

Instructor: Taro Mieno

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Lectures and Labs:

- Lectures: MW 3:00 - 4:30 PM (zoom)
- Labs: F 1:00 - 2:30 PM (zoom)

Office Hours: Wednesday, 10:00 to 11:30 pm or by appointment

Course Description: The main goal of this course is to learn how to conduct empirical research fairly independently by the end of the semester. In order to achieve this goal, students will be introduced to basic econometric theories through lectures. Further, students will be given plenty opportunities to apply econometric theories to actual empirical problems both during lectures and through assignments. Laboratory sessions lead primarily by TAs are designed so students learn how to use statistical software to conduct econometric analysis independently, along with data management and visualization.

Reading Materials:

Required: Wooldridge, Jeffrey M. 2006. "Introductory Econometrics: A Modern Approach (5th edition)." Mason, OH: Thomson/South-Western.

Recommended: Florian, Heiss. 2016 "Using R for Introductory Econometrics." CreateSpace Independent Publishing Platform.

Recommended: Norman, Matloff. 2011 "The Art of R Programming: A Tour of Statistical Software Design." No Starch Press.

Prerequisites: Intermediate calculus and statistics

Grading:

Assignments (5 assignments) :	50%
Paper:	50%
Proposal:	5%
Final paper:	45%
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Total:	100%

- **Assignments:** There will be 4 assignments. Late submissions will have 1/3 of a letter grade deducted from the grade for that submission, increasing by an additional 1/3 grade for each 24 hours beyond the deadline.
- **Paper:** This assignment consists of two parts: proposal and final paper.

- **Proposal:**

Objective:	Brief descriptions of the objective of the final paper
Datasets:	Brief descriptions of datasets you will use

- **Final paper:**

Introduction:	<ol style="list-style-type: none">1. clear identification of what you are trying to find out (research question) [1 point]2. why the research question is worthwhile answering [1 point]
Data description:	<ol style="list-style-type: none">1. the nature of the data with summary statistics table [1 point]2. visualize a few key variables in a meaningful way [3 points]
Econometric methods:	the process of how you end up with the final econometric models and methods. [40 points (or more)] <ol style="list-style-type: none">1. justification of your choice of independent variables2. potential endogeneity problems3. what did you do to address the endogeneity problems?4. justification of econometric model(s) and method(s)
Results and discussions:	<ol style="list-style-type: none">1. interpret and describe the results [2 points]2. implications of the results [1 point]
Conclusions	conclusions [1 point]

You write a paper with a particular emphasis on econometric analysis using a real world data set (**due: Nov, 20**). You are encouraged to use the datasets you are using for your masters thesis (talk with your advisor). Otherwise, you must find and use a **panel** data set.

You also write a paper proposal for your final paper (due: October, 14). This assignment is for keeping you on track for making timely progress on your final paper. Before you write a proposal, you will need to consult with me for your research topic and datasets to be approved (due: Oct, 7). This ensures that your final paper is feasible.

You present your paper proposal in class. Presentations are not graded according to the content of your paper, rather on your presentation skills. Here is the time line of the paper assignment:

Tentative Schedule:

MONDAY		WEDNESDAY		FRIDAY	
<div>Jan 17th</div> <div>1</div>		<div>19th</div> <div>2</div> <div>Introduction to econometrics</div>		<div>21st</div> <div>3</div> <div>Lab 1: Introduction to R</div>	
<div>24th</div> <div>4</div> <div>Simple univariate regression</div>		<div>26th</div> <div>5</div> <div>Simple univariate regression</div>		<div>28th</div> <div>6</div> <div>Lab 2: Rmarkdown</div>	
<div>31st</div> <div>7</div> <div>Simple univariate regression</div>		<div>Feb 2nd</div> <div>8</div> <div>Monte Carlo simulation</div>		<div>4th</div> <div>9</div> <div>Lab 3: Assignment 1 review</div> <div>Assignment 1 due before the class</div>	
<div>7th</div> <div>10</div> <div>Multivariate regression</div>		<div>9th</div> <div>11</div> <div>Multi-collinearity and omitted variable</div>		<div>11th</div> <div>12</div> <div>Lab 4: Data management I (dplyr)</div>	
<div>14th</div> <div>13</div> <div>Inference</div>		<div>16th</div> <div>14</div> <div>Asymptotics</div>		<div>18th</div> <div>15</div> <div>Lab 5: Data management II (dplyr)</div>	
<div>21st</div> <div>16</div> <div>Heteroskedasticity and robust standard error estimation</div>		<div>23rd</div> <div>17</div> <div>Clustered error and bootstrap</div>		<div>25th</div> <div>18</div> <div>Lab 6: Assignment 2 review</div> <div>Assignment 2 due before class</div>	
<div>28th</div> <div>19</div> <div>Functional form and scaling</div>		<div>Mar 2nd</div> <div>20</div> <div>Dummy variables</div>		<div>4th</div> <div>21</div> <div>Lab 7: data visualization 1</div>	
<div>7th</div> <div>22</div> <div>Further Issues</div>		<div>9th</div> <div>23</div> <div>Endogeneity</div>		<div>11th</div> <div>24</div> <div>Lab 8: data visualization 2</div>	
<div>14th</div> <div>25</div> <div>Panel data methods</div>		<div>16th</div> <div>26</div> <div>Panel data methods</div>		<div>18th</div> <div>27</div> <div>Lab 9: Assignment 3 review</div> <div>Assignment 3 due before class</div>	

MONDAY	WEDNESDAY	FRIDAY
21st 28 Proposal presentation	23rd 29 Panel data methods	25th 30 Lab 10 : Research flow and R I (research question identification and data collection)
28th 31 Panel data methods and paper expectation	30th 32 Instrumental variable estimation	<div>Apr 1st</div> 33 Lab 11 Research flow and R II (data management)
4th 34 Instrumental variable estimation	6th 35 Limited dependent variable	8th 36 Lab 12 : Assignment 4 review Assignment 4 due
11th 37 Limited dependent variable	13th 38 Limited dependent variable	15th 39 Lab 13 Research flow and R III (exploratory analysis)
18th 40 Limited dependent variable	20th 41 Miscellaneous and uncovered topics	22nd 42 Lab 13 Research flow and R IV (regression analysis and reporting)

Academic Honesty:

Students are expected to adhere to guidelines concerning academic dishonesty outlined in Section 4.2 of University's Student Code of Conduct (<http://stuaufs.unl.edu/ja/code/>). Students are encouraged to contact the instructor for clarification of these guidelines if they have questions or concerns. The Department of Agricultural Economics has a written policy defining academic dishonesty, the potential sanctions for incidents of academic dishonesty, and the appeal process for students facing potential sanctions. The Department also has a policy regarding potential appeals of final course grades. These policies are available for review on the department's website (<http://agecon.unl.edu/undergraduate>)

Students with disabilities:

Students with disabilities are encouraged to contact the instructor for a confidential discussion of their individual needs for academic accommodation. It is the policy of the University of Nebraska-Lincoln to provide flexible and individualized accommodation to students with documented disabilities that may affect their ability to fully participate in course activities or to meet course requirements. To receive accommodation services, students must be registered with the Services for Students with Disabilities (SSD) office, 132 Canfield Administration, 472-3787 voice or TTY.