**Course Description:**
In this course, we will learn about key statistical techniques that are commonly used in social science: logistic regression models and multilevel models including models for longitudinal and panel data. We will discuss when and how to use each of the techniques, the assumptions that we make when using them and how to interpret the results. We will also evaluate and critique several journal articles that used one or more of the statistical techniques above.

The course includes an applied component in which we will use the statistical software ‘stata’ to analyze survey data. Bring your own laptop to class so that we can work on ‘stata’ in class. To download stata on your computer, click on the following link and follow the instructions [http://carleton.ca/its/all-services/computers/site-licensed-software/stata/](http://carleton.ca/its/all-services/computers/site-licensed-software/stata/). If you don’t have a laptop (or don’t wish to bring one to class), you can borrow a laptop from the Computer Services Desk on level four of the library before class is set to start. Please note that you will be asked to complete a registration form.

In this course, you will be completing two assignments and two critiques of selected journal articles as well as an empirical research paper. We will be working on the various components of the research paper throughout the term. The research paper would require selecting a social science topic, conducting brief literature review, identifying key research question(s) and hypotheses, choosing a suitable (social science) dataset, running statistical analyses using at least one of the statistical techniques covered in this course and writing a 15 double-spaced page paper (excluding references, tables and figures). The paper would include the following sections: introduction, lecture review, hypotheses, data and methods, results, discussion and conclusions. I encourage you to work on a paper that you can submit for a conference (e.g.
Congress of the Humanities and Social Sciences) and/or be part of your thesis/dissertation. You are also expected to give a 15-minute presentation about your paper.

Course Objectives:
Following the completion of this course, it is expected that you would (be able to):
• Know when to use each of the various logistic regression models and multilevel models
• Use stata to analyze survey data
• Run binary logistic, multinomial logistic and ordered logistic regression models and interpret the results
• Assess and critique journal articles that use logistic regression models
• Run random intercept multilevel models, random coefficient multilevel models and models for longitudinal and panel data and interpret the results
• Assess and critique journal articles using multilevel models
• Write an empirical research paper using one the statistical techniques covered in class
• Give a conference-like presentation based on your empirical research

Textbooks and Readings:
• Additional required readings available through the Carleton library

Course Requirements & Methods of Evaluation:
It is important that you attend every class, do the stata lab exercises, study the lecture notes and the textbook chapters, ask questions in class and work on the assignments and the final paper early and frequently. The grade for this course is distributed as follows:
• Class participation & lab exercises 10%
• Assignments 30%
• Critique of journal articles 15%
• Presentation 10%
• Take-home Exam (Final paper) 35%

Final Letter Grades
In accordance with the teaching regulations of Carleton University, the letter grades assigned in this course will have the following percentage equivalents:
A+ = 90-100  B+ = 77-79  C+ = 67-69  D+ = 57-59
A = 85-89    B = 73-76  C = 63-66  D = 53-56
A - = 80-84  B - = 70-72  C - = 60-62  D - = 50-52
F = Below 50
WDN = Withdrawn from the course
DEF = Deferred  FND = Failed, no Deferred
a) **Class participation & lab exercises (10%)**
Class attendance and participation are critical for understanding statistical analyses. The class includes a ‘stata’ component in which you are expected to execute a number of commands and interpret the output.

b) **Assignments (30%)**
There are two assignment in this course. The assignments will be available on cuLearn about two weeks before the due date. The assignments will include: (a) problem sets involving calculations and interpretations of statistical measures; (b) data analyses and interpretation of statistical output using an assigned dataset; and (c) parts of your research paper (e.g. topic, literature review, research question and data in assignment # 1; statistical analyses, tables and interpretation of results in assignment # 2).
A hard copy of the **typed** assignment is due in class. If you cannot make it to class on the assignment due date, you should leave a copy of your assignment in the sociology drop box located at the 7th floor of the Loeb Building (B750 Loeb). Please write your name, the course code and the name of the professor (Dr. Rania Tfaily) on the cover page. Assignments not handed in on time are penalized at a rate of 5% per day in the absence of a valid and **documented** excuse.

c) **Critique of journal articles (15%)**
We will evaluate and critique several journal articles that use statistical techniques discussed in this course. We will do this assessment twice during the term. Each time you are expected to submit a critique of the assigned journal articles (about two to three double-spaced pages per journal article). The critique should include a summary of each article along with a critical assessment with special focus on the data and methods, results, discussion and conclusions (e.g. whether the paper adequately addressed the research question(s); whether the conclusions are in line with the evidence presented in the paper; whether the author(s) failed to examine alternative explanations; whether the author(s) acknowledged (if applicable) the limitations of the data and statistical techniques used ... etc.).

d) **Presentation (10%)**
You are expected to give a conference-like presentation based on your paper. The presentation should be about 15 minutes long and include an overview of your topic with special focus on situating your research within the literature, data and methods as well as your analyses, findings and conclusions.

e) **Take-home exam (Final paper) (35%)**
You will be working on an empirical research paper throughout the term using one of the statistical techniques discussed in class. The first step involves selecting a topic. You will review and identify gaps in the literature, come up with an interesting and doable research question(s) and select a suitable dataset. It is important that your project is original in the sense that you are not merely replicating someone else’s work, and that you select an appropriate dataset. The first step includes submitting an introduction, brief literature review, key research
question(s), hypotheses, and an overview of the dataset to be used in the project. This will form part of assignment # 1.

The second step includes discussion of the methods section (e.g. what variables and statistical techniques you are using, rationale for each ...etc.) as well as running various models, producing relevant tables/ figures. This will form part of assignment # 2.

