



UNC CHARLOTTE

BELK COLLEGE *of* BUSINESS

MKTG 3228

Marketing Analytics (MA)

Semester: Fall 2019
Time: Tue. & Thur. 8:30am – 9:15pm (Session 001)
Tue. & Thur. 10:00am – 11:15pm (Session 002)
Room: @ Friday Building 280
Course Website: Canvas (canvas.uncc.edu)
Instructor: Prof. Angela Xia Liu (<https://belkcollege.uncc.edu/directory/angela-xia-liu>)
Office: Friday Building 346A
Office Hours: Tue. & Thur. 11:15am – 12:15am (Friday 346A) and by appointment
(*In most cases, the best time to talk to me would be right after each class.*)
E-mail: xliu44@uncc.edu
Phone: (704) 687-1794

Course Description:

This course is an introductory analytics course for students interested in cutting-edge techniques for marketing decision modeling and business research. It focuses on helping students develop quantitative analytical skills valuable for a wide range of business fields, especially on marketing strategies and tactics. As with the with new developments of information technology and advancements in analytical tools, the marketing profession is witnessing a shift away from intuitive decision making to data-analytics based decisions. Companies are increasingly competing on analytics and are in need for people with both managerial expertise and analytical skills. This course intends to help students develop these skills. It covers a variety of analytical models and focuses on their applications to real-world marketing decision problems.

This course is designed to help students move from qualitative marketing to quantitative marketing, at the same time, it is also designed for students who have already acquired basic data analytics skills. It not only introduces students to a variety of marketing decision models, but also teaches them how to estimate these models using statistical software (STATA) and how to apply them for decision recommendations. Specifically, this course will introduce a variety of quantitative models to improve marketing

decision making in such areas as market response, customer segmentation, customer targeting, brand positioning, as well as pricing and promotion decisions.

Course Objectives:

This is a hands-on and application-orientated course embracing the principle of *learning by doing*. Each analytic model that we cover has software (Stata) implementation, and a problem/case whose resolution can be enhanced through the use of data. Statistical tools covered in the class will range from simple data analysis and visualization, to advanced methods such as non-linear regressions, choice model, and mining of ‘unstructured’ data. Our emphasis will be on applications and interpretation of the results for making business/policy decisions. To master each major tools introduced in this course, students should go through a four-stage problem solving process: analyzing the business problem, selecting and estimating relevant models, interpreting estimation results, and making decision recommendations. To master this four-stage problem solving process, students are expected to struggle at times. Notably, a major requirement is that students apply marketing analytics techniques to their group project to solve typical marketing problems of their own choice. The semester-long project is intended to train students for the four-stage process of problem solving.

Regardless of your prior background, focus of this course should be on by benchmarking your own progress. In particular, you will get most of this class by focusing on (a) removing your fears (if any) of data analysis, (b) enhancing your toolkits, and (c) (most importantly) internalizing the broad analytical intuition.

Changes to the Syllabus

The standards and requirements set forth in this syllabus may be modified at any time by the course instructor. Notice of such changes will be by announcement in class or by email notice.

Prerequisites:

An introductory class in statistics/regression and working knowledge of MS Excel. Experience in any form of computer programming is always a plus but not required. However, the single most important prerequisite for the class is a positive attitude towards learning.

Textbooks & References:

You are not required to buy any textbook. All the class materials will be provided through our Canvas course website. For those who want to go deeper in learning, the following books are recommended as reference books.

Hair, Joseph, F. Jr., William C. Black, Barry J. Babin, and Rolph E. Anderson (2010), *Multivariate Data Analysis*, 7th Edition, Prentice Hall.

Lilien, Gary L. and Arvind Rangaswamy (2004), *Marketing Engineering: Computer-Assisted Marketing Analysis and Planning*, Revised Second Edition, Trafford Publishing.

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Software:

A number of statistical packages have built in capacities to execute statistical procedures we need (and do so efficiently on large datasets): SAS, SPSS, STATA, R, Minitab, and so forth. In my own research I tend to use STATA (for data cleaning and analysis), and MATLAB (for graphics and advanced models—not required for most business applications you will encounter). I will mainly use STATA in this course for instruction, however, if you want to use alternative software that you are more familiar with, I am open to it (but you need to consider the possible limited help from me if you use software that I am not familiar with).

