

Case Western Reserve University
The Weatherhead School of Management
MKMR 310, Fall 2012: TTh 2.45-4.00pm



Marketing Analytics

Instructor: Jagdip Singh Office Hours: After class, Tuesday/Thursday, or by appt.
Course Assistant: Mai Trinh (mpt20)
Co-Instructors: Elisabeth Smith, Eric Leopold, Chris Linderwell, Matt Pedone and Joulia Shuk
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Course Objective

Develop skills for analyzing marketing data for making intelligent decisions about marketing investments that create value and build competitive advantage. In short, build capabilities for marketing **ai**—**a**nalytics **f**or **i**nsights. This course is not about memorizing or programming, but about concepts and tools for understanding marketing data, and analyzing it for insights.

You might be asking, “If I am going to be a marketing professional, do I need hard analytical skills?” The answer: “Absolutely, yes.” The divide between soft and hard areas of marketing is a myth. In a digital age, marketing professionals have to be good at both to be taken seriously.

“Do you have to be a math or statistics wiz to be good at marketing analytics?” Answer: “No.” Analytics do involve knowledge of basic statistics, math and commercial software (EXCEL & SPSS). At its core, analytics rely on your powers of understanding marketing problems, matching problems to appropriate analytical procedures, and extracting insights from the results obtained.

This course should get you in the habit of asking, “What is the problem in this situation, as different from its symptoms?,” “What data do I need to solve the problem?” and “What are the appropriate analyses for these data to draw insights?” The course will build skills for answering these questions.

ROSETTA PARTNERSHIP

This course is developed, and will be delivered in partnership with Rosetta (<http://www.rosetta.com/>), an interactive consulting company committed to transforming marketing for the connected world. The purpose of this partnership is to:

- Enrich student learning by connecting analytical theory with real-world problem solving.
- Build skills for analytics driven insights that are relevant for tomorrow’s marketplace.
- Create an energizing student experience by a distinctive model of academic-industry collaboration.

To achieve these purposes, the course content and assignments are designed to (a) enable student learning by building **ai** skills using real-world problems and data, and (b) emphasize analytical tools and software that build students' **ai** competence giving them a competitive advantage for a range of marketing jobs. Several sessions are dedicated to analytics driven insights for digital marketing data, an area where Rosetta is particularly strong.

COURSE FORMAT:

Before Each Class

- Read/Review assigned materials. Be prepared to ask questions and get clarifications.
- Review feedback on your assignment. See where you did well, and where you can improve. Bring your questions to class.
- If it is a Tuesday class and you have been asked by the instructor to make a class presentation, take the time to develop and sharpen your presentation skills. Present professionally.
- If it is a Thursday class, think Quiz. Be prepared.

Beginning of & During Each Class

- Be on time for class. Miss class only in extreme circumstances. Inform instructor in advance. Never miss submitting or doing your assigned work as required per class schedule.
- Be ready to show you are prepared. Ask questions. Pay attention.
- Assignments due that week will be discussed. It is your responsibility to note deadlines and obtain clarifications for completing the assignment.
- Be engaged. Think how you can use the concepts and tools for real life problems.

After Each Class

- Review material covered in class. Note questions, concepts or steps you don't get. Clarify in the next class.
- If it is a Tuesday, review the analytics tutorial slides for the Thursday class. Attempt at reproducing the results. Also attempt the assigned homework and/or extra practice assignment.
- If it is a Thursday, make a plan for timely submission of assignment due Saturday.

COURSE COMPONENTS & PLAN:

Once the class gets rolling, the course plan typically involves the following weekly structure:

TUESDAY — Analytical Concepts and Theory

- Lecture and discussion: focus on assigned readings and analytical approaches

THURSDAY — Analytical Applications

- Analytical Assignment: application of analytics for solving assigned marketing problems
- Impromptu Quiz: brief quiz based on the material covered in the previous & current week.

Text, Software, Cases and Readings

Text: No textbook is assigned. Instead, links to readings and videos are provided for each session. All are free. You are expected to thoroughly read and review the assigned materials *before* each class.

Required Software: SPSS 20 & Excel. You are *required* to download & install from Case Software Center the latest version of SPSS on your own personal computer (cost: \$66). Also, you are expected to have the latest version of EXCEL installed on your personal computer. Both are **essential** for the course. Software should be installed and ready by August 30.

