

**University of Waterloo**  
**Global Business and Digital Arts**  
**GBDA 205**  
**Quantitative Methods**  
**Winter 2015**  
**Mondays and Wednesdays, CPH 1346**  
**Section 001: 5:30-7:20 pm**  
**Section 002: 7:30-9:20 pm**

**Instructor and T.A. Information**

Instructor: Owen Gallupe  
Office: PAS 2055  
Office Phone: ext. 33361  
Office Hours: Tuesdays 2:30 to 3:30  
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T.A.	TBA
Email	T.A. 1 Email
Office	T.A. 1 Office
Office Hours	T.A. 1 Hours

**Course Description**

This course is designed to teach students how to competently perform the most common statistical techniques. The approach taken is not heavy on the math behind statistics, but rather aims to ensure that students become effective data analysts. Students will be expected to learn how to recognise and match the correct test to a given research question. Assumptions of statistical tests and correct interpretation will be stressed in this course.

In almost every class, students will be expected to work through data problems in groups using the stats package SPSS. The course will start with a basic overview of important statistical concepts and progress through descriptive and bivariate statistics and end with various forms of multivariate analysis.

Students are expected to attend all scheduled classes during the term in order to keep up with the course material and to have done the readings in advance of class so that they are prepared for the group work that is a major part of the course. Students are also expected to practice the techniques taught in class on their own. This is critical to success in this course.

There are online resources for the textbook that the readings are drawn from that can be found at <http://www.sagepub.com/field4e/main.htm>. These include videos, multiple choice questions, and the data files used by Field in the text book. While doing the readings, it is strongly recommended that students work through the statistical techniques that Field discusses in the textbook using the data found on the textbook website.

## Software

The statistics package SPSS is used heavily in this course. SPSS is available in some public computer labs on campus (see list below). Many students in previous versions of this course have found it useful to obtain their own copy of SPSS as it is imperative to practice the material that is learned in class. You can get a six month rental for either \$51.06 (IBM SPSS Statistics Base GradPack 22) or \$69.55 (IBM SPSS Statistics Standard GradPack 22). The Base version handles most things we will cover in this class though some techniques that will be addressed near the end of the course are beyond its capabilities. The Standard version should handle everything. To purchase and download SPSS, go to this address and follow the links: [http://ist.uwaterloo.ca/admin/available\\_software.html](http://ist.uwaterloo.ca/admin/available_software.html)

Computer labs with SPSS:

PAS 1237 (8:30-4:30 weekdays except if booked for a class)

PAS 1098 (open all the time)

## Required Text

- Courseware available at the bookstore. It is also on reserve at the library.

## Course Requirements and Assessment

This course contains three evaluation points: two midterm exams (30% of your final grade each) and a final exam (40%). For the most part, midterm 2 and the final exam are not cumulative in that they focus on the material covered after the prior midterm. However, the material in this course builds on what came previously and in that way students must still know the concepts, techniques, etc. from earlier in the course to be successful on the second midterm and final exam. Unless noted by the instructor in advance, all exams will be mostly practical in nature. That is, students will be provided a data set in the exam period and expected to answer questions by demonstrating their ability to work through the problems using SPSS. This makes practicing on your own time imperative to your success in this course.

All components are required for course completion.

Assessment	Date of Evaluation	Weighting
Midterm 1	Feb 4	30%
Midterm 2	Mar 9	30%
Final exam	TBD – Exam period is April 10 to 25	40%
Total		100%

## Course Outline

Week	Class #	Date	Topic	Reading (courseware page #)
1	1	Jan 5	Introduction	
	2	Jan 7	Terms and concepts	3-20
2	3	Jan 12	Intro to SPSS	21-46
	4	Jan 14	Recoding	47-54
3	5	Jan 19	Distributions and properties	55-65
	6	Jan 21	Statistical models	66-75
4	7	Jan 26	Statistical models2	75-95
	8	Jan 28	Graphs	96-139
5		Feb 2	Review	
		Feb 4	<b>Midterm 1</b>	
6	9	Feb 9	Assumptions	140-174
	10	Feb 11	Comparing two means	175-205
7		Feb 16	<i>Reading week – no class</i>	
		Feb 18	<i>Reading week – no class</i>	
8	11	Feb 23	Comparing several means	206-216
	12	Feb 25	Chi-square	217-231
9	13	Mar 2	Correlation	232-251
		Mar 4	Review	
10		Mar 9	<b>Midterm 2</b>	
	14	Mar 11	Regression	252-269, 288-296
11	15	Mar 16	Regression diagnostics	269-288, 296-308
	16	Mar 18	Dummies	308-318
12	17	Mar 23	Logistic regression	319-355
	18	Mar 25	Exploratory factor analysis	356-366
13	19	Mar 30	Poisson and negative binomial models	367-376
		Apr 1	Review	

