course: Additional info. available at: https://web30.uottafswa.ca/v3/SITS/timetable/Search.aspx In order to pass the course, students must pass the final exam.

Course Deliverable	Material Covered as per Course Schedule (below)	Due Date	Weight on Final Grade
Assignment 1	Weeks 1-2	May 29	7%
Assignment 2	Weeks 3-5	June 19	7%
Assignment 3	Weeks 6-8	July 3	7%
Assignment 4	Weeks 9-11	July 17	7%
Midterm exam	Weeks 1-5	June 18 (Saturday)	20%
Final exam	Entire Course	July 27 - Aug 6	52%

Course Description

The central learning objective is to understand how to apply statistics to management situations. In particular the course covers applications of descriptive statistics, probability, probability distributions, covariance, sampling distributions and quality control, using lectures and optional labs.

Course Learning Objectives

ADM 2303 is an introduction to the conceptual, analytical, and computational basis of business statistics, with an emphasis on management applications. This course (together with ADM 2304) provides the necessary background for many careers in business and government and for more advanced courses in marketing, finance, accounting, business simulation, multivariate statistics, and forecasting. Students will use the MINITAB statistical package, which will enable them to do detailed statistical analyses on the computer throughout their studies. The following articulates the alignment of this course with the seven learning goal objectives.

LG1 : Understand, Apply and Integrate Core Management Disciplines/

Business examples are used throughout the course to exercise probability and statistics concepts.

LG2 : Demonstrate Critical Thinking and Decision Making Skills/

The solution to probability and statistics questions provides direct practice in critical thinking. Further where applicable problems give students an opportunity to translate their solutions into recommendations, thereby providing exposure to the required considerations for decision making.

LG3 : Demonstrate Leadership, Interpersonal and Communications Skills/

Student's assignment submissions provide an opportunity to practice professionalism of their written communication skills.

LG4 : Apply high standards of Integrity, Ethics and Social Responsibility/

Several problems presented in this course highlight the ethical implications of their analysis (be it probability or data) informed.

LG6 : Pursue Self-Development and Exhibit a Commitment for Life-long Learning

This course equips students with tools for making decisions in the face of uncertainty, and alerts them to the many contexts in which such tools can save the day. It is hoped that these connections will inspire a keen vigilance to the relevance of these tools to everyday events.

LG7 : Provide Value to the Business Community in a chosen Area of Specialization/

By equipping students with essential fundamental tools for making decisions in the face of uncertainty, this course can equip students with valuable insights that would serve most prospective areas of specialization in the business community.

Methods Used to Evaluate Student Performance

Assignments, a midterm quiz and a final exam are used to evaluate performance. There are 4 assignments. A mark of 0 will be recorded for a missed assignment. Assignments have two parts.

- PartI has numerical answers, and marked online. It will be completed on MyStatLab website www.mystatlab.com. Registration instructions for mystatlab system will be covered in the first DGDs, and provided on BlackBoard Learn (**BBLearn**). Students are allowed to submit a multiple number of attempts up to the maximum *specified in the system*. The submission with the highest mark will count.
- PartII has full response answers that are marked by TAs after the due date. Students are allowed to submit *only one attempt*. Students must upload their part II assignments **in PDF format to BBLearn** by the due date. The front page of this assignment should identify the assignment (e.g., “Assignment#1 PartII”), your name, and student number. Do not forget to attach the academic **Integrity Statement** for each assignment. PartIIs *must be typed* (NOT handwritten) and submitted in PDF format. Submissions not following the above prescriptions will not be marked (earning a zero).

Students are reminded that supplemental course work, make-up or supplemental exams for the purposes of improving their grades are **not** permitted.

Labs/DGDs (Optional.)

Labs (aka, DGDs) are optional. The introductory Lab is essential unless you have taken the course before (even then it might be useful) since it introduces you to important e-tools (MyStatsLab, MINITAB, and etc) that are critical to the course.