IBM© SPSS Analytics Certification (ACE)

This course prepares you toward sitting in a SPSS certification exam sponsored by IBM. This certification is not a course requirement, but is recommended for students seeking jobs with some analytical component. By itself, this course is not sufficient preparation for this certification exam. Students are advised to take one or more SPSS-based courses that build their skills before sitting for the certification exam. Discuss options with the instructor. Weatherhead, as an ACE participant, offers a reduced fee to students taking the certification exam. See the instructor, and <http://www-03.ibm.com/certify/certs/47100101.shtml> for more details.

Pre-requisites and Prepping for the Course

Understanding of basic statistics (as usually covered in the core statistics course), a good work ethic, and a positive learning attitude are keys to strong course performance.

Some prepping suggestions:

1. Review material you covered in the undergraduate statistics course. Online materials are available, usually free, for this purpose (e.g., <http://davidmlane.com/hyperstat/>).
2. Familiarize yourself with the SPSS statistical software. SPSS has a useful tutorial (under the “Help” tab in the main data screen). Many online resources are available, and you can download a free “guidebook” by visiting <http://www.spsstools.net/> (use the link under “purposes”).

Attendance and Conduct Policy: You are responsible for attending all sessions. In case you have to miss a class for unavoidable reasons, inform the instructor in advance. Absence is excused only under extreme circumstances. No more than 2 excused absences will be permitted. Even for excused absences, the student will be responsible for making up for the absences. There will be no make-ups for quizzes. Each student is responsible for proper conduct. Student behavior deemed to be discreditable as determined by the instructor may result in a reduction of grade for the assignment/s involved or for the course as a whole or both. In short: “Do your work with diligence.”

Academic Responsibility. All students in this course are expected to adhere to university standards of academic integrity. Cheating, plagiarism, and other forms of academic dishonesty will not be tolerated.

This includes, but is not limited to: consulting with another person during an exam, turning in written work that was prepared by someone other than you, and making minor modifications to the work of someone else and turning it in as your own. *Unless properly referenced or quoted, submitted work is assumed to be original contribution of the student.* Ignorance will not be permitted as an excuse. If you are not sure whether something you plan to submit would be considered either cheating or plagiarism, it is your responsibility to ask for clarification. When your name appears on an assignment, you are responsible for the integrity of the work, even if you did not personally write the offending material. Information on citations and plagiarism can be found on the following web sites: <http://library.case.edu/ksl/researchtools/citation/index.html> and <http://www.indiana.edu/~wts/pamphlets/plagiarism.shtml>. The Weatherhead Academic Integrity policy can be found at <http://bulletin.case.edu/weatherheadschoolormanagement/policies/#academicintegritypolicytext>.

Evaluation, Grading and Conduct

Analytics Exercises (10 in all)	
Team exercises (Ex#1 to Ex#3)	5%
Individual Exercises (Ex#4 to Ex#10).....	25%
Exams (3 in all; differentially weighted as noted below).....	45%
Exam I: 15%	
Exam II: 30%	
Exam III: 55%	
In Class Quizzes.....	15%
Class Preparedness, Participation & Attendance	10%
Total.....	100%

<i>Bonus points for Presentation*</i>	10%

*For each exercise, two or more students will be invited to make a class presentation based on the quality of their work. Students can also request the instructor to make a voluntary presentation based on their work for class exercise. See details below.

Grading Notes:

Class Preparedness, Participation and Attendance. The following aspects will be considered in evaluating student’s grade:

- a. Preparedness and Attendance. Regular attendance and diligent preparation for the class is indicative of your commitment to participate in a learning environment. See attendance policy above.
- b. Active Engagement. Active participation in the class with thoughtful questions, sharing alternative perspectives, and responding critically to class discussion.

Bonus Points for Presentation. You will earn bonus points for making presentation to the class. Presentations will be graded as per policy for class assignments (see grade computation below). To earn bonus points, the students must earn 85% (B) or higher on their presentation. No bonus points would be earned for a presentation that earns less than a B. Presentation opportunity will be available as follows:

- a. Invited Presentation. Students with outstanding submissions for class exercises will be invited by the instructor to present their work to the class. Take this seriously. Imagine you are making a formal presentation to a client. Highlight your presentation skills.
- b. Requested Presentation. Any students can request the instructor to make a presentation based on the class exercise. Such requests must be made at least 1 week in advance of the presentation date.

Exam. Each exam will test for comprehension of concepts and skills developed as part of the course, and their application to analytical problems.

Grade Computation: Most assignments will be graded using a plus and minus system (e.g., A- and A+ and so on). Conversion of this grading system to numerical scores is provided below. Students are responsible for tracking their own overall performance using the above weighting scheme. The final grade, however, will be a letter grade based on the final numerical score without the plus and minus in accord with University guidelines.

