Course Description:

This course introduces students to statistics and statistical methods and helps students learn how to ethically use statistics in policy analysis. It is intended and designed for students who have little familiarity with statistics or who may want to review basics so that their knowledge base is built on a solid foundation. Students acquire the skills to comprehend simple statistical reports related to social policy and program evaluation. Students will be able to assess the value and limitations of measures and statistical estimates. Students will develop the ability to use quantitative methods to describe real world situations in social work settings, to describe outcomes for vulnerable populations, and to make ethical inferences on statistical results. Students learn to choose methods of statistical analysis to improve social policy decisions and service delivery programs. Students learn to use appropriate language with their statistical analyses to clarify meaning and to explain the inferences that can be appropriately and ethically made from specific data. Finally, students learn to construct very basic reports that include meaningful tables, and graphs for various audiences and provide content that is appropriate for different audiences.

Each week, using statistics, we address an issue of importance to social workers and, using statistics, describe outcomes for vulnerable populations.
Complete description of the course and its place in the MSW program

Course Content and Objectives:

This course focuses on learning analytical skills and the ethical reporting of analytical results. Students will review the use of simple rates, averages, and other statistics. Students will conduct, interpret, and present statistical analyses to various audiences. Students will receive a brief introduction to the theoretical foundations of descriptive and inferential statistics. Students will learn to use the appropriate choice of statistics based on available data, the problem to be addressed, and the audience for the analysis. Students will learn the importance of the difference between causality and correlation. Students will learn to interpret, prepare, and report on statistical analyses of problems in policy analysis and evaluation.

By the end of the semester, students will be able to:

- construct rates, means, proportions and other simple statistics and interpret them appropriately;
- ethically use and ethically report on the results of statistical analyses;
- identify appropriate simple statistical methods to use in policy and program evaluation situations;
- conduct basic statistical analyses of common policy and program evaluation situations;
- use basic descriptive statistics and test simple hypotheses to answer policy or evaluation questions;
- construct meaningful and readable charts, tables, and graphs of appropriate data;
- prepare written, oral and visual reports for different audiences using appropriate statistical language.

Relationship to Four Curricular Themes and Ethics and Values:

Multiculturalism and Diversity: Students will develop the capacity to identify ways in which gender, race, ethnicity, social class, age and other forms of social stratification and disenfranchisement in the community influence and are affected by the decisions made from statistical analyses and related methodologies.

Social Change and Social Justice: The ability to assess policies and programs analytically is necessary if the social work profession is to play an important role in shaping the outcome of ongoing program and policy debates to reflect issues in social change and justice. This course provides students with the capacity to understand and influence the role statistical analysis and the interpretation of such analysis play in the formation and implementation of policy, practice and program development.

Promotion and Prevention: Prevention and promotion activities are difficult to evaluate and therefore raise special challenges in statistical analysis. It is important to expose students to the language of statistics so that they may comprehend useful and appropriate statistical techniques for different problems. In this way they may analyze and evaluate promotion and prevention activities prior to the development, implementation, and analysis of any relevant policy issue or initiative that they encounter in the course of their professional activities.

Social Science: Social workers should examine the ways in which social science data is translated into current policy and practice and the consequences (both positive and negative) that emerge from statistical analyses. This course provides students with the capacity to understand and influence the role statistical analysis plays in the formation and implementation of policy, practice and programs.

Relationship of this Course to Social Work Ethics and Values: Ethical standards of research methods (NIH guidelines), social work practice (NASW Code of Ethics) and evaluation practice (Program Evaluation Standards) will be used to review issues commonly found in the statistical analysis of policy and evaluation.
September:
- Review background materials on writing policy briefs with statistics, student driven
- Read articles and then policy briefs that use statistics
- Practice interpreting and using statistics from published briefs
- Learn to make basic distributional calculations in tabular and graphical format
- Begin basic analysis with SPSS
- Statistics:
  - Week 1: percentages and rates
  - Week 2: frequencies
  - Week 3: mean, median, mode, minimum, maximum, range, standard deviation
  - Week 4: graphs of single variables

