

**Faculty of Science Course Syllabus**  
**Department of Economics**  
**Economics 3339**  
**Intro Econometrics II**  
**Section 01**  
**CRN 20863**  
**Winter 2018**

Instructor: Professor Kuan Xu

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Office Hours: Mondays and Wednesdays, 3:00pm–4:30pm or by appointment

Lectures: Mondays and Wednesdays, 11:35am–12:55pm, Studley LSC-COMMON AREA C208

Tutorials: Fridays 11:35am-12:55pm, Studley MCCAIN ARTS&SS 2019

**Course Description:**

This course is an extension of ECON 3338.03 and covers a range of econometric methods that are used in economic research. The topics for this course include: panel data, binary-choice models, instrumental variables, time series and forecasting.

**Prerequisites:**

ECON 3338.03

NOTES: All Economics courses, unless stated otherwise, have a minimum grade requirement of C for their prerequisite courses.

**Course Objectives/Learning Outcomes**

The students will acquire knowledge of various econometric techniques designed to ensure reliable quantitative analysis of economic questions and data. The students will be able to explain how each method works, when it should be used, its statistical foundations and assumptions, advantages and limitations, and how to check its validity. They will gain experience working with real-world data, building econometric models, and performing hypothesis testing and forecasting.

## Course Materials:

- **Textbook:** James H. Stock and Mark W. Watson, Introduction to Econometrics, Updated Third Edition
- **Slides:** Posted on Brightspace
- **On-line Exercises/Assignments:** Posted on Brightspace
- **Other Materials:** Posted on Brightspace

## Software Packages:

At Dalhousie University, students have direct access to a variety of statistics and econometrics software packages (commercial and open source software packages).

In the Department of Economics Computer Labs (Basement of 6214 University Ave.), students have direct access to the commercial software packages for mathematics such as **Maple** and for econometrics and statistics such as **MINITAB**, **SAS**, **SPSS**, and **Stata**. Students also have direct access to some open-source software packages for econometrics, and statistics such as **Gretl**, **R**, and **RStudio**.

Students can download and install these open-source software packages in their own computers. One such open-source software package for econometrics is **Gretl**

(see <http://gretl.sourceforge.net/>).

It is completely free and user-friendly. It also has a link to a more advanced open-source software package for statistics/econometrics **R**

(see <http://www.r-project.org/>).

It is also completely free and suitable for doing various kinds of statistics work and data analysis. **RStudio** is an IDE (integrated development environment), a “shell”, for **R**. One can download and install **RStudio** (see <https://www.rstudio.com/>) after **R** has been installed. **RStudio** is also free for personal use. Another open-source software package for symbolic mathematics is **xwMaxima**

(see <http://wxmaxima.sourceforge.net/>).

It is similar to its commercial counterparts such as **Mathematica** and **Maple** but it is free. Students are encouraged to learn more than one software packages for their future research and professional careers.

### Course Assessment:

Due Date	Location	Description	Grade
Jan. 21, 2019	Classroom	Assignment 1	5%
Feb. 04, 2019	Classroom	Assignment 2	5%
Feb. 11, 2019	Classroom	Midterm Exam	30%
Mar. 04, 2019	Classroom	Assignment 3	5%
Mar. 25, 2019	Classroom	Assignment 4	5%
TBA	TBA	Final Exam	50%

1. Each assignment will be distributed a few days prior to the due date.
2. Please submit each assignment at the beginning of the class on its due date. No late assignments are acceptable.
3. Please work on each assignment independently. Plagiarism is not tolerated.
4. If a student misses an assignment or the midterm exam for a justifiable reason (e.g. maximum two Student Declarations of Absence per term and Doctor's notes), the marks of missed work will be automatically added to the final exam. No alternative assignments/make-up midterm exam will be given.

### Grading Scheme:

A+	A	A-	B+	B	B-	C+	C	C-	D	F
90-100	85-89	80-84	77-79	73-76	70-72	65-69	60-64	55-59	50-54	<50

### Course Contents:

1. Review of basic probability and statistics (Ch. 2-3)
2. Review of multivariate linear regression: estimation methods, assumptions, hypothesis testing, model selection (Ch. 4-8, 17)
3. Panel data: fixed and random effects (Ch. 10)
4. Binary dependent variables: linear probability model, logit, probit (Ch. 11)
5. Instrumental variables (Ch. 12)
6. Time series analysis (Ch. 14)
7. Introduction to big data and machine learning (optional)

# University Policies and Statements

This course is governed by the academic rules and regulations set forth in the University Calendar and by Senate.