	Introduction* Only on May 11 th (or 18 th)	Subsequent Regular Weekly DGD Sessions On May 18 th (or 25 th) onwards
Topics Covered	Computer resources: MyStatLab & Minitab	TA responds to students questions and solves “Homework” questions, which are on the same topics as “Assignment” questions.
Time/Location*		
Section X	Wed:16:30 - 18:00*	Wed:17:30 - 19:00 in SMD-224

*The location for the **Introductory DGD** orients students to the e-resources that are central to this course will be the computer labs in **DMS2130 & DMS2140**.

Study Approach

While students are welcome to *discuss* their assignment solutions with others, their submissions shall represent their **own** independent explication of their solution. If we discover evidence that a student's submitted solution is a copy of another solution, then charges of plagiarism will naturally follow (copying is plagiarism; see last pages of syllabus for more information).

In order to develop the ability to do questions at the level of the final exam, students can start with easier questions and progress to more complex questions using the following scheme.

	In class examples, the first time a topic is taught.	Homework exercises	Assignment Exercises	In class previous years final exam questions.
Level	Easy	Progressing from easy to more complex	Progressing to final exam level	Final exam
If you have difficulty ...	Ask the Professor during/after class.	Attend a lab/DGD and ask the TA.	Before due date, use the Forum. After due date: Prof will review in class, if necessary. Ask a TA during a lab/DGD.	Ask the Professor during/after class.

Textbook and software

Course text: Sharpe, DeVea, Vellman & Wright "Business Statistics" latest (second) edition, published by Pearson. Students can purchase the hard copy text or the online edition. Either option gives an access code to www.mystatlab.com which is necessary for all assignments.

A large proportion of the texts will be bundled with the **Student Edition of MINITAB for Windows**. This is, we believe, the best way to obtain the software economically. Minitab is also used in ADM 2304 and ADM 3307. While Minitab is available on the Faculty networks, and can be purchased separately, we have not recommended that the bookstore stock it as an individual item. You may also be able to download a demonstration copy that works for a LIMITED time from <http://www.minitab.com>.

In the exam, students may be required to interpret MiniTab output, but they will not be required to state how to use MiniTab commands. MiniTab output is very similar to that from a number of other major packages, including SPSS and SAS. Students have generally found that once they are comfortable with one such package, they can interpret the output from another with little difficulty.

The World Wide Web offers a selection of statistical software. *R* is free, open-source software that is becoming the standard for research in statistics from www.r-project.org. It is very powerful, and widely used, but **not so easy** to learn.

The professor is **STRONGLY** opposed to illegal copying of software or books. If you wish to economize, organize a group with one or more other students to purchase materials together and then share them (you will however require a valid key for MyStatsLab which cannot be shared).

Course Notes

BBLearn will be used to store materials that students may find helpful, including datasets, scripts, notes, presentations, solutions, past exams, etc. Learn what is there and how to access it as soon as possible. You can access BBLearn quite readily from the "Virtual Campus" link on the Telfer website.

Communications with the Professor and the Teaching Assistant

Take statistics problems first to the labs/DGDs. If the lab TA cannot provide a solution, consider attending your Prof's office hour, or contact your Professor by email with ***the statement of the problem and your attempt at a solution***. **Be aware that your Prof may refuse to answer your question if you do not properly** identify the problem, write out the problem statement, and outline your attempt at a solution: Profs answer emails from wherever they happen to be, and usually will not have access to the problem statement.

Your Professor prefers to be contacted by way of e-mail only as specified on the cover page. If you use email be sure to use the course code **ADM2303X** in the 'Sub' line. Use the accepted form of addressing the professor and end your e-mail with your name.

The procedure for mark correction differs between PartI and PartII of each Assignment

PartI of Each Assignment (marked online)

MyStatLab has been extensively tested and marks assigned by the online system for Part 1 of the Assignments **are final**. Answers that are approximately correct are not awarded any credit.

PartII of Each Assignment (marked by a TA)

- a. BEFORE asking for more marks, check solutions that will be posted on BlackBoard. An exception is addition errors, or items that have not been marked and should have been.
- b. Submit your request to the TA who marked your work using the personal message feature on Blackboard, including your first and last names, student number and section letter. Make sure you save a copy of the results of your request so you have evidence of revised marks in case of recording errors.
- c. If you do not get a reasonable response (or no response after 10 days) you contact your professor.