October:
- Conduct statistical analyses using SPSS
- Write basic policy content to go with statistical analyses
- Prepare well-documented and clear graphs and charts
- Learn how to use statistics appropriately and ethically
- Work on more extensive and ethical description in statistics
- Begin to write knowledgeably about statistics and clearly communicate statistical results
- Learn new statistical methods
- Produce statistical analyses using SPSS
- Statistics:
  - Week 5: bivariate relationships, contingency tables, scatterplots, correlations
  - Week 6: graphs comparing multiple variables or with multiple categories
  - Week 7: theory
  - Week 8: confidence intervals
  - Week 9: tests of mean/proportion

November:
- Learn new statistical methods
- Use statistics to address real problems for social workers
- Test a hypothesis and a program or policy
- Use statistics to profile different populations and differences among them
- Produce brief format level work
- Statistics:
  - Week 10: tests of multigroup differences
  - Week 11: basic linear regression and program evaluation
  - Week 12: expanding and practicing basic regression analysis
  - Week 13: basic categorical regressions, programs and policies

December:
- Consolidate our knowledge and project work
- Produce work suitable for a policy briefing
- Produce ethical policy brief suitable for professional portfolio
- Statistics
  - Questions, consolidation, and working on final project
Course resources and Preparation Expectations

Required Resources:

To have a successful experience in this class, it is required that you own a laptop, that you bring your laptop to class, and that SPSS 25 is loaded on your laptop.

- Laptops are required for all SSW students ([https://ssw.umich.edu/msw-student-guide/section/1.22.00/359/laptop-requirement-policy](https://ssw.umich.edu/msw-student-guide/section/1.22.00/359/laptop-requirement-policy)). Bring your laptop to class and purchase SPSS 25 from the Computer Showcase ($45, see [http://showcase.itcs.umich.edu/](http://showcase.itcs.umich.edu/)). If you do not bring a laptop to class, you may not be able to complete class work and assignments on time. Having insufficient supplies does not constitute an effective excuse for doing work late.

Either Purchase Reference Textbook OR use Free On-Line Textbooks.

- Reference reading is your responsibility and is essential to understand the methods, and to ethically produce and interpret the statistics we use. Our class and my lectures are well mirrored in the Weinback and Grinnell textbook. I know that many students do not like to purchase textbooks so I have also provided readings from free online textbooks. **They do NOT mirror our class although they will have similar statistical topics.** Either purchase the Weinbach and Grinnell textbook (written with social workers in mind) or access free books and references online.

  • [https://www.vitalsource.com/referral?term=9780205981847](https://www.vitalsource.com/referral?term=9780205981847) (WG in readings)

- To use free reference books: There is at least one online textbook chapter linked each week in the syllabus schedule. You may find chapters in different online textbooks that better fit your learning style. Many online textbooks are listed in [http://davidmlane.com/hyperstat/index.html](http://davidmlane.com/hyperstat/index.html)

Access issues and Brief Reading/Video Materials.

- We often read reports, briefs, news articles, or watch videos related to our work. I try to use very current articles so specific articles are not listed in the semester long syllabus. They will be listed in Canvas in the weekly schedule. These readings may be required and can form the contextual basis of work that we do in class each week. If you have not prepared, you won’t be able to do in-class work and your group’s output will be negatively affected.

Access class “assets” through the Canvas course site.

- Lecture notes, assignments, background materials, handouts, and the class syllabus are all available there. To find our site, go to canvas.umich.edu and sign in. Only students registered for this class will have access to the web site.
Required Preparation:

These references for writing briefs and for writing about data are helpful to use as guides for your work in this class and future writing. Please access them by September 19th so that you know how to use them as references for your work. They are on or linked to the course site.

Students should have experience in writing policy briefs, but some do not. Briefs vary in style depending on the length, purpose, and audience. A typical brief, even a short one, will have a title and different sections with headings. It may include an introduction, and sections on sources, focus, methodology, findings, implications, recommendations, and a summary or conclusion. It may have sidebars, boxes, graphs, tables, photos, bullet points, etc. for emphasis.

