



Course: Analytical Methods 85063-001; CRN 201580 (Dept. of Mktg. & Entp.)

Term: Fall 2015

Prerequisites: Enrollment in Ph.D. program
(Students without prerequisite risk being deregistered)

Class meetings: Fridays 2-5 pm

Classroom: Marketing Conference Room

Professor: César Zamudio

Telephone: 330-672-2170

E-mail: czamudi1@kent.edu **(please do not use Blackboard e-mail)**

Office: College of Business Administration 514

Office Hours: By appointment

Course website: www.cesarzamudio.com

Course description

This course teaches doctoral students the fundamentals of empirical work: data handling, statistical analysis, selection of adequate analytical methods, interpretation and communication of results. Other topics, such as planning empirical projects, article positioning, strategies to maximize the odds of article publication, and handling reviewer's notes will also be discussed.

The course is lecture-based. Assignments will be given each week and will consist mostly of empirical work, which should be conducted using the three software packages we will cover in class: Excel, SPSS, and MATLAB.

Students will also have to work on a complete original empirical work research article. This paper will be presented at the end of the course and is a major component of the course. This paper should be different from the students' current mentorship project.

Student learning objectives/outcomes

1. Learn how to handle data and conduct analysis using three major software packages: Excel, SPSS and MATLAB.
2. Understand and apply several statistical analysis techniques: regression, ANOVA, data reduction, limited dependent variable methods, and SEM.
3. Learn to correctly determine which statistical analysis method to use depending on your research objective and the data at hand.
4. Learn how to plan for the empirical research project and conduct one such project.
5. Gain insight into how to increase your chances to publish empirical work in peer-reviewed journals.

What should you expect from this class?

The professor expects the highest level of performance and responsibility from all students. You should expect the content of the course and assignments to be challenging. By the end of the semester you should be equipped to satisfactorily conduct original empirical research, and should have a draft of an empirical paper with results.

Required material

You should take notes during class and print and study the class notes before every class. The following textbooks are not mandatory, but they are good references to learn about the statistical techniques covered in class and to replicate the results from the books to ensure you're conducting your analysis correctly.

Textbook

Field, Andy. 2013. *Discovering Statistics Using IBM SPSS Statistics*. SAGE Publications. 4th. Ed. ISBN 978-1446249185. **This title is available on Amazon Kindle.**

Required software

- Microsoft Excel 2003, 2007 or 2010
- MATLAB
 - **You can obtain the student version of MATLAB online for \$99, or in the Student Center.**
- SPSS and AMOS
 - **Please make sure you send a request to Angela Doshak stating that you require SPSS and AMOS to be installed in your computer. Be sure to mention that this is for the Analytical Methods class and that it is mandatory that you have the software installed.**

Some class rules

General class rules

- Class begins on time. Be punctual.
- You are expected to attend all sessions. One absence is allowed without penalty; thereafter, subtract two points from your Participation score for each absence. Absences related to mandatory school activities or medical issues will be waived only with written and signed original documents.
- Keep your cell phone in "Silent" mode at all times.
- Class discussion should be civil. Any verbal abuse or hostility towards your classmates will not be tolerated and may result in a failing grade.
- The main method of communication will be e-mail. It is your responsibility to check the e-mail you designated as primary on a frequent basis.

Class activities and assignments

- Assignments consist of (1) a written report, and (2) code, if applicable.
- Assignments should be (1) delivered as a hard copy and (2) also sent to the instructor's email. Both the hard copy and the e-mail should contain **both** the written report and code.
- **If your code is not adequately documented, YOU WILL NOT OBTAIN ANY POINTS for your assignment. Documentation is covered in the first day of class.**
- Late assignments are not allowed, unless in pressing conditions (e.g. medical emergency) and when applicable. Consult the professor if this occurs.
- Assignments are **individual** work and should be handed in individually. However, student work in groups is encouraged to learn together.

- Please consult with the professor for tips and guidance on how to solve an assignment, should you need it.

Class Schedule

Date	Topic	Assignments/ Groupwork due
Sep 4	Course and syllabus overview, assignments and final project Guidelines on tables, charts, figures, and homeworks The Ph.D. program timeline: using backward induction to plan your Ph.D. Planning the empirical project Managerial implications and paper positioning Introduction to SPSS and MATLAB Introduction to coding, documentation and best practices	---
Sept 11	Statistics and probability review Data-Generating Processes Data Manipulation	
Sept 18	Fundamental statistical analyses: Pearson Linear Correlation, t-Tests, Chi-square tests Introduction to Regression	Assignment 1 due
Sept 25	MLE estimation in MATLAB – post-assignment discussion Regression: further issues Regression: deviations from G-M assumptions	Assignment 2 due
Oct 2	Limited Dependent Variables	Assignment 3 due
Oct 9	Road so far: selecting the right analytical method The review process Readings: Zamudio et al. (2013) draft and published article	Assignment 4 due
Oct 16	Further comments on the review process GLM and ANOVA Project report I (5-10 min)	Assignment 5 due
Oct 23	Extensions of ANOVA The review process in experimental papers I	Plan ahead: CV
Oct 30	The review process in experimental papers II Extensions of ANOVA II Cluster Analysis	Assignment 6 due
Nov 6	Scale development: some tips and tricks Exploratory Factor Analysis Qualtrics randomized blocking	Assignment 7 due
Nov 13	Structural Equation Modeling I: Fundamentals Project report II (5-10 min)	Assignment 8 due
Nov 20	Structural Equation Modeling II: Fit, common method variance Moderation and Mediation (linear)	Plan ahead: Proposals
Nov 25-29	No class – Thanksgiving break	Assignment 10 due
Dec 4	Extensions of mediation models – multichotomous and nonlinear Endogeneity	
Dec 11	Project work week	
Dec 16	Final paper due	Final paper