### Policy on Missed Tests and Examinations

Students are expected to write all scheduled in-class tests and the final examination at the set dates and times. There are no make-ups for the midterm exams. Missing a midterm will result in a final exam weighted at 70% of the overall grade. The weighting from a missed midterm exam will NOT be made up on another midterm exam. Students must write at least two of the three exams including the final exam. If the student cannot write at least one midterm exam, an essay or project must be completed instead at the instructor's discretion. Students who miss an exam must provide a valid, fully documented excuse (e.g., a medical form indicating a serious illness and period of incapacitation signed by a physician). Otherwise, a grade of zero will be recorded for the missed test. If a test is missed due to illness or other reason, the student must inform the instructor at the earliest opportunity. A make-up final examination will only be permitted in rare emergency cases (such as a serious unavoidable medical problem), and only if the student provides full supporting documentation. Students should make every reasonable effort to write the midterm and final examinations at the regularly scheduled dates and times.

## **Electronic Device Policy**

Within a class of this size, all cell phones, pagers, and other forms of communication must be silenced during the class period in order to minimize the disturbance for other students. The use of laptops or other devices to take notes during class is acceptable.

## **Attendance Policy**

There is no penalty for non-attendance. However, students are STRONGLY advised to attend all lectures and to make use of the work time allotted to the end of every class.

## **Academic Integrity**

In order to maintain a culture of academic integrity, members of the University of Waterloo community are expected to promote honesty, trust, fairness, respect and responsibility. See the [UWaterloo Academic Integrity Webpage \(https://uwaterloo.ca/academic-integrity/\)](https://uwaterloo.ca/academic-integrity/) and the [Arts Academic Integrity Office Webpage \(http://arts.uwaterloo.ca/current-undergraduates/academic-responsibility\)](http://arts.uwaterloo.ca/current-undergraduates/academic-responsibility) for more information.

## **Grievance**

A student who believes that a decision affecting some aspect of his/her university life has been unfair or unreasonable may have grounds for initiating a grievance. Read [Policy 70, Student Petitions and Grievances, Section 4 \(https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70\)](https://uwaterloo.ca/secretariat/policies-procedures-guidelines/policy-70). When in doubt please be certain to contact the department's administrative assistant who will provide further assistance.

## **Discipline**

A student is expected to know what constitutes academic integrity to avoid committing academic offenses and to take responsibility for his/her actions. A student who is unsure whether an action constitutes an offense, or who needs help in learning how to avoid offenses (e.g., plagiarism, cheating) or about "rules" for group work/collaboration should seek guidance from the course professor, academic advisor, or the undergraduate associate dean. For information on categories of offenses and types of penalties, students should refer to [Policy 71, Student Discipline \(http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm\)](http://www.adm.uwaterloo.ca/infosec/Policies/policy71.htm). For typical penalties check [Guidelines for the Assessment of Penalties \(http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm\)](http://www.adm.uwaterloo.ca/infosec/guidelines/penaltyguidelines.htm).

## **Appeals**

A decision made or penalty imposed under Policy 70, Student Petitions and Grievances (other than a petition) or Policy 71, Student Discipline may be appealed if there is a ground. A student who believes he/she has a ground for an appeal should refer to [Policy 72, Student Appeals \(http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm\)](http://www.adm.uwaterloo.ca/infosec/Policies/policy72.htm).

## **Note for Students with Disabilities**

The AccessAbility Services, located in Needles Hall, Room 1132, collaborates with all academic departments to arrange appropriate accommodations for students with disabilities without compromising the academic integrity of the curriculum. If you require academic accommodations to

lessen the impact of your disability, please register with the OPD at the beginning of each academic term.