Resources on brief writing on the Canvas course site:

This video is only 18 minutes long. *The Art and Craft of Policy Briefs:*

Writing Effective Reports. This chapter is easy to read and filled with good advice for writing. FAO instructions for writing policy briefs and basic writing instructions (Chapter 4.1 of *FAO Food Security Communications Toolkit. 2011*). Source: http://www.fao.org/docrep/014/i2195e/i2195e03.pdf


Resources on statistical writing on the Canvas course site:


Each week we will practice using and writing about statistics. The in-class assignments typically have minimal writing and may only comprise a single section of a brief. The take-home assignments will require a more complete brief format style.

We won’t have enough time to explore new ways of providing information, but infographics is an exciting way of delivering statistical information and is a great skill for social workers.
Responsibilities, Course Assignments and General Grading Issues

- **Attendance is expected.** Active participation is important to our learning journey.
  
  An Adequately Documented Emergency (ADE) is when you have an emergency and you have a signed letter from someone in an official position like a doctor, police officer, or priest stating in his or her opinion you are NOT able to attend class. A letter saying you have been seen by a doctor is NOT an ADE.

- There are no excused absences on October 17th, November 7th, or November 28th without an ADE.

- Otherwise, you may miss two classes without harm or explanation—you don’t even have to tell me—for excused or unexcused reasons (e.g. you’re ill, you need to attend a funeral, you don’t feel like coming).

- Missing a third class without an ADE reduces your letter grade by one full step (from A to B, etc.).

- Missing a fourth class without an ADE leads to a failing grade in the course.

- **We adhere to the LS&A statement on academic integrity:** Please be sure to read this important statement at [http://www.lsa.umich.edu/academicintegrity](http://www.lsa.umich.edu/academicintegrity) Plagiarism is cheating. Any student caught plagiarizing or cheating will earn a failing grade in this course. There are no exceptions. Please make sure that you understand what constitutes plagiarism or cheating.

- **Grades are earned through multiple in-class and homework assignments:**

  Many students are fearful of a class in statistics and are worried that they will “blow it”. SSW673 has many in-class group assignments worth relatively few points. Weekly group work allows students to help and learn from each other as they practice new skills. There are also three individual in class assignments with lots of support from the professor and other students.

  There are two take home assignments. Students may work together to generate the assignment statistics but each student must prepare his or her own report/brief and its graphs, tables, and other contents.

  As a general rubric, grades are based on completeness (answering all questions), success in following the format of a brief (you are writing for an audience, not producing numbered answers for homework), correct calculation, use, and interpretation of statistical output, grammar, structure, and readability, and complete and effective communication of your findings. A grade rubric is attached to each assignment in Canvas.

  All assignments are to be turned in to the Canvas site as Word or .pdf document attachments (email submissions are not accepted). Please follow file format conventions and deadlines. Graded assignments will be returned electronically through the Canvas site as quickly as possible. If any student has difficulty understanding the use of Canvas, classes on its uses are available throughout the university and there is a Canvas help document on the course site.

  Late take-home assignments are assessed a penalty unless an ADE prevents on-time work. An assignment up to one week late will be assessed a 15% penalty (a 20-point assignment will get a maximum of 17 points, etc.). The penalty is 25% from one to two weeks late and 50% for an assignment late for more than two weeks (a 20-point assignment will get a maximum of 10 points, etc.). Unfortunately, there is no extra credit for this class.
## Assignment Matrix

### In-class group work
- **Points:** 32 (4 each)
- **Description:** There are ten in-class group assignments but only eight count toward your grade. The two with the lowest scores will be dropped OR you can have up to two unexplained absences. Most of the professor’s contextual feedback takes place during in-class work but there will sometimes be brief comments on submissions. Group partners are randomly assigned each week.

### In-class individual work
- **Points:** 12 (4 each)
- **Description:** There are 3 in-class individual in-class assignments and all 3 count toward your grade. To get credit, you must be present in class on these days unless there is an ADE. Two of the individual in-class assignments are to provide peer review of another student’s work (see below) and you cannot get credit unless you have turned in your own draft on time.