Academic Integrity:

The UNC Charlotte Academic Integrity Policy will be followed. The student is responsible for reading and understanding the policy:

Students have the responsibility to know and observe the requirements of The UNC Charlotte Code of Student Academic Integrity. This code forbids cheating, fabrication or falsification of information, multiple submissions of academic work, plagiarism, abuse of academic materials, and complicity in academic dishonesty. Any special requirements or permission regarding academic integrity in this course will be stated by the instructor, and are binding on the students. Academic evaluations in this course include a judgment that the student's work is free from academic dishonesty of any type, and grades in this course therefore should be and will be adversely affected by academic dishonesty. Students who violate the code can be expelled from UNC Charlotte. The normal penalty for a first offense is zero credit on the work involving dishonesty and further substantial reduction of the course grade. In almost all cases the course grade is reduced to F. Copies of the code can be obtained from the Dean of

Students Office. Standards of academic integrity will be enforced in this course. Students are expected to report cases of academic dishonesty to the course instructor.

The following is a summary of the Code as it applies to Academic matters:

Student Academic Violations. *It is dishonest and a violation of student academic integrity if you:*

1. **Plagiarize** – You commit plagiarism by taking someone else’s ideas, words or other types of product and presenting them as your own. You can avoid plagiarism by using proper methods of documentation and acknowledgement.
2. **Cheat on an examination** – You must not receive or provide any unauthorized assistance on an examination. During an examination you may use only material authorized by the faculty.
3. **Copy or collaborate on assignments without permission** – It is dishonest to collaborate with others when completing graded assignments or tests, writing papers or reports and completing problem sets.
4. **Fabricate or falsify data or records** – It is dishonest to fabricate or falsify data in laboratory experiments, research papers, reports or other circumstances; fabricate source material in a bibliography or “works cited” list; or provide false information on a resume or other document in connection with academic efforts. It is also dishonest to take data developed by someone else and present them as your own. Signing the class attendance sheet for anyone other than oneself is prohibited.
5. **Engage in other forms of deceit or dishonesty that violate the spirit of the Code.**

If you have any questions regarding the definition of allowable behavior, it is your responsibility to ask for clarification prior to engaging in the collaboration.

VeriCite:

As a condition of taking this course, all required papers may be subject to submission for textual similarity review to VeriCite for the detection of plagiarism. All submitted papers will be included as source documents in the VeriCite reference database solely for the purpose of detecting plagiarism of such papers. No student papers will be submitted to VeriCite without a student’s written consent and permission. If a student does not provide such written consent and permission, the instructor may: (i) require a short reflection paper on research methodology; (ii) require a draft bibliography prior to submission of the final paper; or (iii) require the cover page and first cited page of each reference source to be photocopied and submitted with the final paper.

I strongly suggest that you use the Writing Resource Center to help you with anything

on writing (ucc.mywconline.com).

Belk College of Business Statement of Diversity:

The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes. Diversity is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

Disability:

UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from Disability Services early in the semester. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 or visit their office at Fretwell 230.

Grading:

Exercise	25%
Attendance	5%
Final In-class Quiz	20%
Team Project	50%
<i>Proposal Presentation</i>	10%
<i>Final Presentation +Report</i>	40%

Exercise (25%): There will be multiple exercises throughout the semester. You are expected to do most of the exercise work in class. In each exercise, students are expected to solve specific marketing analytics problems relevant to corresponding lectures.

- Using the STATA (or SPSS program) is a great way to acquire analytical skills. These exercises will be designed to familiarize you with this popular and powerful statistical software. The instructor will provide hands-on sessions to help students learn how to use STATA.

- You can access STATA on Citrix (citrix.uncc.edu) or Apporto (uncc.apporto.com). You might have to pay extra money in order to get it installed on your personal computer.

