

**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)

zoom link: <https://unl.zoom.us/j/93493145774>

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

You write a paper with a particular emphasis on econometric analysis using a real world data set (**due: May, 11**). 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: April, 1). 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: March, 23). 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 timeline of the paper assignment:

You may be able to find a panel dataset that fits your interest from the following sources (not all datasets are panel datasets):

- OPENICPSR
- Replication Wiki
- woolrdridge R package

## Tentative Schedule:

MONDAY		WEDNESDAY		FRIDAY	
<div>Jan 17th</div> <div>1</div>		<div>19th</div> <div>2</div>		<div>21st</div> <div>3</div>	
		Introduction to econometrics		Lab 1: Introduction to R	
<div>24th</div> <div>4</div>		<div>26th</div> <div>5</div>		<div>28th</div> <div>6</div>	
Simple univariate regression		Simple univariate regression		Lab 2: Rmarkdown	
<div>31st</div> <div>7</div>		<div>Feb 2nd</div> <div>8</div>		<div>4th</div> <div>9</div>	
Simple univariate regression		Monte Carlo simulation		Lab 3: Assignment 1 review Assignment 1 due before the class	
<div>7th</div> <div>10</div>		<div>9th</div> <div>11</div>		<div>11th</div> <div>12</div>	
Multivariate regression		Multi-collinearity and omitted variable		Lab 4: Data management I (dplyr)	
<div>14th</div> <div>13</div>		<div>16th</div> <div>14</div>		<div>18th</div> <div>15</div>	
Inference		Heteroskedasticity and robust standard error estimation		Lab 5: Data management II (dplyr)	
<div>21st</div> <div>16</div>		<div>23rd</div> <div>17</div>		<div>25th</div> <div>18</div>	
Clustered error and bootstrap		Functional form and scaling		Lab 6: Assignment 2 review Assignment 2 due before class	
<div>28th</div> <div>19</div>		<div>Mar 2nd</div> <div>20</div>		<div>4th</div> <div>21</div>	
Dummy variables		Panel data methods		Lab 7: data visualization 1	
<div>7th</div> <div>22</div>		<div>9th</div> <div>23</div>		<div>11th</div> <div>24</div>	
Panel data methods		Panel data methods		Lab 8: data visualization 2	
<div>14th</div> <div>Spring break: No class</div>		<div>16th</div> <div>Spring break: No class</div>		<div>18th</div> <div>Spring break: No class</div>	
<div>21st</div> <div>25</div>		<div>23rd</div> <div>26</div>		<div>25th</div> <div>27</div>	
Panel data methods		Panel data methods and paper expectation		Lab 9: Assignment 3 review Assignment 3 due before class	

MONDAY		WEDNESDAY		FRIDAY
28th Causal Inference	<b>28</b>	30th Causal Inference	<b>29</b>	<div>Apr 1st</div> <b>30</b> Lab 10: Research flow and R I (research question identification and data collection)
4th Causal Inference	<b>31</b>	6th Causal Inference	<b>32</b>	8th <b>33</b> Lab 11 Research flow and R II (data management)
11th Causal Inference	<b>34</b>	13th Causal Inference	<b>35</b>	15th <b>36</b> Lab 12: Assignment 4 review Assignment 4 due
18th Causal Inference	<b>37</b>	20th Causal Inference	<b>38</b>	22nd <b>39</b> Lab 13 Research flow and R III (exploratory analysis)
25th Limited dependent variable	<b>40</b>	27th Limited dependent variable	<b>41</b>	29th <b>42</b> Lab 13 Research flow and R IV (regression analysis and reporting)
<div>May 2nd</div> Limited dependent variable	<b>43</b>	4th Limited dependent variable	<b>44</b>	6th <b>45</b> No Class

**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://stuaafs.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.

**Mask Requirement:**

At the moment, the university policy states that students are required to wear a mask in the classroom.