### Take Home Assignments
- **Points:** 44 (total)
- **Description:** There are two take home assignments.
  
  **NOTE:** During class, students will review, support, and critique another student’s drafts and provide comments, suggestions, and criticisms (reviews are also assessed and graded). **If you don’t turn in your draft on time you won’t be able to review an assignment and will lose those in-class points.**

  Draft grades are an average of student and professor reviews. Final versions are professor graded.

### Assignment 1
- **Points:** 15
- **Due Date:** October 16th at noon (first draft), October 24th at 11:59 pm (final version)
- **Description:** The first draft of Assignment # 1 is due on October 16th at noon. The first draft is worth a maximum 10 points.
  
  Students will peer review drafts on October 17th.
  
  The final version of Assignment # 1 must be submitted by October 24th at 11:59 pm. The final version is worth an additional 5 points.

### Assignment 2
- **Points:** 29
- **Due Date:** November 27th at noon (first draft), December 8th at 11:59 pm (final version)
- **Description:** The first draft of Assignment # 2 must be submitted by November 27th at noon. The first draft is worth 15 points.
  
  Students will peer review drafts on November 28th.
  
  The final version of Assignment # 2 is due on December 8th at 11:59 pm. The final version is worth an additional 14 points. We will spend class time on December 5th supporting each other and working on this assignment.

### Total points
- **Points:** 88
- **Description:** Your total percentage points = (# of points you earned/88)*100.
  
“Although the University of Michigan, as an institution, does not observe religious holidays, it has long been the University's policy that every reasonable effort should be made to help students avoid negative academic consequences when their religious obligations conflict with academic requirements. Absence from classes or examinations for religious reasons does not relieve students from responsibility for any part of the course work required during the period of absence. Students who expect to miss classes, examinations, or other assignments as a consequence of their religious observance shall be provided with a reasonable alternative opportunity to complete such academic responsibilities. It is the obligation of students to provide faculty with reasonable notice of the dates of religious holidays on which they will be absent. Such notice must be given by the drop/add deadline of the given term. Students who are absent on days of examinations or class assignments shall be offered an opportunity to make up the work, without penalty, unless it can be demonstrated that a make-up opportunity would interfere unreasonably with the delivery of the course. Should disagreement arise over any aspect of this policy, the parties involved should contact the Department Chair, the Dean of the School, or the Ombudsperson. Final appeals will be resolved by the provost.”

https://www.provost.umich.edu/calendar/religious_holidays18-19.html

If you think you need an accommodation for a disability, please let me know at your earliest convenience. Some aspects of this course, the assignments, the in-class activities, and the way the course is usually taught may be modified to facilitate your participation and progress.

If you need an accommodation for a disability, please give the VISA form from SSD to Sherrie at least two weeks prior to the need for accommodation to give time to decide (and no later than three days after the drop/add deadline). If you don’t have a VISA form, contact the Services for Students with Disabilities (SSD) office. Once your eligibility is determined, you will be issued a Verified Individual Services Accommodation (VISA) form and we can arrange accommodations. We may not be able to accommodate students who do not inform us of their needs within this reasonable time. Any information you provide is private and confidential. Unfortunately, I can make special accommodations only if I receive a letter from the SSD office.
Student alert: The schedule is well prepared but should be considered tentative. It is difficult to predict what we will do in every single class in the future (for example, the building lost electricity and a class had to be cancelled in 2016). Rarely, weekly issues readings may be changed. You will be informed in class and on the Canvas site about specific work changes.

Examine articles before you print them. Some of them are long and you are only responsible for part of the article.

<table>
<thead>
<tr>
<th>Week 1, September 5th</th>
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</thead>
<tbody>
<tr>
<td><strong>Skills</strong></td>
</tr>
<tr>
<td>What matters in statistics? What matters in policy analysis? Why do social workers care?</td>
</tr>
<tr>
<td>Calculating, reading and interpreting percentages and rates</td>
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</tbody>
</table>

**Issues reading for Week 2:**

See Canvas site.

Make sure to complete the brief preparing resources before September 19th. We will have class discussion on these issues on that day.

