California State University, Long Beach
College of Business

Standard Course Outline
MKTG 675 Seminar in Marketing Analytics

I.   General Information

Course number: MKTG 675
Title: Seminar in Marketing Analytics
Units: 3 credits
Prerequisite: MKTG 500
Course Coordinator: Reo Song
Date Prepared: September 2015
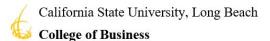Revised: October 2020

II.   Catalog Description

Marketing Analytics is a scientific approach that connects customer data and competitive information to drive strategic decision making in modern enterprises. The course explores customer data analysis techniques and their theoretical foundations that are applied to real world business problems. The ethical implications related to collecting and utilizing customer data are examined. Letter grade only (A-F).

III.   Curriculum Justification

Marketing analytics increasingly plays an essential role in business decision making with heightened demand for data analysis skills in this age of Big Data. The exponential growth and availability of *data*, both structured and unstructured, has spawned many challenges that include analysis, data curation, aggregation and data management, storage, transfer, data destruction, visualization, and information privacy.

IV.   Course Objectives

- **Customer data analysis:** Students will learn and implement the various steps needed to obtain insights from customer data analysis. These steps include defining research questions, collecting and manipulating relevant customer data, conducting appropriate analyses, and interpreting analytic results.
- **Theories on statistical analysis of customer data**: Students will learn the underlying statistical and customer theories to apply a proper analysis method to given research questions and types of customer data.
- **Critical thinking**: Student will develop the ability to critically evaluate business situations, to tackle the research problem, and to determine the most appropriate analytical method.
- **Strategic thinking**: Students will demonstrate how to gain insight from the analysis of data and to recommend a proper business strategy based on empirical evidence.

- **Data analysis software:** Students will learn a statistical software package appropriate to handle customer data such as Stata, R, SAS, Matlab, and SPSS.

V.   Outline of Topics

The topics listed below must be included in the course. Additional topics can be added into the course based on the instructor's personal preferences in teaching this course.

1. Introduction to marketing analytics, predictive analytics, and "Big Data"
2. Basics of a statistical software package: How to import, clean, and manipulate data for analysis
3. Linear regression for prediction
4. Logit: Segmentation and targeting through customer choice analysis
5. Time series analysis for forecasting: Autoregressive model and/or exponential smoothing
6. Information privacy and related ethical issues/implications

The following topics can be added (not limited to these):

- Prediction study design
- Social media analytics: Text mining and sentiment analysis
- Machine learning: Decision trees, Bagging, Random forests, Boosting, Regularized regression, Cluster analysis, etc.
- A/B testing: Hypothesis testing
- Price elasticity and pricing strategy
- Customer lifetime value (CLV)
- New product analytics: Conjoint analysis

VI.   Methods of Instruction

A. INSTRUCTION MODE

May refer to University policies [Academic Technology and the Mode of Instruction (PS 03-11)](#) and [Course Syllabi and Standard Course Outlines (PS 11-07)](#), for descriptions of modes of instruction and for guidelines for non-traditional modes of instruction.

This course can be offered in the following instruction modes, with the approval of the department chair, and subject to program requirements and college guidelines:

- Face-to-Face – Yes
- Hybrid – Yes
- Online Synchronous – Yes
- Online Asynchronous – Yes

B. CLASSROOM ACTIVITIES

The course should include the following components:

1. In-class data analysis exercises

2. **Case analysis assignments with real world data**: Case writing to recommend a proper course of action based on analytic results

3. **Course group project:** Define business problem, collect and clean data, conduct a statistical analysis, and recommend a course of action. A group presentation should be required. Data analysis project with a client can be accommodated as this group project. Project requirements include:

   a. The primary data should be large scale secondary data with sample size of N > 300.
   b. Regression-based methods should be included (e.g., linear regression, logit, time series analysis).
   c. Statistical models can be developed for descriptive (describe some phenomenon) and/or predictive (predict behaviors or events) purposes.
   d. Training vs. test data approach should be used for forecasting.

4. **Examinations:** Should include questions that use a software package to analyze data. Formats should require students to demonstrate critical thinking and application/problem solving skills. Multiple choice exams are not allowed.

C. EXTENT AND NATURE OF TECHNOLOGY USE

The use of technology will depend on individual instructors, but may include BeachBoard, should include the development of familiarity with web resources specific to the course, and may include assignments that involve the evaluation of web materials on the subjects. Students may be made familiar, if they are not already, with relevant search databases in the library. Film and video may be used in the classroom.

