PA 5031 Empirical Analysis I  
Fall 2015, Blegen Hall 10, Tuesdays 6:00-8:45 pm

Instructor:
    Frank Lei Zhang (ABD), HHH 138, Tel.: 612-626-8910; Email: zhang700@umn.edu;  
    Office hours: Tuesdays, 4:30-6:00 pm, or by appointment

TA and lab:
    TAs: Jamie Kenealy (kene0019@umn.edu) and Renee Van Siclen (vansi044@umn.edu)  
    HHH 230P, Tel.: (xxx)-xxx-xxxx  
    Office hours:  
    Jamie Mondays, 3:30-4:30 pm and Wednesdays, 11:15 am-12:15 pm, or by appointment;  
    Renee Tuesdays 3:00-4:00 pm and Thursdays 11:00 am-12:00 pm, or by appointment.  
    Your TAs will co-teach following lab sections. Please choose one to attend:  
    Lab section 006: Thursday, 4:30-5:45 pm, Hubert H. Humphrey Center 85;  
    Lab section 007: Thursday, 6:00-7:15 pm, Hubert H. Humphrey Center 85.

Study materials:
    2. Class website (Moodle): ay15.moodle.umn.edu or through MyU.
    3. Lecture notes: available on Moodle. Lecture notes cover more materials than required text and these additional topics will be tested in assignments, quizzes, and exams. Lecture notes will appear on Moodle two days before scheduled meeting. Please go through lecture notes after reading textbook chapters.
    5. Stata is the software for this class and it is available at HHH Center 85. You don’t have to buy a copy of Stata since all your assignment works can be finished during lab sessions. Just in case you need a copy on your personal computer, please follow instructions at http://it.umn.edu/stata-gradplan-method-number-3 to make a purchase at a discounted academic price.

Course description:
    Quantitative skills and mathematical thinking are crucial for your future career success. In PA 5031, we will explore the nature of basic statistics for social sciences as a core mathematical body of knowledge with its own logic, as a quantitative way of thinking, and as a powerful tool for understanding and describing social and political phenomena. Quantitative skills and mathematical thinking are also very challenging for students. In PA 5031, we will conquer mathematical barriers together in following ways: (1) building up confidence of learning mathematics; (2) treating math/formulas as a new “foreign” language; (3) working on examples with increasing difficulty in a step-by-step manner.
As an entry-level quantitative analysis course for master students, PA 5031 covers statistical foundations and computation skills that are designed to prepare students for their future learning at the Humphrey School. More in details, PA 5031 emphasizes basic statistical descriptions and inferences of survey data in a ***learning-by-doing style***. First, lectures of this course expose students to mathematic knowledge of statistical methods with rich and diverse examples of social and political issues and cover following topics (1) numerical data description with frequency table, central tendencies, and dispersions; (2) graphical data presentation; (3) basics on probability theory and statistical inference; (4) bivariate association and correlation; (5) linear regression. Next, laboratory sessions co-taught by our two TAs will introduce you basic computing and data manipulation techniques using Stata, very popular stat software for empirical analyses in the academia and various industries. In labs, students are expected to apply theoretical knowledge to investigate real survey data (General Social Survey 2012) and complete two assignment packages. In addition to attending lectures and labs, students are expected to read and preview around 30 pages of the text plus PPT slides per week. There will be two random quizzes and two exams. Students will need a scientific calculator for assignments, quizzes, and exams.

Course requirements

1. **Class and lab attendance:** You are responsible for attending each class and lab since lecture materials and lab works are essential for your achievements. Be sure to complete the required readings (see “Schedule and Lecture Topics”) before coming to each lecture.

2. **Assignments:** Statistics is to be understood and learned by doing the problems, and completing assignments is an essential part of your learning. Two assignments can be completed in labs with the guidance of lab instructors, but you ought to complete them by yourselves. You will receive a zero on any assignment that is completed using dishonest means. You will **fail the course** following a second infraction. ***No late assignment is accepted*** (see due dates listed in the “Schedule and Lecture Topics”).

3. **Quizzes:** Totally two quizzes will be given ***at random*** to test your understanding of critically important concepts and calculations. One random quiz will be given during lecture. It will have no more than five questions and can be finished within 15 minutes. For computation questions, formulas will be given and it is your job to pick correct formulas, reach correct calculation results, and make reasonable interpretations. Another quiz will be given during lab. It will test your understanding of Stata commands and explaining Stata outputs. No make-up quizzes will be given unless with a signed doctor’s note for illness or with evidence for the most unusual circumstances. In this case, all make-up quizzes must be taken **within seven days** of the scheduled quizzes.

4. **Exams:** Totally two exams will be given. Exams are semi-open-book, which means that (1) you can bring a one-page (letter-size and double-side) study guide to the test; (2) formulas will be given on the last page of the test and it is your job to pick correct formulas, reach correct calculation results, and make reasonable interpretations. No make-up exams will be given unless with a signed doctor’s note for illness or with evidence for the most
unusual circumstances. In this case, all make-up exams must be taken within seven days of the original exam.