**In-Class Group Work (practice):**
### Skills
Comparing characteristics of different populations or groups of people. When and how can you do it?

### Data set basics
Learning how variables are measured and what they mean

### SPSS creation of rates and percentages (over the next couple of weeks).

### In-Class Group Work Credit 1 (4 points):

### Activities
- What is a data set?
- Data set basics: variables, measurement levels.
- Measurement classifications: Discrete and continuous variables
- Absolute, relative, and cumulative frequencies.
- Opening a data set in SPSS, introduction to SPSS and using data.
- SPSS procedures for absolute, relative, and cumulative frequencies.
- Creating measures and working with statistics (over the next couple of weeks).

### Preparation for Week 3
- Reference statistical reading for Week 3:
  WG, Chapter 3

- Issues reading for Week 3:
  See Canvas site.
  Make sure to complete the brief preparing resources before September 19th. We will have class discussion on these issues on that day.
### Week 3, September 19th

<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 4</th>
</tr>
</thead>
</table>
| **Descriptive Statistics:** Working with single variable analysis and comparing groups. | Review SPSS procedures for absolute, relative, and cumulative frequencies. Presenting measures of central tendency and description, rates, and variability. Creating measures and working with statistics (over the next couple of weeks). Calculating simple means, medians, minimum, maximum, and range. Recognizing problems: missing values, outliers and intervening variables (over the next few weeks). | **Reference statistical reading for Week 4:**  
http://onlinestatbook.com/2/graphing_distributions/graphing_qualitative.html  
WG, Chapter 2 (part 2) |
| **The ethical use of means, medians, frequencies, and measure of variability** | In Class Group Work Credit 2 (4 points) | **Issues Reading for Week 4:**  
See Canvas site |
| **SPSS procedures for means, medians, measures of variability** | | |
| **Statistical reporting for different audiences. Talking ethically about statistics** | | |

**Reference statistical reading for Week 4:**

http://onlinestatbook.com/2/graphing_distributions/graphing_qualitative.html  
WG, Chapter 2 (part 2)
The visualization of data.
The creation of graphs and charts.
Lying with graphs?
Ethical communication and visualization

Begin understanding visual ways to portray data sets, simple graphs: pie charts, bar charts, histograms, etc.
Making good graphs in SPSS.
The ethics of public graph presentation. How to prepare a graph, how to talk (or write) about what the graph contains problems (intro)

Reference statistical reading for Week 5:

StatPrimer Chapter 14 correlation (excellent)-see link in Canvas
tutorial on two way tables (go to exploring data, categorical data, two-way tables)
WG, Chapter 8 (we will look at Chi-Square tests later)
WG, Chapter 9

In Class Group Work Credit
3 (4 points)

Issues Reading for Week 5:
See Canvas site.
### Week 5, October 3\(^{rd}\)

<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Begin understanding two variable relationships.</td>
<td>Correlation and causation</td>
<td><strong>Reference statistical reading for Week 6:</strong></td>
</tr>
<tr>
<td>Comparing groups, comparing outcomes, beginning to think about evaluation outcomes.</td>
<td>Working with contingency tables (2-way tables)</td>
<td>see Canvas course site and SPSS how to books in the Canvas site.</td>
</tr>
<tr>
<td>The problem with intervening variables.</td>
<td>The basics of creating basic contingency tables and other representations of two variable analyses.</td>
<td><strong>Issues Reading for Week 6:</strong> See Canvas site.</td>
</tr>
<tr>
<td>Talking ethically about statistics</td>
<td>Working with more complicated contingency tables in SPSS.</td>
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<tr>
<td></td>
<td>Creating scatterplots and correlations.</td>
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</tr>
</tbody>
</table>

**Ethics and statistical reporting**

**Assignment 1 open.**

Assignment 1 draft due by October 16\(^{th}\) at noon (worth 10 points) assignment final version due October 24\(^{th}\), 11:59pm (worth extra 5 points)

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**In Class Group Work Credit 4 (4 points)**
### Skills
- Comparing groups using graphs and charts.
- Using visual information to advocate for change.
- The visual portrayal of data, creating graphs for multiple groups.
- The one-page graph handout for advocacy.