Class Participation (5%): You are expected to attend all lectures and actively participate in class discussions. Class participation (both quality and frequency) accounts for **5%** of your final course grade, and is used to reward students for positively contributing to the class learning environment. Different forms of participation will be discussed in class. Attendance will be taken and accounts for *half* of your class

participation grade. If you miss two lecture (without a valid, documented, university-approved excuse), you will lose all the participation scores. Arriving late interferes with other students' learning and is not acceptable. It is each student's responsibility to plan carefully to arrive on time and well prepared. Late students may be counted absent or locked out and repeated latecomers will be penalized.

Final In-class Quiz (20%): The Quiz are in-class for 75 minutes. The exams will cover short exercises pertaining to each topic covered and will be similar in spirit to the case studies/exercises covered in the class. The exams are open book, open notes, open internet. Be responsible and do not take medicine that will impair your performance on a test the night before the test. There will be no make-up quiz for any reason.

Team Project (50%): This is a group project comprising two parts—proposal presentation and a final presentation plus written report. You need to make up a team who will jointly work on it. Each team will be composed of roughly 4 members. This project will help you apply what you have learned in the class to real, complex business situations.

There are four important stages in this team project.

- First, you will have an opportunity to find your team members and explore potential topics for your team project. You want to determine your topic well ahead of your proposal presentation.
- Second, your team needs to present a proposal to the entire class. Be prepared to deal with questions and criticisms from your classmates and me. My formal feedback will be provided afterwards. What should be included in the proposal presentation will vary project to project. Generally, you want to determine what object (i.e., brand or organization) and topic (e.g., target market identification, social media campaign) you want to work on. You also need to describe your data and analysis models as much as possible. You should email an electronic file of your PowerPoint slides to me before your presentation. Your work will be graded based on content quality and presentation performance.
- Third, after conducting data analysis, your team will present the results to the entire class. Be prepared to deal with questions and criticisms from your classmates as in your earlier proposal presentation. Again, you should email an electronic file of your PowerPoint slides to the instructor before your presentation.
- Lastly, based on the discussion during your final presentation, your team is expected to make significant changes with follow-up analyses before completing a final written report.

Turning in Group Projects: All written projects and assignments should be submitted electronically via the email on the due date. Late electronic submissions will be subject to a *penalty of 1%* of the corresponding total score *per minute*. You should also turn in

a hardcopy of your assignment at the beginning of class on the due date. For group assignments or projects, please turn in only one copy per group.

Grading and Re-grading: If you feel you need a re-grade on an assignment or exam, you may submit a written request documenting why you believe your work merits more points. That request, along with your assignment or exam, must be turned in to the instructor within 3 days after the assignment has been returned. Requests submitted after the 3-day interval will not be considered. You may not change anything on your returned assignment or exam. (*We randomly photocopy half of students' exams for our records before returning them. Any student who alters his or her answers on any returned exam/quiz and then asks for re-grade of the altered answers will receive a failing grade and be brought to further disciplinary actions of the University*). Also keep in mind that a re-grade may raise or lower your original score as the entire assignment/exam is re-graded. To be fair to others, I will respond to emotional appeals.

“Free Rider” Problem: In the business world you live and die by the results of your team as a whole. I prefer to give a single grade to all members of a group, but understand that there might be “outlier” behavior by particular group members. When handing in the final project report, you will also hand in a peer evaluation form rating the contribution of each team member. Please be fair when rating others. Since a significant proportion of your grade depends on group work, the peer evaluations would be taken very seriously. If there appears to be consensus that one group member did not pull his or her weight (or alternatively, that one member was crucial to the team’s success), I will adjust an individual’s project/group assignment scores up or down according to the peer evaluations. Please be fair in rating others. A non-contributing team member will receive zero point and will not be given any opportunity to make up for any team assignments. A copy of the peer evaluation form is attached and will also be put on Blackboard.

Feedback: It is my goal to make this an excellent course. If at any time you feel that the course is not meeting your expectations or you want to provide feedback on how the course is progressing, please contact me, and I will do my best to address your concerns.

Grade Breakdown:

The final course grade will be determined by your total score based on all the class activities above. Your course grade will be assigned according to the following table. Once the course grades are released, requests without clear evidence for a change would be denied.