Finally, you are expected to revise the different sections and submit a final paper. The final paper is expected to be about 15 double-spaced pages (excluding tables, figures and references). It should include the following sections: introduction and research question(s), literature review, hypotheses, data and methods, results, discussion, conclusions, references, and figures and tables.

The final paper is due on April 27th. Please deposit a hard copy in the Sociology drop box (B750 Loeb Building; 7th floor). Please write your name, the course code (SOCI 5104) and the name of the professor on the cover page (Dr. Rania Tfaily). Papers not handed in on time are penalized at a rate of 5% per day in the absence of a valid and documented excuse. If you require an extension, please submit a medical note and/or a written documentation.

Academic Regulations, Accommodations, Plagiarism:
University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university’s website, here: http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Academic Accommodations for Students with Disabilities
The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). *The deadline for contacting the Paul Menton Centre regarding accommodation for final exams for the Winter 2019 (April) exam period is March 15, 2019.

For Religious Obligations:
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: www.carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf
For Pregnancy:
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: [www.carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf](http://www.carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf)

For Survivors of Sexual Violence
As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: [www.carleton.ca/sexual-violence-support](http://www.carleton.ca/sexual-violence-support)

Accommodation for Student Activities
Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. [https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf](https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf)

Plagiarism
Plagiarism is the passing off of someone else's work as your own and is a serious academic offence. For the details of what constitutes plagiarism, the potential penalties and the procedures refer to the section on Instructional Offences in the Undergraduate Calendar. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy (See [https://carleton.ca/registrar/academic-integrity/](https://carleton.ca/registrar/academic-integrity/)). The Policy is strictly enforced and is binding on all students. Academic dishonesty in any form will not be tolerated. Students who infringe the Policy may be subject to one of several penalties.

What are the Penalties for Plagiarism?
A student found to have plagiarized an assignment may be subject to one of several penalties including but not limited to: a grade of zero, a failure or a reduced grade for the piece of academic work; reduction of final grade in the course; completion of a remediation process; resubmission of academic work; withdrawal from course(s); suspension from a program of study; a letter of reprimand.

What are the Procedures?
All allegations of plagiarism are reported to the faculty of Dean of FASS and Management. Documentation is prepared by instructors and departmental chairs. The Dean writes to the student and the University Ombudsperson about the alleged plagiarism. The Dean reviews the allegation. If it is not resolved at this level then it is referred to a tribunal appointed by the Senate.
**Assistance for Students:**
Academic and Career Development Services: [http://carleton.ca/sacds/](http://carleton.ca/sacds/)
Writing Services: [http://www.carleton.ca/csas/writing-services/](http://www.carleton.ca/csas/writing-services/)
Peer Assisted Study Sessions (PASS): [https://carleton.ca/csas/group-support/pass/](https://carleton.ca/csas/group-support/pass/)

**Important Information:**
- Student or professor materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).
- Audio and/or video recording of the lecture/class is not permitted.
- **Internet/ social media websites should be not used for the duration of the class.**
- All phones, music players and similar devices must be switched off and kept out of sight for the duration of the class.
- It is the students’ responsibility to know the content of this syllabus.
- This syllabus is subject to minor modifications throughout the term at the discretion of the instructor.
- It is the students’ responsibility to check cuLearn regularly for announcements and course related materials.
- Students must always retain a hard copy of all work that is submitted.
- Standing in a course is determined by the course instructor subject to the approval of the Faculty Dean. This means that grades submitted by the instructor may be subject to revision. No grades are final until they have been approved by the Dean.
- Carleton University is committed to protecting the privacy of those who study or work here (currently and formerly). To that end, Carleton’s Privacy Office seeks to encourage the implementation of the privacy provisions of Ontario’s *Freedom of Information and Protection of Privacy Act* (FIPPA) within the university.
- In accordance with FIPPA, please ensure all communication with staff/faculty is via your Carleton email account. To get your Carleton Email you will need to activate your MyCarletonOne account through Carleton Central. Once you have activated your MyCarletonOne account, log into the MyCarleton Portal.
- Please note that you will be able to link your MyCarletonOne account to other non-MyCarletonOne accounts and receive emails from us. However, for us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid MyCarletonOne address. Therefore, it would be easier to respond to your inquiries if you would send all email from your connect account. If you do not have or have yet to activate this account, you may wish to do so by visiting [https://students.carleton.ca/](https://students.carleton.ca/)
COURSE OUTLINE AND READING LIST

January 8th – Introduction: Review of descriptive statistics, multiple regression and inferential Statistics

January 15th – Introduction to Logistic Regression & Stata

January 22nd – Overview of Logistic Regression

January 29th – Binary Logistic Regression

February 5th – Ordinal Logistic Regression

February 12th – Multinomial Logistic Regression
Assignment 1 due

February 19th – Winter Break, no Class

February 26th – Missing Data & Critique of Journal Articles
Critique of journal articles due
List of journal articles to be posted on cuLearn

March 5th – Introduction to Multilevel Models & Random Intercept Multilevel Models
Robson, Karen and David Pevalin. 2016. Multilevel Modeling in Plain Language, chapters 1 & 2

March 12th – Random Coefficient Multilevel Models
Robson, Karen and David Pevalin. 2016. Multilevel Modeling in Plain Language, chapter 3

March 19th – Random Coefficient Multilevel Models (cont’d)
Robson, Karen and David Pevalin. 2016. Multilevel Modeling in Plain Language, chapter 3

March 26th – Models for Longitudinal and Panel Data
Assignment 2 due
April 2nd – Communicating Results & Critique of Journal Articles
Robson, Karen and David Pevalin. 2016. Multilevel Modeling in Plain Language, chapter 4
Critique of journal articles due
List of journal articles to be posted on cuLearn

April 9th – Presentations

Take-home exam (Final paper) due on April 27th