### Activities
- Portraying more than one variable in graphs.
- Expanding our knowledge of graph development.
- The ethics of public graph presentation. How to prepare a graph, how to talk (or write) about what the graph contains problems.
- Descriptive statistics and comparing populations.

### Preparation for Week 7
**Reference statistical reading for Week 7:**
- WG, Chapter 4
- WG, Chapter 6

**Issues Reading for Week 7:**
See Canvas site.

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**In-Class Group Work**

**Credit 5 (4 points)**
### Week 7, October 17th

<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowing the difference between a population and a sample.</td>
<td>Understanding Normal distributions</td>
<td><strong>Reference Statistical Reading for Week 8:</strong></td>
</tr>
<tr>
<td>The Methodological Foundation—If statistics don’t tell you “the truth”, what do they tell you?</td>
<td>The difference between a population and a sample</td>
<td><a href="http://onlinestatbook.com/2/logic_of_hypothesis_testing/logic_hypothesis.html">http://onlinestatbook.com/2/logic_of_hypothesis_testing/logic_hypothesis.html</a> (Chapter 11: logic of hypothesis testing)</td>
</tr>
<tr>
<td>Why you can’t report the results of statistical analysis with certainty—ethics and statistics.</td>
<td>Sampling Distributions</td>
<td><a href="http://davidmlane.com/hyperstat/logic_hypothesis.html">http://davidmlane.com/hyperstat/logic_hypothesis.html</a> (logic of hypothesis testing)</td>
</tr>
<tr>
<td>Using confidence intervals</td>
<td>Experiment</td>
<td>WG, Chapter 5</td>
</tr>
<tr>
<td>Expressing confidence in estimates</td>
<td></td>
<td>Issues Reading for Week 8:</td>
</tr>
<tr>
<td>Learning how to ask questions: how confident am I in this answer? How different are these two outcomes or groups? Does X cause Y?</td>
<td>Confidence intervals, What if you’re wrong? The margin of error</td>
<td>See Canvas site.</td>
</tr>
</tbody>
</table>

**In Class Individual Work**

Credit 1 (4 points)
## Week 8, October 24th

<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Why do we care about hypotheses? Using significance to help make decisions</td>
<td>Continuation of the notion of confidence and hypothesis testing</td>
<td>Reference Reading for Week 9: Use last week’s preparatory readings, and <a href="http://onlinestatbook.com/2/tests_of_means/testing_means.html">http://onlinestatbook.com/2/tests_of_means/testing_means.html</a> (Chapter 12: tests of means)</td>
</tr>
<tr>
<td>Hypotheses and Ethics</td>
<td>Creating confidence intervals</td>
<td>WG, Chapter 7 (t-tests)</td>
</tr>
<tr>
<td></td>
<td>Introduction to hypothesis testing, tests of significance</td>
<td>WG, Chapter 8 Chi-square tests</td>
</tr>
<tr>
<td></td>
<td>Working with data set and SPSS</td>
<td>Issues Reading for Week 9: See Canvas site.</td>
</tr>
</tbody>
</table>

Assignment 1 final version due today at 11:59pm (worth 5 extra points).