A+ = 98, A = 95, A- = 91

B+ = 88, B = 85, B- = 81

C+ = 78, C = 75, C- = 71

D+ = 68, D = 65, D- = 61

F+ = 50, F = 30, F- = 0

SUBMISSION REQUIREMENTS AND GUIDELINES.

All course exercises should be submitted **only** on the blackboard as per specific instructions to avoid late submission penalty (see below).

Typically, submission-feedback-rework will work as follows:

1. Assignments should be submitted in a powerpoint format, address all requirements of the assigned problem, and generally up to 10 slides of material. Text may be bulleted but must be complete with details to be understood precisely. Be concise. Avoid redundant words. Additional notes may be included in the powerpoint to explain your work.
2. Assignments will be due by Saturday, midnight. No extensions permitted (see **Late Submissions** below).
3. Feedback will be provided usually by Monday, 12 noon.
4. Based on the quality and creativity of your submission, the instructor may ask you to make a presentation based on your assignment in the Tuesday class with the following guidelines:
 - a. 5-7 minute presentation
 - b. Focus on points highlighted in the feedback. Revise and sharpen your presentation accordingly.
 - c. Polished and professional presentation. Assume you are presenting to a client.
5. Students who want to rework the submission to fix things that they missed or got wrong can submit their revised work by Tuesday, 12 noon (before class).

6. The main objective of the rework is to promote learning of key concepts and skills, and not rake up grade points (see **Re-dos** below).
7. All rework must be done individually by the student/group, without help, assistance or guidance from other students or course assistant.

Important: *Label all your assignment files as instructed below:*

All individual assignments should be labeled as your lastname_firstname_exercisename_MKMR 310

Example: singh_jagdip_ex3_MKMR310.pptx

All group assignments should be labeled as: last_names_of_group_members_exercise number_MKMR310

Example: singh_smith_thomas_payne_chin_Huella_MKMR 310.pptx

All reports should be carefully edited to eliminate redundant materials and keep the material focused. Tightly written papers will be viewed more favorably than long-winded developments.

Late Submissions: Late submission will result in a letter-grade penalty. That penalty is one full letter grade for each day (or part thereof) that the submission is late. For example, an exercise would have earned a B if submitted on its due date of Saturday, will be graded C if submitted by Sunday, D if submitted by Monday, and an F if submitted thereafter. If a submission must be late due to circumstances beyond your control, contact the instructor. At his discretion and based on his assessment of the actual degree of uncontrollability of the situation, he may permit a special arrangement. The most typical special arrangement is for students who must miss class due to extreme circumstances. They are often permitted to submit the assignment *early*. It is extremely rare for the instructor to permit an extension of the due date.

Redos. Students are encouraged to go back to fix problems identified on their graded assignments as this ensures that students complete the learning loop. In some instances, a redo may earn you a portion of the original points, but often it may not. Redos that show student's effort in addressing the problem on their own, the nature of the problem and timely submission are all factors that go into this decision. Additional points for redos are at the instructor's discretion. The extra credit will be up to 1 point maximum (10% of grade) and usually lower. Redos are intended to promote learning and not as opportunities for making up the grade.

Changes. The instructor reserves the right to make changes during the semester to any aspect of syllabus that, to his judgment, are needed to achieve the learning objectives of the course.

Weekly Schedule

**RR = Required Reading, WR = Web-based material for Review,
HwA = Homework Assignment**

Aug 28 & 30: MARKETING + ANALYTICS

Aug: 28: 1.1 Analytics Driven Insights: Essential Skills for Intelligent Action

WR: Big Data and Analytics, http://en.wikipedia.org/wiki/Big_data
<http://en.wikipedia.org/wiki/Analytics>

Aug 30: 1.2 Rosetta Visit: Analytics in Action

WR: Basic about Excel charts,
<http://www.youtube.com/watch?v=c70cjQXWkFI&feature=related>

The essentials of working with Excel charts,
<http://www.dummies.com/how-to/content/the-essentials-of-working-with-excel-2010-charts.html>

Sept. 4 & 6: BASIC STATISTICAL ANALYSIS WITH XCL (UNIVARIATE)

Sept 4: 2.1 Basic Analytics with EXCEL

RR: *Univariate Statistics in Excel*

(<http://www.youtube.com/watch?v=efdRmGqCYBk&playnext=1&list=PL2C53784A0634D33B>

[Creating a Histogram in Excel 2010](http://www.youtube.com/watch?v=efdRmGqCYBk&playnext=1&list=PL2C53784A0634D33B)