VII.   Information about Textbooks/Readings

There is no standardized textbook. The following (free) textbook can be recommended as a reference:

- *OpenIntro Statistics* 3e

The following articles are suggested as an introduction:

- "Big Data: The Management Revolution," Andrew McAfee and Erik Brynjolfsson, Harvard Business Review 2012
- "Keep Up with Your Quants," by Thomas H. Davenport, Harvard Business Review 2013
- "Data Scientist: The Sexiest Job of the 21st Century," Thomas H. Davenport and D.J. Patil, Harvard Business Review 2012
- "Making Advanced Analytics Work for You," Dominic Barton and David Court, Harvard Business Review 2012
- "Marketing As Strategy: Understanding the CEO's Agenda for Driving Growth and Innovation," Nirmalya Kumar, Harvard Business Press 2004
- "Should You Sell Your Digital Privacy?" John Deighton, Harvard Business Review 2003
- "When Folly Is Forever," Adam Keiper, Wall Street Journal 2009

The following sources provide many useful analytics cases with business data:

- Darden Business Publishing, University of Virginia

- [Harvard Business School Publishing](#)
- [Ross School of Business](#), Global Lens, University of Michigan
- [INSEAD Case Publishing](#)
- [Ivey Cases](#), Western University
- [Kellogg Case Publishing](#), Northwestern University:
- [Stanford Graduate School of Business](#)

VIII.   Instructional Policies

A. Policy on Classroom Behavior

- All cell phones & other electronic devices (e.g. pagers, iPads, iPods, PDAs) must be put on vibrate or turned off and not on your desk during class.
- Students are responsible for what transpired if they miss a class. It is the student's responsibility to contact the instructor or a classmate to determine what was missed. See "Policy on Make-up Exam and Assignments" below.
- Talking and other disruptive behavior are not permitted while classes are in session.
- Students are expected and must do *original* work for all assignments, including exams. See "Academic Integrity" policy below.
- It is the student's responsibility to notify the professor in advance of a need for accommodation of a disability that has been verified by the University.
- See also [Department of Marketing Classroom and Online Conduct Policies](#)

D. Policy on Make-up Exams and Assignments

The instructor develops his or her own policy.

E. Policies on Withdrawal, Late Withdrawals, and Incompletes

The University policy on dropping and withdrawal from classes is set forth in the schedule of classes. Students are obligated to officially withdraw from their courses even though they may not have attended. Withdrawals require the signature of the instructor, the chairperson, and the Dean of the College of Business.

F. Academic Integrity

- Students are expected to do original work for all assignments, including exams.
- Students are responsible for their own conduct and all cases of dishonesty (e.g., plagiarism, cheating) will be reported to the proper university officials.
- Students are expected to adhere to [College of Business policies regarding academic integrity](#) as well as [Academic Senate Policy on Integrity Regarding Cheating and Plagiarism](#).

G. Campus Computer/Network Usage

Careful and ethical use of computing resources is the responsibility of every user. As a user of these resources, you agree to be subject to the guidelines of the [Policy Statement 96-18 Computing Resources, Access to and use of CSULB](#). These guidelines apply to all computing resources provided by the University; some guidelines are more directly related to time-sharing systems, some to microcomputers and local area networks, and some to all systems.

IX.   Course Assessment and Grading

Final course grades shall be based on at least three (3), and preferably four (4) or more, demonstrations of competence by the student. In no case shall the grade on any single demonstration of competence count for more than one-third (33%) of the final course grade. See PS 12-03 Final Course Grades, Grading Procedures, and Final Assessments.

X.   Disabilities

The Bob Murphy Access Center (BMAC) provides certification for students with disabilities and helps arrange relevant accommodations. Any student requesting academic accommodations based on a disability is strongly encouraged to register with Disabled Student Services (BMAC) each semester. A letter of verification for approved accommodations can be obtained from BMAC. Please be sure to provide your instructor with BMAC verification of accommodations as early in the semester as possible. The phone number for BMAC is (562) 985 5401. The email address is: bmac@csulb.edu.

XI.   Assistive Technology

In compliance with university policy on Accessibility and Faculty Responsibility for the Selection of Instructional Materials, instructors are responsible for ensuring that their syllabi and instructional materials are accessible to all students.

XII.   Consistency of SCO Standards across Sections

All future syllabi will conform to the SCO. The course coordinator should review the SCO and offer advice and/or materials to faculty member new to teaching the course. The course coordinator may offer or require regular review of instructors' course materials as well as anonymous samples of student work.

XIII.   **Additional Resources for Development of Syllabi**