**In Class Group Work Credit 6 (4 points)**
<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests for a population mean, comparing two means,</td>
<td>What if you’re wrong? The power of a test</td>
<td>Reference Statistical Reading for Week 10:</td>
</tr>
<tr>
<td>Tests for a population proportion, comparing two proportions. Matched</td>
<td>Useful answers come from well specified questions and hypotheses</td>
<td>WG, Chapter 7 (ANOVA)</td>
</tr>
<tr>
<td>Why tests are required for ethical data use.</td>
<td>Who makes the decision about hypothesis testing results?</td>
<td>WG, Chapter 8</td>
</tr>
<tr>
<td>Inference; Concrete Statistical Methodology with Social Work</td>
<td>Presenting tests for means, proportions, and contingency tables</td>
<td><a href="http://vassarstats.net/textbook/">http://vassarstats.net/textbook/</a> (Chapter 8 on Chi-Square procedures and Chapter 14 on one way analysis of variance--ANOVA)</td>
</tr>
<tr>
<td>Work Applications ethical hypothesis testing</td>
<td>Evaluation tests for social service impacts. Ethics and evaluations.</td>
<td>Issues Reading for Week 10:</td>
</tr>
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<td></td>
<td>Working with data set and SPSS, hypothesis testing</td>
<td>See Canvas site</td>
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In Class Group Work Credit 7 (4 points).
<table>
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<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 11</th>
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</thead>
</table>
| Hypothesis tests and contingency (two-way) tables, ANOVA, Chi-Square | It’s a big World Out There; Testing Hypotheses when there are more than Two Groups | **Reference Statistical Reading for Week 11:**  
WG Chapter 10  
StatPrimer, chapter 15, regression (excellent introduction)--see Canvas  
[http://www.statsoft.com/Textbook/Multiple-Regression](http://www.statsoft.com/Textbook/Multiple-Regression) (How to find relationships between variables) |
| ANOVA, inference for Two-Way Tables--Chi-Square; Special emphasis on crosstabs, chi square tests, and further investigations | Working with data set and SPSS, hypothesis testing | **Issues Reading for Week 11:**  
See Canvas site. |

**In Class Individual Work Credit 2 (4 points).**
<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tests, ANOVA’s review.</td>
<td>Practicing Tests, ANOVA.</td>
<td>Reference Statistical Readings for Week 12:</td>
</tr>
<tr>
<td>Regression estimates</td>
<td>Working with data set and SPSS, hypothesis testing</td>
<td>Multiple regressions—see Canvas site.</td>
</tr>
<tr>
<td>Working on concrete social work problems. Did the policy work?</td>
<td>What’s the Point (estimation)?</td>
<td>OR LOOK TO LEFT FOR LINK</td>
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<tr>
<td></td>
<td>Practicing with single variable regression and with multiple variable regression probability</td>
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<td></td>
<td>Continuous and dummy variables</td>
<td>Issues Reading for Week 12</td>
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<td>See Canvas site.</td>
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</tbody>
</table>

Assignment 2 open.
Assignment 2 draft due by November 27th at noon, final version by December 8th at 11:59 pm.
(worth 29 points)

In Class Group Work Credit 8 (4 points).
<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple regression</td>
<td>Reviewing single variable regression. Working with data set and SPSS, hypothesis testing</td>
<td>Reference Statistical Reading for Week 13:</td>
</tr>
<tr>
<td></td>
<td>Practicing with multiple variable regression and with multiple variable regression probability</td>
<td><a href="http://www.statsoft.com/Textbook/Multiple-Regression">http://www.statsoft.com/Textbook/Multiple-Regression</a></td>
</tr>
<tr>
<td></td>
<td>Continuous and dummy variables</td>
<td><a href="http://www.jerrydallal.com/LHSP/logistic.htm">http://www.jerrydallal.com/LHSP/logistic.htm</a></td>
</tr>
</tbody>
</table>

**In Class Group Work Credit 9 (4 points).**
<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for Week 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistic Regressions</td>
<td>Independence, conditionality, and other problems in inferential statistics.</td>
<td>Reference Statistical Reading for Week 14: Review old references</td>
</tr>
</tbody>
</table>

Working on concrete social work problems. Did the policy work?

Practicing with single variable regression and with multiple variable regression probability

Preliminary practice with simple logistic regressions.

Working on Assignment # 3

**Issues Reading for Week 14:**

None

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**In Class Individual Credit 3 (4 points).**
<table>
<thead>
<tr>
<th>Skills</th>
<th>Activities</th>
<th>Preparation for the future</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimation and hypothesis testing in real world social work settings</td>
<td>Class project time</td>
<td>Reference Reading for the future:</td>
</tr>
<tr>
<td></td>
<td>Working on concrete social work problems. Improving Assignment # 2</td>
<td>Your choice</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Issues Reading for the future:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Your choice</td>
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</tbody>
</table>

Assignment 2 final version due December 8th at 11:59 pm (worth 14 extra points)

**In Class Group Work**

Credit 10 (4 points).