(<http://www.youtube.com/watch?v=RyxPp22x9PU>)

HwA: Ex#1; Due Sept 8

Sept 6: 2.2 Descriptive Analytics for Single Variables with EXCEL

RR: *Univariate Statistics in Excel*

(<http://www.youtube.com/watch?v=efdRmGqCYBk&playnext=1&list=PL2C53784A0634D33B>

[Creating a Histogram in Excel 2010](http://www.youtube.com/watch?v=efdRmGqCYBk&playnext=1&list=PL2C53784A0634D33B)

(<http://www.youtube.com/watch?v=RyxPp22x9PU>)

HwA: Ex#1 due Sept 8

Sept 11 & 13: DATA MINING WITH XCL II (BIVARIATE)

Sept 11: 3.1 Understanding Relationships between Two Variables with EXCEL

WR: Pivot Table in XCL, <http://www.youtube.com/watch?v=7zHLnUCtfUk>

Correlation Coefficient in XCL, <http://www.youtube.com/watch?v=s2TVkYmmCAs>

HwA: Ex#2; Due Sept 15

Sept 13: 3.2 Bivariate Analytics with EXCEL

WR: Pivot Table in XCL, <http://www.youtube.com/watch?v=7zHLnUCtfUk>

Correlation Coefficient in XCL, <http://www.youtube.com/watch?v=s2TVkYmmCAs>

HwA: Ex#2; Due Sept 15

Sept 18 & 20: WEB ANALYTICS

Sept 18: 4.1 Fundamentals of Interactive Data and Web Analytics

WR: Web Analytics 101: <http://www.kaushik.net/avinash/web-analytics-101-definitions-goals-metrics-kpis-dimensions-targets/>

Beginning Analytics: http://www.youtube.com/watch?v=Hdsb_uH2yPU&feature=relmfu

HwA: Ex#3; Due Sept 22

Sept 20: 4.2 Google Analytics

WR: <http://www.kaushik.net/avinash/google-analytics-is-re-launched-do-these-five-things-first-in-v2/>

Beginning Analytics: http://www.youtube.com/watch?v=Hdsb_uH2yPU&feature=relmfu

HwA: Ex#3; Due Sept 22

Sept 25 & 27: ATTRIBUTION MODELING FOR INTERACTIVE DATA

Sept 25: 5.1 Fundamentals of Modeling Interactive Data

WR: <http://www.kaushik.net/avinash/multi-channel-attribution-definitions-models/>

HwA: Ex#4; Due Sept 29

Sept 27: 5.2 Attribution Analytics

WR: <http://www.kaushik.net/avinash/multi-channel-attribution-definitions-models/>

HwA: Ex#4; Due Sept 29

OCT 2 & 4: ASKING QUESTIONS TO GAIN DEEP INSIGHTS

Oct 2: 6.1 Designing and Implementing Marketing Surveys

WR: Using Qualtrics for Mixed Survey Designs, <http://www.qualtrics.com/university/market-surveys/>

HwA: Ex#5; Due Oct 6

Oct 4: 6.2 Web Surveys with Qualtrics©

WR: Survey design best practices:
<http://www.wpi.edu/academics/ATC/Collaboratory/Idea/surveypractices.html>
<http://www.markettools.com/blog/best-practices-customer-survey-design>

HwA: Ex#5; Due Oct 6

Oct 9: In Class Exam I (material covered till 09/28)

Oct 11 7.2 DESCRIPTIVE ANALYTICS WITH SPSS I

WR: SPSS Resources (PASW):

<http://www.youtube.com/watch?v=5Z8RagPdmOI&feature=related>

Define Variables in SPSS

http://www.youtube.com/watch?v=ssjuOuMkCB4&feature=mfu_in_order&list=UL, &

http://www.youtube.com/watch?v=icgooM1K2IU&feature=mfu_in_order&list=UL

Frequency Analysis in SPSS: <http://www.youtube.com/watch?v=24Y5w9sAOzI>

Selecting Cases in SPSS:

<http://www.youtube.com/watch?v=ero4VR7h1HU&feature=related>

HwA: Ex#6; Due Oct 13

Oct 16 & 18: ASSOCIATIONAL ANALYTICS WITH SPSS

Oct 16: 8.1 Testing Relationships between Two & More Variables

RR: http://onlinestatbook.com/2/chi_square/one-way.html

WR: Cross Tabulation in SPSS, http://www.youtube.com/watch?v=p-ZaWgiM_Yg,
<http://www.youtube.com/watch?v=cuQ9e5jxHQU&feature=related>

HwA: Ex#7; Due Oct 20

Oct 18: 8.2 Cross-Tab & Chisquare Analytics in SPSS

RR: http://onlinestatbook.com/2/chi_square/one-way.html

WR: Cross Tabulation in SPSS, http://www.youtube.com/watch?v=p-ZaWgiM_Yg,
<http://www.youtube.com/watch?v=cuQ9e5jxHQU&feature=related>

HwA: Ex#7; Due Oct 20

Oct 23: FALL BREAK – Fall break is 22 and 23 Oct 2012.