5. Calculator: A calculator with square-root function is needed to complete assignments and exams.

6. Electronics in class: You may bring your laptops/ipads/Android pads to the classroom for notes-taking purpose. You should put your cellphone to silent mode during classes. Recordings may not be taken without permission. Recordings are for personal use only and students are forbidden from distributing recordings to others or sharing them on-line.

Grading
Distribution of a 100-point scale:
• Two assignments, 15% each and totally 30%;
• Two exams, 30% each and totally 60%;
• Two random quizzes, 5% each and totally 10%;
• There is NO extra credit for this class.

Letter grades on a 100-point scale:
100-95=A; 94-90=A-; 89-85=B+; 84-80=B; 79-75=B-;
74-70=C+; 69-65=C; 64-60=C-; 59-50=D; <50=F.

Policy on make-up exams:
Students who miss the exams--due to verifiable illness, family emergency, religious observance, or mandatory University-sponsored event--must take a makeup exam on a scheduled date. From past experience, scores on make-up exams tend to be much lower than scores on scheduled exams, so you should make every effort to take all exams as scheduled in class. A written verification must be presented before a make-up exam is permitted by the instructor.

Incompletes:
This course follows the Humphrey School policy regarding incompletes. An incomplete will only be granted after the Professor and the student have mutually agreed upon a timetable (written contract) for completion of coursework. An incomplete must be requested in advance, and the Humphrey Institute incompletes form must be filled out. The form is on-line; a link is provided on the class web page.

Resources for mental health issues and disabilities:
• Student Mental Health Website at http://www.mentalhealth.umn.edu
• Students with disabilities are encouraged to contact with me as early as possible to discuss their special needs for accommodations. Special accommodations, such as extended exam time, front-row seats, interpreters, and etc., must be arranged in advance. Further information is available from Disabilities Services (230 McNamara). Related Website: https://diversity.umn.edu/disability/

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1 This is copied from Professor Deborah Levison’s syllabus (PA 5031, Fall 2011).
Scholastic misconduct\textsuperscript{2}:
Scholastic misconduct is broadly defined as any act that violates the right of another student in academic work or that involves misrepresentation of your own work. Scholastic dishonesty includes, (but is not necessarily limited to): cheating on assignments or examinations; plagiarizing, which means misrepresenting as your own work any part of work done by another; submitting the same paper, or substantially similar papers, to meet the requirements of more than one course without the approval and consent of all instructors concerned; depriving another student of necessary course materials; or interfering with another student’s work. University policy prohibits sexual harassment as defined in the December 1998 policy statement, available at the Office of Equal Opportunity and Affirmative Action. Questions or concerns about sexual harassment should be directed to this office, located in 419 Morrill Hall.

\textsuperscript{2} This is copied from Professor Deborah Levison’s syllabus (PA 5031, Fall 2011).
## Schedule and Lecture Topics

<table>
<thead>
<tr>
<th>Week</th>
<th>Dates</th>
<th>Topics</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>09/08</td>
<td>Frequency distributions and graphical data presentation</td>
<td>Chap 1/2</td>
</tr>
<tr>
<td>2</td>
<td>09/15</td>
<td>Summary statistics: central tendency and dispersion</td>
<td>Chap 3/4</td>
</tr>
<tr>
<td>3</td>
<td>09/22</td>
<td>Z-score and sampling distribution</td>
<td>Chap 5/6</td>
</tr>
<tr>
<td>4</td>
<td>09/29</td>
<td>Confidence interval</td>
<td>Chap 7</td>
</tr>
<tr>
<td>5</td>
<td>10/06</td>
<td>One-sample T-test</td>
<td>Chap 8, p179-192</td>
</tr>
<tr>
<td>6</td>
<td>10/13</td>
<td>Two independent-sample T-test</td>
<td>Chap 8, p193-211</td>
</tr>
<tr>
<td>7</td>
<td>10/20</td>
<td><strong>Assignment #1 due on 10/15 by the end of lab</strong></td>
<td>Handout</td>
</tr>
<tr>
<td>8</td>
<td>10/27</td>
<td><strong>Exam #1</strong></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>11/03</td>
<td>Relationship of two discrete variables: crosstabulation and test of independence</td>
<td>Chap 9, p212-237 + Handout</td>
</tr>
<tr>
<td>10</td>
<td>11/10</td>
<td>Relationship of two discrete variables: measures and tests of associations</td>
<td>Chap 9, p238-260 + Handout</td>
</tr>
<tr>
<td>11</td>
<td>11/17</td>
<td>Relationship of two continuous variables: correlation</td>
<td>Handout</td>
</tr>
<tr>
<td>12</td>
<td>11/24</td>
<td>Relationship of two continuous variables: regression I</td>
<td>Chap 11, p281-297</td>
</tr>
<tr>
<td>13</td>
<td>12/01</td>
<td>Relationship of two continuous variables: regression II</td>
<td>Chap 11, p298-300 + Handout</td>
</tr>
<tr>
<td>14</td>
<td>12/08</td>
<td><strong>Assignment #2 due on 12/03 by the end of lab</strong></td>
<td>Handout</td>
</tr>
<tr>
<td>15</td>
<td>12/15</td>
<td><strong>Review (You will get graded Assignment #2 back)</strong></td>
<td>Handout</td>
</tr>
</tbody>
</table>