Computer Access and Software

All students in good standing have access to the Faculty PC network. This gives access to Minitab and other software. **There will be only one instruction session (Don't Miss the Labs that occur in the first two or three weeks) in use of computer systems in this course; you are presumed to already know how to use them.** Students are encouraged to familiarize themselves with the software as early as possible in the semester so they can use it to learn the subject matter more effectively.

The labs in this course provide instruction on how to use Minitab. Students who prefer to use spreadsheet software such as Excel should bear in mind:

- 1) Spreadsheet programs, while excellent tools for data entry and manipulation, have unfortunately some very nasty bugs in their statistical tools and in the ways in which they handle some data.
- 2) Spreadsheets do not produce a log file so that the steps taken in a spreadsheet to arrive at a result cannot be audited.
- 3) The business world uses spreadsheet programs for data entry and manipulation, but uses statistical software for statistical analysis.
- 4) The final exam may require the students to interpret Minitab output, but will not require students to state how to perform a Minitab analysis.
- 5) The analysis of so-called Big-Data is impractical on a spreadsheet platform.

Exams

The midterm exam will cover the materials from week 1 to week 5, whereas the final exam will be comprehensive, covering all topics including those for the midterm exam. It is *essential* to identify your Section on your exams.

Midterm exam will take place on Saturday, June 18, starting at 14:00 hrs and having a duration of 2.0 (two) hours in ART033.

Time and location of the final exam will be announced when it is known but it will be *anytime between July 27 and August 6*. The duration of the final exam will be 3.0 (**three**) hours.

Exam Regulations

UNIVERSITY REGULATIONS REQUIRE THAT YOU BE ABLE TO PRODUCE DOCUMENTS to ESTABLISH YOUR IDENTITY OR YOU WILL NOT BE PERMITTED TO WRITE ANY EXAMINATION.

It is *essential* to identify your Section on your final exam.

Textbooks are NOT permitted in the midterm nor final examinations. Students are permitted calculators approved by the professor, pens and pencils. ***A standard sheet of***

notes (containing relevant formulas) will be provided for the midterm, and a more comprehensive one will be provided for the final exam. Note that unlike in previous years, we will no longer allow students to bring a sheet of your own notes to the mid-term or final exam. You will be allowed access only to the one sheet provided as part of the exam booklet. Statistical tables, including Normal Distribution, t Distribution and Shewhart Factors, will be provided, and will be based on tables in the textbook.

During examinations calculators must be used in the basic mode (i.e., No programming allowed and the memory in the calculator must be blank).

If you write any exam, it **must** be counted. If you are ill, and cannot attend an examination, you **must** obtain an appropriate medical certificate from a medical doctor at the University Clinic **prior** to the exam that you will be missing. By Faculty policy, **holiday travel plans do NOT justify** missed exams. The Faculty arranges an alternate exam for approved absence from the final exam. While, in such circumstances, the arrangements and processing (e.g., approving doctors note etc) are undertaken by the undergraduate office, you are expected to inform your Professor of your absence in advance of the final exam.

COURSE SCHEDULE

Classes start May 3rd (Tuesday) and end July 19th (Tuesday). Study Day is: July 26. Canada Day occurs on July 1. A complete list of dates and deadlines can be obtained by clicking “Sessional dates” at <http://www.uottawa.ca/academic/info/index/english/index.html>