Oct 25: Review and Reassessment of Statistical Concepts & SPSS

Oct 30 & Nov 1: PREDICTIVE ANALYTICS WITH SPSS I

Oct 30: 9.1 Predictive Modeling of Marketing Problems

RR: <http://onlinestatbook.com/2/regression/intro.html>

http://onlinestatbook.com/2/regression/multiple_regression.html (stop at “Partitioning the Sum of Squares”)

HwA: Ex#8; Due Nov 3

Nov 1: 9.2 Regression Analysis in SPSS

RR: <http://onlinestatbook.com/2/regression/intro.html>

http://onlinestatbook.com/2/regression/multiple_regression.html (stop at “Partitioning the Sum of Squares”)

WR: Regression using SPSS, <http://www.youtube.com/watch?v=4EFXic4sGdE>
http://mallit.fr.umn.edu/fr4218/assigns/excel_reg.html - this will provide a step-by-step review of how to create linear regression charts in Excel

HwA: Ex#8; Due Nov 3

Nov 6: PREDICTIVE ANALYTICS WITH SPSS II

Nov 6: Predictive Modeling of Marketing Problems

RR: <http://onlinestatbook.com/2/regression/intro.html>

http://onlinestatbook.com/2/regression/multiple_regression.html (stop at “Partitioning the Sum of Squares”)

WR: Regression using SPSS, <http://www.youtube.com/watch?v=4EFXic4sGdE>

HwA: Review for Exam II

Nov 8: In Class Exam II (material covered till 11/06)

Nov 13 & 15: FORECASTING (R)

Nov 13: 10.1 Forecasting Basics, Uses and Misuses

RR: <http://www.statsoft.com/textbook/time-series-analysis/?button=3#identifying> (read sections on “Two General Aspects...” and “Trend Analysis.”)

<http://www.statsoft.com/textbook/time-series-analysis/?button=3#exponential> (read sections on “Simple Exponential Smoothing,” “Choosing the Best Value...,” and “Indices of Lack of Fit.”)

WR: <http://analysights.wordpress.com/2010/05/06/forecast-friday-topic-moving-average-methods-2/> - moving average overview

HwA: Ex#9; Due Nov 17

Nov 15: 10.2 Forecasting Analytics

RR: <http://www.statsoft.com/textbook/time-series-analysis/?button=3#identifying> (read sections on “Two General Aspects...” and “Trend Analysis.”)

<http://www.statsoft.com/textbook/time-series-analysis/?button=3#exponential> (read sections on “Simple Exponential Smoothing,” “Choosing the Best Value...,” and “Indices of Lack of Fit.”)

WR: <http://analysights.wordpress.com/2010/05/06/forecast-friday-topic-moving-average-methods-2/> - moving average overview

HwA: Ex#9; Due Nov 17

Nov 20 MONETIZING (R)

Nov 20: 11.1 ROI of Marketing Investments

WR: <http://www.kaushik.net/avinash/analytics-tip-calculate-ltv-customer-lifetime-value/>
<http://www.youtube.com/watch?v=BHDblh9Y1-o&feature=related>

<http://www.kaushik.net/avinash/analytics-tip-calculate-ltv-customer-lifetime-value/>

HwA: Ex#9; Due Dec 1

Nov 22: THANKSGIVING BREAK

Nov 27 & 29

Nov 27: 11.1 ROI of Marketing Investments

WR: <http://www.youtube.com/watch?v=BHDblh9Y1-o&feature=related>

<http://www.kaushik.net/avinash/analytics-tip-calculate-ltv-customer-lifetime-value/>

HwA: Ex#10; Due Dec 1

Nov 29: 10.2 Marketing ROI Analytics

WR: <http://www.youtube.com/watch?v=BHDblh9Y1-o&feature=related>

<http://www.kaushik.net/avinash/analytics-tip-calculate-ltv-customer-lifetime-value/>

HwA: Ex#10; Due Dec 1

Dec 04 & Dec 06

Dec 04: Review (material covered till 11/29)

Dec 06: In Class Exam III (Comprehensive material covered till 11/30)