Syllabus Format

<table>
<thead>
<tr>
<th>Division:</th>
<th>Theoretical / Behavioral Foundations (TBF)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program Area:</td>
<td>Educational Evaluation and Research (EER)</td>
</tr>
<tr>
<td>Course #:</td>
<td>EER 7630</td>
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<tr>
<td>Course Title:</td>
<td>Fundamentals of Statistics</td>
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<tr>
<td>Section(s) #:</td>
<td>002 &amp; 004</td>
</tr>
<tr>
<td>Term/Year:</td>
<td>Winter 2015</td>
</tr>
<tr>
<td>Course Location:</td>
<td>Web</td>
</tr>
<tr>
<td>Instructor:</td>
<td>Akiva J. Lorenz, Ph.D. (<a href="mailto:Akiva@wayne.edu">Akiva@wayne.edu</a>)</td>
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</tbody>
</table>

Course Description:


Course Outcomes:

Upon completion of this course students will be able to do the following:

1. Distinguish between statistics and parameters
2. Identify the differences between descriptive and inferential statistics.
3. Differentiate among the scales of measurement.
4. Recognize and use summation notation.
5. Recognize and use general rules for constructing frequency distributions.
6. Classify and use measures of central tendency.
7. Classify and use measures of variability.
8. Classify and use measures of relationship.
9. Recognize and use the concepts of skew and kurtosis.
10. Recognize and use the standard normal distribution.
11. Recognize and use the concept of area under a curve.
12. Recognize and use simple linear regression.
13. Recognize and use the simple laws of probability
14. Identify and use the standard error of a statistic.
15. Recognize and use the concept of a sampling distribution of a statistic.
16. Formulate and use null and alternative hypotheses.
17. Recognize and use the concept of degrees of freedom.
18. Identify Type I and Type II errors.
19. Select and use appropriate alpha levels.
20. Recognize and use tails of a distribution.
21. Recognize and use inferential tests for single groups
22. Recognize and use inferential tests for two groups.
23. Recognize and use inferential tests for correlated groups.
24. Recognize the application of one-way and two-way analysis of variance.
25. Recognize the concepts of power.
27. Recognize and use chi-square for tests of independence.
28. Recognize and use nonparametric statistical tests with ordinal variables.

Required Text:

Course Format:
Video presentations will be posted each Wednesday morning throughout the course. There will be discussion boards set up for student input every week. You will not receive credit for utilizing them, but I highly recommend that you participate. It is important to have a place to raise questions, both to me and the other students. During weekdays, I will do my best to respond to emails within 24 hours.
Academic Dishonesty/Plagiarism:

The College of Education has a “zero tolerance” approach to plagiarism and other forms of academic dishonesty. (See Student Code of Conduct http://doso.wayne.edu/assets/student-code-of-conduct-brochure.pdf). Plagiarism includes copying material (any more than 5 consecutive words) from outside texts or presenting outside information as if it were your own by not crediting authors through citations. It can be deliberate or unintended. Specific examples of academic dishonesty, including what constitutes plagiarism, can be found in the University’s Undergraduate Bulletin (http://bulletins.wayne.edu/ubk-output/index.html) and Graduate Catalog (http://www.bulletins.wayne.edu/gbk-output/index.html) under the heading “Student Ethics.” These university policies are also included as a link on Blackboard within each course in which students are enrolled. It is every student’s responsibility to read these documents to be aware which actions are defined as plagiarism and academic dishonesty. Sanctions could include failure in the course involved, probation and expulsion, so students are advised to think carefully and thoroughly, ask for help from instructors if it is needed, and make smart decisions about their academic work.

Class Schedule:

<table>
<thead>
<tr>
<th>#</th>
<th>Date</th>
<th>Content Outline / Exams</th>
<th>Chapter Reading(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>January 14, 2015</td>
<td>Basic Mathematical Concepts</td>
<td>Chapter 1</td>
</tr>
<tr>
<td>2</td>
<td>January 21, 2015</td>
<td>Organizing and Graphing Data</td>
<td>Chapter 2</td>
</tr>
<tr>
<td>3</td>
<td>January 28, 2015</td>
<td>Describing Distributions; The Normal Distribution</td>
<td>Chapter 3, Chapter 4</td>
</tr>
<tr>
<td>4</td>
<td>February 04, 2015</td>
<td>Correlation</td>
<td>Chapter 5</td>
</tr>
<tr>
<td>5</td>
<td>February 11, 2015</td>
<td>Linear Regression</td>
<td>Chapter 6</td>
</tr>
<tr>
<td>6</td>
<td>February 18, 2015</td>
<td>Sampling <em>(Exam #1)</em></td>
<td>Chapter 7</td>
</tr>
<tr>
<td>7</td>
<td>February 25, 2015</td>
<td>Hypothesis Testing: One-Sample Case for the Mean</td>
<td>Chapter 8</td>
</tr>
<tr>
<td>8</td>
<td>March 04, 2015</td>
<td>Estimation</td>
<td>Chapter 9</td>
</tr>
<tr>
<td>9</td>
<td>March 11, 2015</td>
<td>Hypothesis Testing: Two-Sample Case for the Mean</td>
<td>Chapter 11</td>
</tr>
<tr>
<td></td>
<td>March 18, 2015</td>
<td><strong>Spring Break</strong></td>
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</table>
The above schedule and procedures are subject to change at the discretion of the instructor.