## **Academic Integrity:**

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The Center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity. See [https://www.dal.ca/dept/university\\_secretariat/academic-integrity.html](https://www.dal.ca/dept/university_secretariat/academic-integrity.html)

## **Accessibility:**

The Advising and Access Services Centre is Dalhousie's centre of expertise for student accessibility and accommodation. The advising team works with students who request accommodation as a result of a disability, religious obligation, or any barrier related to any other characteristic protected under Human Rights legislation (Canada and Nova Scotia). See [https://www.dal.ca/campus\\_life/academic-support/accessibility.html](https://www.dal.ca/campus_life/academic-support/accessibility.html)

## **Code of Student Conduct:**

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution. See [https://www.dal.ca/dept/university\\_secretariat/policies/student-life/code-of-student-conduct.html](https://www.dal.ca/dept/university_secretariat/policies/student-life/code-of-student-conduct.html)

## **Diversity and Inclusion—Culture of Respect:**

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness. See <http://www.dal.ca/cultureofrespect.html>

## **Recognition of Mi'kmaq Territory:**

Dalhousie University would like to acknowledge that the University is on Traditional Mi'kmaq

Territory. The Elders in Residence program provides students with access to First Nations elders for guidance, counsel and support. Visit or e-mail the Indigenous Student Centre (1321 Edward St) (elders@dal.ca). See [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

### **Important Dates in the Academic Year (including add/drop dates):**

See [https://www.dal.ca/academics/important\\_dates.html](https://www.dal.ca/academics/important_dates.html)

### **University Grading Practices:**

See [https://www.dal.ca/dept/university\\_secretariat/policies/academic/grading-practices-policy.html](https://www.dal.ca/dept/university_secretariat/policies/academic/grading-practices-policy.html)

### **Missed or Late Academic Requirements due to Student Absence (policy):**

See [https://www.dal.ca/dept/university\\_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html](https://www.dal.ca/dept/university_secretariat/policies/academic/missed-or-late-academic-requirements-due-to-student-absence.html)

## **Student Resources and Support**

### **Advising**

#### **General Advising:**

See [https://www.dal.ca/campus\\_life/academic-support/advising.html](https://www.dal.ca/campus_life/academic-support/advising.html)

#### **Science Program Advisors:**

See <https://www.dal.ca/faculty/science/current-students/academic-advising.html>

#### **Indigenous Student Centre:**

See [https://www.dal.ca/campus\\_life/communities/indigenous.html](https://www.dal.ca/campus_life/communities/indigenous.html)

#### **Black Students Advising Centre:**

See [https://www.dal.ca/campus\\_life/communities/black-student-advising.html](https://www.dal.ca/campus_life/communities/black-student-advising.html)

### **International Centre:**

See

[https://www.dal.ca/campus\\_life/international-centre/current-students.html](https://www.dal.ca/campus_life/international-centre/current-students.html)

## **Academic Supports**

### **Library:**

See

<https://libraries.dal.ca/>

### **Writing Centre:**

See

[https://www.dal.ca/campus\\_life/academic-support/writing-and-study-skills.html](https://www.dal.ca/campus_life/academic-support/writing-and-study-skills.html)

### **Studying for Success:**

See

[https://www.dal.ca/campus\\_life/academic-support/study-skills-and-tutoring.html](https://www.dal.ca/campus_life/academic-support/study-skills-and-tutoring.html)

### **Copyright Office:**

See

<https://libraries.dal.ca/services/copyright-office.html>

### **Fair Dealing Guidelines:**

See

<https://libraries.dal.ca/services/copyright-office/fair-dealing.html>

## **Other Supports and Services**

### **Student Health & Wellness Centre:**

See

[https://www.dal.ca/campus\\_life/health-and-wellness/services-support/student-health-and-wellness.html](https://www.dal.ca/campus_life/health-and-wellness/services-support/student-health-and-wellness.html)

### **Student Advocacy:**

See

<https://dsu.ca/dsas>

**Ombudsperson:**

See

[https://www.dal.ca/campus\\_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html](https://www.dal.ca/campus_life/safety-respect/student-rights-and-responsibilities/where-to-get-help/ombudsperson.html)

**Scent-Free Program:**

See

<https://www.dal.ca/dept/safety/programs-services/occupational-safety/scent-free.html>