Course Number: EER 8820
Course Title: Multivariate Analysis
Credit: 4 hours
Section Number: 25367
Semester & Year: Winter 2015
Location: 112 Education Building
Class Day and Time: Monday: 1630 – 2010 hours

Instructor: Frank C. Castronova, PhD, PStat®
Office Telephone: (313) 448-1700
e-mail: ac1428@wayne.edu or fcastronova@bcbsm.com

Secretary: Sheri Martini: 577-1614
sheri.martini@wayne.edu

Course Description: Discriminant analysis, profile analysis; placement and classification problems; component and factor analysis. Supporting topics and techniques; transformation of variables, computer usage.

Required Texts:


**General Course Objectives:** It is the purpose of this course to provide experiences that will enable the student to:

1. explain natural phenomena by discovering and studying the relations among variables.
2. distinguish between univariate and multivariate methods for analyzing data.
3. recognize that multiple regression and its rationale underlies most other multivariate methods.
4. conduct analysis of data using the SPSS package.
5. interpret computer output related to multivariate analyses.
6. discuss the interpretation in writing and orally

**Course Requirements:**

1. Complete all readings
2. Examinations 90 points
3. Four projects 40 points
4. Group Project 20 points

The group project that will focus on one of the multivariate procedures discussed during the semester. Each group will consist of no more than four members. (No Exceptions)

**Evaluation and Grading:**

Grades will be assigned as follows.

<table>
<thead>
<tr>
<th>Points Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>≥186 - 200 Points</td>
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<tr>
<td>≥180 to &lt;186 Points</td>
<td>A-</td>
</tr>
<tr>
<td>≥174 to &lt;180 Points</td>
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</tr>
<tr>
<td>≥166 to &lt;174 Points</td>
<td>B</td>
</tr>
<tr>
<td>≥160 to &lt;166 Points</td>
<td>B-</td>
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<tr>
<td>≥154 to &lt;160 Points</td>
<td>C+</td>
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<tr>
<td>≥140 to &lt;154 Points</td>
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<tr>
<td>≥134 to &lt;140 Points</td>
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<tr>
<td>&lt; 134 Points</td>
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**Class Policies**

Attendance is expected for the entire semester, and for the full class session. Please notify me in advance if you are unable to attend, expect to be late or have to leave early.

**Incomplete Grade**

To be completed within one year as per University Requirements.
Plagiarism:
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. If you're in doubt about the use of a source, cite it. Students caught plagiarizing information from other sources will receive a failing grade in the course. University policy states that students can be subject to multiple sanctions, from reprimand to expulsion as a consequence of academic dishonesty. To enforce this policy, all outside references must be submitted with assignments.

Enrollment/Withdrawal Policy
Beginning in Fall 2011, 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 4th week of class will receive a grade of WP, WF, or WN.
  o WP will be awarded if the student is passing the course (based on work due to date) at the time the withdrawal is requested
  o WF will be awarded if the student is failing the course (based on work due to date) at the time the withdrawal is requested
  o 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 in Fall 2011, 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.

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 313-577-3365 (TDD only). 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.

READINGS FOR EER 8820

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<thead>
<tr>
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<th>Topic</th>
<th>Mertler Text</th>
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<td>Ch. 3</td>
<td>Ch. 4</td>
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<td>Ch. 1 &amp; 2</td>
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<td>Ch. 8</td>
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<td>Ch. 9</td>
<td>Ch. 17</td>
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<td>4/27/2014</td>
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<td>Ch. 17</td>
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Due dates for problems and examinations will be provided in advance of the actual due date

I. SELECTED BIBLIOGRAPHY AND ADDITIONAL RESOURCES
Note: Books in bold may be particularly helpful for this specific course.


Secondary Data Analysis
The following are some general resources for secondary data analysis:


Creating Tables, Graphs and Figures
The following resources provide helpful information about creating tables, graphs and other types of figures in APA style:


Table Templates from the National Council on Family Relations (word and pdf documents available):
http://oregonstate.edu/~acock/tables/

Web Sites
The following online resources may be particularly helpful:

Applied Missing Data by Enders (2010) companion site
Good resource on working with missing data. Slides that provide detailed steps for handling missing data in SPSS as well as MPLUS. http://www.appliedmissingdata.com/
UCLA Stats website
Coverage of many of basic and advanced topics, detailed examples that include annotated outputs and sample write ups. [http://www.ats.ucla.edu/stat/spss/default.htm](http://www.ats.ucla.edu/stat/spss/default.htm) and [http://www.ats.ucla.edu/stat/dae/](http://www.ats.ucla.edu/stat/dae/)

University of North Texas SPSS tutorials
[http://www.unt.edu/rss/class/Jon/SPSS_SC/](http://www.unt.edu/rss/class/Jon/SPSS_SC/)

Youtube Videos
There are a number of helpful videos on youtube that explain statistical concepts and provide examples done in SPSS and other programs.

Statistics Learning Center
[http://www.youtube.com/user/CreativeHeuristics?feature=watch](http://www.youtube.com/user/CreativeHeuristics?feature=watch)

How2Stats
[http://www.youtube.com/channel/UCr3OHuCSrwAO2KYP2CJB6zg](http://www.youtube.com/channel/UCr3OHuCSrwAO2KYP2CJB6zg)

Dr. Michael Bernstein
[http://www.youtube.com/user/bernstmj?feature=watch](http://www.youtube.com/user/bernstmj?feature=watch)

StatisticsFun
[http://www.youtube.com/user/statisticsfun?feature=watch](http://www.youtube.com/user/statisticsfun?feature=watch)

VII SAMPLE JOURNAL ARTICLES

Linear Regression


Binary Logistic Regression


Multinomial Logistic Regression


Resko, S. M. (in press). Public perception and attitude toward marijuana use among adolescents: Results of a state-
wide survey. Sage Open. (Latent class analysis and multinomial logistic regression)


Other Statistics