A (90.0% – 100.0%); B (80.0% – 89.9%);
C (70.0% – 79.9%); D (60.0% – 69.9%); F (0.0% – 59.9%)

Tentative Teaching Schedule:

- This is a loose and tentative schedule and the instructor reserves the right to change it according to course development and student progress.

Week	Date	Topic
1	2019/8/20	Course Intro
	2019/8/22	Strategic Thinking & Marketing Analytics
2	2019/8/27	Known Your Data
	2019/8/29	Marketing Metrics
3	2019/9/3	Stata on Citrix
	2019/9/5	Stata Intorduction: Summary Statistics and Data visualization (Project Team Makeup)
4	2019/9/10	Market Segmentation
	2019/9/12	Market Segmentation: Cluster Analysis
5	2019/9/17	Product Positioning: Perceptual Mapping
	2019/9/19	Linear Regression I: Least squares
6	2019/9/24	Linear Regression II: Multiple linear regression + Inference
	2019/9/26	Linear Regression III: Nonlinearities + transformations
7	2019/10/1	Project Proposal Presentations
	2019/10/3	Project Proposal Presentations
8	2019/10/8	Student Recess - No Classes
	2019/10/10	Market Response Models: Applications
9	2019/10/15	Customer Value: Choice Models
	2019/10/17	Logit & Probit
10	2019/10/22	Logit & Probit: Application
	2019/10/24	Multinomial Logit Model (MNL)
11	2019/10/29	MNL: application
	2019/10/31	Regression Model for Count Data
12	2019/11/5	Poisson/NBD model
	2019/11/7	Count Data: Applications
13	2019/11/12	Text Mining and Sentiment Analysis
	2019/11/14	Machine Learning in Marketing
14	2019/11/19	Project Presentations
	2019/11/21	Project Presentations
15	2019/11/26	Exam
	2019/11/28	Happy Thanksgiving! (No Class)
16	2019/12/3	Group Project [Self-Study Week Session*]
	2019/12/5	No Class

* This “Self-Study Week Session” can take place in another week depending on how this course progresses.

** During the final exam period, you should submit your project team report instead of taking a usual final exam.

Other requirements and information:

REQUIRED TIME COMMITMENT: This class will require a significant amount of time from each student. Simply showing up for class will not do, as it will penalize all other students and no doubt be reflected in the final project. If you think you will have difficulty meeting the time commitment, please drop the class.

WITHDRAWALS: Students are expected to complete all courses for which they are registered at the close of the add/drop period. If you are concerned about your ability to succeed in this course, it is important to make an appointment to speak with me as soon as possible. The University policy on withdrawal allows students only a limited number of opportunities available to withdraw from courses. It is important for you to understand the financial and academic consequences that may result from course withdrawal.

EXPECTATIONS – PROFESSIONAL STANDARDS OF CONDUCT:

Students are expected to conduct themselves at all times in a professional manner. Professional behavior includes, but is not limited to, the following:

In the classroom

- **Attendance:** Students are expected to attend each class session. Students should never register for courses scheduled in conflict with one another. Please display your name card in class at all times.
- **Punctuality:** Students are expected to arrive and be seated prior to the start of each class session.
- **Behavior:** Classroom interaction will be conducted in a spirited manner but always displaying professional courtesy and personal respect.
- **Preparation:** Students are expected to complete the readings, case preparations and other assignments before class and be prepared to actively participate in class discussion.
- **Distractions:**
 - *Exiting and Entering:* Students are expected to remain in the classroom for the duration of the class session unless an urgent need arises or prior arrangements have been made with the professor.
 - *Laptop/Tablet Computer, Cellular phone, and Other Electronic Device Usage:* The use of cell phones, smart phones, or other mobile communication devices is disruptive, and is therefore prohibited during class. Except in emergencies, those using such devices must leave the classroom for the remainder of the class period. Students are permitted to use computers during class for note-taking and other class-related work only. Those using computers during class for work not related to that class must leave the classroom for the remainder of the class period.

Medical Excuses. Excuses for class absences for medical reasons will be given only if such absences are advised by a health care provider at the Health Center, based on clinical findings and prescribed treatment recommendations. Excused notes will not be given solely to confirm a visit to the Health Center.