

DS 1000 (Data Science Concepts) Section 001 Fall 2021/2022 Course Outline

1. Course information:

Instructor	Day/Time	Location	Contact	Office hours
Matt Davison	Mondays, Wednesdays and Fridays 8:30 am to 9:30 am	In-person at WSc 55 (Western Science)	use OWL messages	Mondays 4:00-5:00 pm at NCB 240D

Calendar description: Students will learn how to visualize and analyze continuous and categorical data from various domains, using modern data science tools. Concepts of distributions, sampling, estimation,

By the end of this course, a successful student will be able to:

Understand and correctly use foundational vocabulary associated with Statistics and Data Science.

Interpret, create and critically evaluate graphical and numerical data summaries.

Understand, assess, and critique the conclusions of data analyses.

Apply concepts learned in this course to future courses, careers, and everyday life.

Course schedule: see Pages 6 and 7.

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To communicate with the instructor		tool
	NOT be answered.	

You can expect a response to a message to the instructor within approximately 48 hours during the work week (during busy times, it may take a little longer).

weekends/holidays.

Students should check OWL (http://owl.uwo.ca) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

The Forum tool is enabled on the OWL website. Please use this Forum to post and respond to questions about course content (e.g., lecture, readings, etc). The Forum will be monitored on a regular basis and the instructor or TAs will interject with corrections or responses as necessary. As this is an open Forum, please be respectful of your peers, instructor(s), and TAs. Derogatory, discriminatory, or otherwise . Egregious

misbehaviour will be addressed using the Student Code of Conduct.

If students need assistance with the course OWL site, they can seek support on the OWL Help page. Alternatively, they can contact the Western Technology Services Helpdesk, which can be contacted by phone at 519-661-3800 or ext. 83800.

5. Course Materials

Required text: The Basic Practice of Statistics, 9th Ed, 2021, by D. S. Moore; W. I. Notz; M. I. Fligner

UWO bookstore listing:

https://bookstore.uwo.ca/textbook-search?campus=UWO&term=W2021A&courses%5B0%5D=002 UW/DATASQ1000A

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Laboratory tutorials: Python and Jupyter Notebook are the main tools for laboratory tutorials. Instructions on how to install them are available on OWL under Resources. If you need access to a computer for coursework, please contact the instructor as early as possible.

6. Methods of Evaluation

i) Assignments

- Assignments will be available on the course OWL site. However, you will not submit your solutions to OWL. Instead, <u>assignments must be submitted through Gradescope</u> (https://www.gradescope.com/), an on-line collaborative grading system. It is your responsibility to make sure that your assignment is successfully uploaded and legible. Submissions that cannot be read by the grader will receive a grade of zero.
- After receiving the grades from an assignment, students will have seven days to submit any regrade requests on that assignment. After this seven-day period, regrade reque0 g0 0 1 452.98 567.28 Tm

-	There will be a 3-hour in-person closed-book final exam and its time will be scheduled by the

The website for Registrarial Services is http://www.registrar.uwo.ca.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf,

the centrally administered e-mail account provided to students will be considered th official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at his/her official university address is attended to in a timely manner.

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a self-culty. For

absences:

https://www.westerncalendar.uwo.ca/PolicyPages.cfm?PolicyCategoryID=1&command=showCategory&SelectedCalendar=Live&ArchiveID=

Participants in this course are not permitted to record lectures and/or labs, except where recording is an approved accommodation, and the participant has the prior written permission of the instructor.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site: http://www.uwo.ca/univsec/pdf/academic policies/appeals/scholastic discipline undergrad.pdf.

Professionalism & Privacy	
Western students are expected to follow the Rudent Collect and Id.	a
(https://www.uwo.ca/univsec/pdf/board/code.pdf). Additionally, the following expectations and professional conduct apply to this course:	
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6	Oct 11-	5	- Regressiorlines	- Leastsquaresregressionfit
	15	Sections:	- Leastsquaresegressionline	- Interpretation resulttable
		5.1,5.7,	- Examplesof softwareregression	·
		5.2,5.3,	output	
		5.4,5.8	- Cautionaboutcorrelationand	
			regression	
			- Associationdoesnotimply	
			causation	
7	Oct 18-	6	- Two-way contingencytables	- From raw datato a two-way table
	22	Sections:	 Relativerisk, oddsratio 	- Computing conditional and
		6.1,6.2,	- Simpson's Paradox	marginalproportions
		6.3		- Relativerisk, oddsratio
				- Mosaicplot
				Assig. 2 due Oct 20
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8 Oct 25- 8 - Populationversussample 29 Sections: - Bad samples

8.1 to - Simplerandomsample 8.7 - Stratifiedrandomsample

- Why canwe trustrandom

samples?

- Cautionsaboutsamplesurveys