Grading System:

The three exams will consist of a combination of true/false, multiple choice, short-answer questions and calculations. Each exam covers new material learned since the last exam, meaning they are not explicitly cumulative. Rather, exams are implicitly cumulative because the information learned throughout the semester builds upon itself. Exams will be taken online (via Blackboard) and are available during the exam period specified below. Students have 3 hours to complete each test. Make-up exams will not be given for this class except under conditions of a medical emergency or religious observance. There will be new material presented during the week that the first two exams are given, and those weeks are highlighted in the class schedule.

Exam #1: February 18-24 (Chapters 1 – 5) 40 Points
Exam #2: March 25-31 (Chapters 6 – 9, 11) 40 Points
Exam #3: April 29 - May 04 (Chapters 14, 15, 16, 21, 22) 40 Points

Assignments will be given each week from exercises in the text. These will not be graded, but you are expected to do them for understanding.

Grading Scale

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Grade</th>
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<th>Grade</th>
</tr>
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<tbody>
<tr>
<td>112 – 120 Points</td>
<td>A</td>
<td>85 – 91 Points</td>
<td>B-</td>
</tr>
<tr>
<td>106 – 111 Points</td>
<td>A-</td>
<td>78 – 84 Points</td>
<td>C+</td>
</tr>
<tr>
<td>99 – 105 Points</td>
<td>B+</td>
<td>71 – 77 Points</td>
<td>C</td>
</tr>
<tr>
<td>92 – 98 Points</td>
<td>B</td>
<td>00 – 70 Points</td>
<td>F</td>
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</tbody>
</table>
Enrollment/Withdrawal Policy

Students must add classes no later than the end of the first week of classes. This includes online classes. Students may continue to drop classes (with full tuition cancellation) through the first two weeks of the term.

Students who withdraw from a course after the end of the 5th week of class will receive a grade of WP, WF, or WN.

- WP will be awarded if the student is passing the course (based on work due to date) at the time the withdrawal is requested
- WF will be awarded if the student is failing the course (based on work due to date) at the time the withdrawal is requested
- WN will be awarded if no materials have been submitted, and so there is no basis for a grade

Students must submit their withdrawal request on-line through Pipeline. The faculty member must approve the withdrawal request before it becomes final, and students should continue to attend class until they receive notification via email that the withdrawal has been approved.

Beginning the fifth week of class students are no longer allowed to drop but must withdraw from classes. The last day to withdraw will be at the end of the 10th full week of classes. The withdrawal date for courses longer or shorter than the full 15-week terms will be adjusted proportionately.

See the university webpage for full details: http://reg.wayne.edu/students/information.php

Attention Students with Disabilities:

If you have a documented disability that requires accommodations, you will need to register with Student Disability Services (SDS) for coordination of your academic accommodations. The Student Disability Services (SDS) office is located at 1600 David Adamany Undergraduate Library in the Student Academic Success Services department. SDS telephone number is 313-577-1851 or 313-202-4216 (video phone). Once you have your accommodations in place, I will be glad to meet with you privately during my office hours to discuss your special needs. Student Disability Services’ mission is to assist the university in creating an accessible community where students with disabilities have an equal opportunity to fully participate in their educational experience at Wayne State University.
Please be aware that a delay in getting SDS accommodation letters for the current semester may hinder the availability or facilitation of those accommodations in a timely manner. Therefore, it is in your best interest to get your accommodation letters as early in the semester as possible.

**Religious Observance Policy:**

Because of the extraordinary variety of religious affiliations represented in the University student body and staff, the Wayne State University calendar makes no provision for religious holidays. It is University policy, however, to respect the faith and religious obligations of the individual. Students who find that their classes or examinations involve conflicts with their religious observances are expected to notify their instructors well in advance so that alternative arrangements as suitable as possible may be worked out.

**Resources for optional inclusion in course syllabi:**

Wayne State University Writing Center:
The Writing Center (2nd floor, UGL) provides individual tutoring consultations free of charge for students at Wayne State University. While the center serves both graduate and undergraduate students, undergraduate students in General Education courses, including composition courses, receive priority for tutoring appointments. The Writing Center serves as a resource for writers, providing tutoring sessions on the range of activities in the writing process – considering the audience, analyzing the assignment or genre, brainstorming, researching, writing drafts, revising, editing, and preparing documentation. The Writing Center is not an editing or proofreading service; rather, students are guided as they engage collaboratively in the process of academic writing, from developing an idea to correctly citing sources. To make an appointment, consult the Writing Center website: [http://www.clas.wayne.edu/writing/](http://www.clas.wayne.edu/writing/).

To submit material for online tutoring, consult the Writing Center HOOT website (Hypertext One-on-One Tutoring) [http://www.clas.wayne.edu/unit-inner.asp?WebPageID=1330](http://www.clas.wayne.edu/unit-inner.asp?WebPageID=1330).