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Assignment #1 due on 10/15 by the end of lab

Assignment #2 due on 12/03 by the end of lab
Policy Statements for Syllabi

**Student Conduct Code:**

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see: [http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf).

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach or student learning. The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities."

**Use of Personal Electronic Devices in the Classroom:**

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. To this end, the University establishes the right of each faculty member to determine if and how personal electronic devices are allowed to be used in the classroom. For complete information, please reference: [http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html](http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html).

**Scholastic Dishonesty:**

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: [http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf](http://regents.umn.edu/sites/default/files/policies/Student_Conduct_Code.pdf)) If it is determined that a student has cheated, he or she may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: [http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html](http://policy.umn.edu/Policies/Education/Education/INSTRUCTORRESP.html).

The Office for Student Conduct and Academic Integrity has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: [http://www1.umn.edu/oscai/integrity/student/index.html](http://www1.umn.edu/oscai/integrity/student/index.html). If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class—e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

**Makeup Work for Legitimate Absences:**

Students will not be penalized for absence during the semester due to unavoidable or legitimate circumstances. Such circumstances include verified illness, participation in intercollegiate athletic events, subpoenas, jury duty, military service, bereavement, and religious observances. Such circumstances do not include voting in local, state, or national elections. For complete information, please see: [http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html](http://policy.umn.edu/Policies/Education/Education/MAKEUPWORK.html).

**Appropriate Student Use of Class Notes and Course Materials:**

Taking notes is a means of recording information but more importantly of personally absorbing and integrating the educational experience. However, broadly disseminating class notes beyond the classroom community or accepting compensation for taking and distributing classroom notes undermines instructor interests in their intellectual work.
product while not substantially furthering instructor and student interests in effective learning. Such actions violate shared norms and standards of the academic community. For additional information, please see: http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html.

**Grading and Transcripts:**

The University utilizes plus and minus grading on a 4.000 cumulative grade point scale in accordance with the following:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 4.000</td>
<td>Represents achievement that is outstanding relative to the level necessary to meet course requirements</td>
</tr>
<tr>
<td>A- 3.667</td>
<td></td>
</tr>
<tr>
<td>B+ 3.333</td>
<td></td>
</tr>
<tr>
<td>B 3.000</td>
<td>Represents achievement that is significantly above the level necessary to meet course requirements</td>
</tr>
<tr>
<td>B- 2.667</td>
<td></td>
</tr>
<tr>
<td>C+ 2.333</td>
<td></td>
</tr>
<tr>
<td>C 2.000</td>
<td>Represents achievement that meets the course requirements in every respect</td>
</tr>
<tr>
<td>C- 1.667</td>
<td></td>
</tr>
<tr>
<td>D+ 1.333</td>
<td></td>
</tr>
<tr>
<td>D 1.000</td>
<td>Represents achievement that is worthy of credit even though it fails to meet fully the course requirements</td>
</tr>
<tr>
<td>S</td>
<td>Represents achievement that is satisfactory, which is equivalent to a C- or better.</td>
</tr>
</tbody>
</table>

For additional information, please refer to: http://policy.umn.edu/Policies/Education/Education/GRADINGTRANSCRIPTS.html.

**Sexual Harassment**

"Sexual harassment" means unwelcome sexual advances, requests for sexual favors, and/or other verbal or physical conduct of a sexual nature. Such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive working or academic environment in any University activity or program. Such behavior is not acceptable in the University setting. For additional information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/SexHarassment.pdf.

**Equity, Diversity, Equal Opportunity, and Affirmative Action:**

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: http://regents.umn.edu/sites/default/files/policies/Equity_Diversity_EO_AA.pdf.

**Disability Accommodations:**

The University of Minnesota is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (e.g., mental health, attentional, learning, chronic health, sensory, or physical), please contact DS at 612-626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DS and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DS website, https://diversity.umn.edu/disability/.
**Mental Health and Stress Management:**
As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health Website: [http://www.mentalhealth.umn.edu](http://www.mentalhealth.umn.edu).

**Academic Freedom and Responsibility: for courses that do not involve students in research**
Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help. Contact the instructor, the Department Chair, your adviser, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost.

*Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".*