Week*	Topic	Chapter in textbook
#1 May 3	Course Organization Categorical data: Bar & Pie Charts. Contingency Tables. Probability: Simple rules of Probability. Joint, Marginal, Conditional Probability. Independence	1, 2, 4, 8.1-8.5,
#2 May 10	General multiplication and general addition rule. Probability Trees, Bayes' Result. Disjoint versus independent events.	8.6-8.9
#3 May 17	Random Variables. Empirical probability models. Expected Value & Variance, Coef. of Var'n, functions of Random Variables I (RV-I)	9.1-9.3
#4 May 24	Discrete Distributions: Binomial, Geometric & Poisson Distributions.	9.4-9.7
#5 May 31	Continuous Distributions: Uniform and Normal Distributions.	9.8-9.10, 9.12
#6 June 7	Normal Approx of Binomial. Exponential Distribution. Independence of RVs. Functions of RVs-II: Expected Value, & Variance. Inverse problem.	9.10-9.11, 6, 9.3
Saturday June 18 Midterm Quiz at 14:00 hrs in ART033		
#7 June 14	Continuous Data: Descriptive Statistics, Frequency Distribution, Histogram, Stem and Leaf Diagrams.	5
#8 June 21	Descriptive Statistics: 5-number summary, Box-plots, Line Charts, Scatter Diagrams, Correlation, covariance, Causality, mean, median, mode.	5, 6
#9 June 28	Descriptive Statistics: Standard Deviation, Variance, Percentiles, standardizing (sample statistics versus model parameters)	5
#10 July 5	Populations, Samples, Sampling Methods. Sampling distributions for proportions.	3, 10.1-10.3
#11 July 12	Sampling distribution of the mean. Central Limit Theorem	10.4-10.5 13.1-3 (T-dist'n)
#12 July 19	Quality Control. X-bar, R and S charts & Review	24
Exam date	To be determined during July 27 to August 6	

* Note date denoting each week corresponds to a Tuesday (beginning of the first class), which does correspond to an actual lecture date.

- **Beware of Academic Fraud**

Academic fraud is an act committed by a student to distort the marking of assignments, tests, examinations and other forms of academic evaluation. Academic fraud is neither accepted nor tolerated by the University. Anyone found guilty of academic fraud is liable to severe academic sanctions.

Here are a few examples of academic fraud:

- engaging in any form of plagiarism or cheating;
- presenting falsified research data;
- handing in an assignment that was not authored, in whole or in part, by the student;
- submitting the same assignment in more than one course, without the written consent of the professors concerned

In recent years, the development of the Internet has made it much easier to identify academic plagiarism. The tools available to your professors allow them to trace the exact origin of a text on the Web, using just a few words.

In cases where students are unsure whether they are at fault, it is their responsibility to consult the University's Web site at the following address, where you will find resources, tips and tools for writing papers and assignments:

[Academic Integrity Webpage](#)

Persons who have committed or attempted to commit (or have been accomplices to) academic fraud will be penalized. Here are some examples of the academic sanctions, which can be imposed:

- a grade of "F" for the assignment or course in question;
- an additional program requirement of between three and thirty credits;
- suspension or expulsion from the School.

Please be advised that professors have been formally advised to report every suspected case of academic fraud. In most cases of a first offence of academic fraud, the sanction applied to students who have been found guilty is an "F" for the course with an additional three credits added to their program requirements. Repeat offenders are normally expelled from the School of Management.

Finally, the Telfer School of Management asks that students sign and submit with their deliverables the Personal Ethics Agreement form. Two versions of this form exist: one for individual assignments, and one for group submissions. **Assignments will not be accepted or marked if this form is not submitted and signed by all authors of the work.** We hope that by making this personal commitment, all students will understand the importance the School places on maintaining the highest standards of academic integrity.

Personal Ethics Statement

Individual Assignment:

By signing this Statement, I am attesting to the fact that I have reviewed the entirety of my attached work and that I have applied all the appropriate rules of quotation and referencing in use at the Telfer School of Management at the University of Ottawa, as well as adhered to the fraud policies outlined in the Academic Regulations in the University's Undergraduate Studies Calendar. [Academic Fraud Webpage](#)

Signature

Date

Last Name (print), First Name (print)

Student Number

ACCESS SERVICE FOR STUDENTS WHO NEED ADAPTIVE MEASURES

Students who have a disability or functional limitation and who need adaptive measures (changes to the physical setting, arrangements for exams, learning strategies, etc.) to progress or participate fully in university life should contact Access Service right away:

- By visiting our office on the third floor of the Desmarais Building, Room 3172
- By filling out the [online registration form](#)
- By calling us phone at 613-562-5976

Access Service designs services and implements measures to break down barriers to learning for students with physical or mental health problems, visual impairments or blindness, hearing impairments or deafness, permanent or temporary disabilities, or learning disabilities.