Grading policy

Activity	Score
Assignments	70 points
Research paper - Written	15 points
Research paper – Presentations	15 points
Total points	100 points

- Any grade dispute should be submitted in writing within one week of the assignment of the grade.
- Your letter grade will be determined based on your points grade as follows:

Points	Letter grade
100-94	A
93-90	A-
89-88	B+
87-83	B
82-80	B-
79-78	C+
77-73	C
72-70	C-
69-68	D+
67-63	D
62-60	D-
Less than 60	F

Research project

The research project consists on producing and presenting a research project. The paper should be original empirical work. Specifically, a dataset needs to be used and statistical analyses conducted. Descriptives and fundamental statistical analyses only are not acceptable: at least one of the techniques covered in the semester (regressions, ANOVA, etc.) must be applied. Consequently, conceptual or theoretical papers do not qualify for our project unless they have an empirical component.

In your paper, you must argue that you are making a valuable contribution to the Marketing or Strategy literature. If possible, you should develop a positioning table for your paper. Managerial implications are not mandatory, but in most cases a valuable contribution to either of these literatures will go in tandem with such implications.

There is not a specific page length requirement. The paper should be structured in a way similar to this:

- *Title page*: The title page should include the article title, your name, affiliation, e-mail, and date. Optionally, mention your target journal. Be creative and thoughtful when crafting your research title. Empirical research shows that a great title does not increase the odds of publishing, but it will certainly help you gain confidence in your project.
- *Abstract*: Have another page with the title of your work (again) and a 150-200 word abstract. Also, below the abstract, select keywords to best describe your research. These

- keywords should be based on keywords used by other papers cited in your article if possible.
- *Introduction*: Make a case that your paper is interesting. Make sure that by the end of the second page you clearly state what your contribution to the literature is, and why is it important.
 - *Literature review/research background*: Discuss previous literature and, if applicable, the industry setting. If you have a positioning table, it should go here.
 - *Model*: Discuss the statistical analysis method you are using in detail. Also, discuss any special assumptions you are making.
 - *Data*: Present your data with descriptives: a table with mean/min/max/st.deviation, and graphics whenever appropriate.
 - *Results*: Adequately present the results of your statistical analysis. Do not make a lengthy discussion on the implications in this section.
 - *Discussion/Managerial implications/Conclusion*: Depending on the paper you wrote, you may want to have any one of the three sections listed above. A discussion section focuses on managerial and theoretical implications. Limitations should also go here. You may want to have a separate managerial implications section if these are very strong. All papers must have a conclusion section where you summarize your work and point at future research directions.
 - *References*: Full references section. You may follow any citation standard (e.g. APA).
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ACADEMIC HONESTY:

Cheating means to misrepresent the source, nature, or other conditions of your academic work (e.g., tests, papers, projects, assignments) so as to get undeserved credit. In addition, it is considered to be cheating when one cooperates with someone else in any such misrepresentation. The use of the intellectual property of others without giving them appropriate credit is a serious academic offense. It is the University's policy that cheating or plagiarism result in receiving a failing grade for either the work or the course. Repeat offenses may result in dismissal from the University.

ACADEMIC HONESTY AND GROUPWORK:

All group members are responsible for the accuracy and integrity of work turned in by the group regardless of which member actually produced it. Groups, as they plan their work, should budget sufficient time for a thorough review by the team members before submitting an assignment. Plagiarism on a group assignment will impact the grade of all members of the group.

STUDENTS WITH DISABILITIES:

University policy 3342-3-01.3 requires that students with disabilities be provided reasonable accommodations to ensure their equal access to course content. If you have a documented disability and require accommodations, please contact the instructor at the beginning of the semester to make arrangements for necessary classroom adjustments. Please note, you must first verify your eligibility for these accommodations through Student Accessibility Services (contact 330-672-3391 or visit <http://www.kent.edu/sas> for more information on registration procedures).

ENROLLMENT REQUIREMENTS:

Students have the responsibility to ensure they are properly enrolled in classes. You are advised to review your official class schedule (using Student Tools on FlashLine) during the first week of the semester to ensure you are properly enrolled in this class and section. Should you find an error in your class schedule, you have until [date will be provided by the Assistant Dean in

advance] to correct the error. If registration errors are not corrected by this date and you continue to attend and participate in classes for which you are not officially enrolled, you are advised now that you will not receive a grade at the conclusion of the semester for any class in which you are not properly registered.

GRADUATION INFORMATION:

If you are eligible to graduate, it is your responsibility to apply for graduation before the set deadline (May Graduation: Apply before September 15th; August Graduation: Apply before December 15th December Graduation: Apply before March 15th) If you apply after the deadline you will be assessed a \$200 late fee. Please see your academic advisor as soon as possible if you are uncertain as to your progress toward graduation. To apply for graduation complete the following steps: Log onto your Flashline account (1) Click on the Student Tools tab (2) Look in the Graduation Planning Tool Box (3) Click on Application for Graduation If an error message appears, you must contact your advisor.

COURSE WITHDRAWAL DEADLINE:

Please note that the last day to drop this class is Sunday, November 7, 2013.