# MBA 720/GBUS 720: Marketing Analytics

## Spring 2017

<table>
<thead>
<tr>
<th>Instructor:</th>
<th>Dr. Gautham Vadakkepatt, Assistant Professor of Marketing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office:</td>
<td>Enterprise Hall, Room 133</td>
</tr>
<tr>
<td>Telephone:</td>
<td>(703) 993-1227</td>
</tr>
<tr>
<td>Fax:</td>
<td>(703) 993-1809</td>
</tr>
<tr>
<td>E-mail:</td>
<td><a href="mailto:gavadakke@gmu.edu">gavadakke@gmu.edu</a></td>
</tr>
<tr>
<td>Course Website:</td>
<td>BLACKBOARD</td>
</tr>
<tr>
<td>Class Time and Location:</td>
<td>Wednesday, 6:30 p.m.-10:05 p.m., Apr 16-Jul 1.</td>
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<tr>
<td></td>
<td>Arlington: Founders Hall 120</td>
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<tr>
<td>Office hours:</td>
<td>4:00 p.m. to 6:00 p.m. Wednesday</td>
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</tbody>
</table>

## Required Materials:

**A. Software**

Students are required to bring a laptop to every class

1) **Tableau Software** (Access to this software is free. Instructions to download the software will be made available on BlackBoard)

2) **IBM SPSS** (We will use Virtual Computing Lab access to SPSS)

3) Microsoft Excel with Solver add-in

**Lecture Notes and Data:**  
Will be posted on Blackboard

**Optional Textbooks:**  

**B. Course Pack**  
[http://cb.hbsp.harvard.edu/cbmp/access/63617527](http://cb.hbsp.harvard.edu/cbmp/access/63617527)  
In this course pack you will find supplemental reading material that will help you understand the material better.

**Credit Hours:** 3 cr. hrs.
COURSE DESCRIPTION

In today’s technology enabled world, organizations collect lot of information as a part of their business operations and pool it with data acquired from outside sources. Marketing analytics is a systematic approach to harnessing this data/information to drive effective marketing decision making. We will learn to analyze historical data, market research data, and competitive information for making strategic marketing decisions.

This course will be extensively based on hands-on exercises and mini-case discussions. Students will learn how to run some basic marketing analysis techniques and interpret the results of their analysis. Other pedagogical tools that will be used are lectures, in-class discussions, cases, and team assignments.

Specifically, you will learn: how to value customers, predict consumer choice, segment the market, position the product in customers’ minds and identify which attributes to include/exclude in a new product.

The course objectives are to:
• Help students understand the role of analytical techniques and show how they can enhance quality of marketing decision making in modern enterprises.
• Improve students’ ability to view marketing processes and relationships systematically and analytically.
• Expose students to various examples that demonstrate the value of marketing analytics in real managerial contexts.
• Make students comfortable with using SPSS.

The MBA Learning Goals are:

a. Teaming & Leading: Our graduates will demonstrate the team leadership and interpersonal skills needed to form, lead, and work effectively on diverse organizational teams.

b. Analytical Decision Making: Our students will demonstrate the ability to analyze uncertain complex management situations using appropriate tools, techniques and information systems for decision-making.

c. Knowledge of Functional Business Disciplines: Our graduates will demonstrate the ability to integrate knowledge from all functional areas of business into a meaningful firm-level perspective.

d. Global Understanding: Our graduates will demonstrate a perspective on how businesses operate in the global environment.

e. Communication Skills: Our graduates will demonstrate written, oral and presentations skills necessary to explain problems and solutions effectively and persuasively.

f. Ethics and Social Responsibility: Our graduates will have a sense of professional and social responsibility in the conduct of managerial affairs.
COURSE POLICIES AND EXPECTATIONS

School of Business Standards of Behavior

The mission of the School of Business at George Mason University is to create and deliver high-quality educational programs and research. Students, faculty, staff, and alumni who participate in these educational programs contribute to the well-being of society. High-quality educational programs require an environment of trust and mutual respect, free expression and inquiry, and a commitment to truth, excellence, and lifelong learning. Students, program participants, faculty, staff, and alumni accept these principles when they join the School of Business community. In doing so, they agree to abide by the following standards of behavior:

- Respect for the rights, differences, and dignity of others
- Honesty and integrity in dealing with all members of the community
- Accountability for personal behavior

Integrity is an essential ingredient of a successful learning community. Ethical standards of behavior help promote a safe and productive community environment, and ensure every member the opportunity to pursue excellence. School of Business can and should be a living model of these behavioral standards. To this end, community members have a personal responsibility to integrate these standards into every aspect of their experience at the School of Business. Through our personal commitment to these Community Standards of Behavior, we can create an environment in which all can achieve their full potential.

Honor Code Statement

The Honor System and Code adopted by George Mason University will be enforced for this class:

http://oai.gmu.edu/the-mason-honor-code/

In your work on all written assignments, keep in mind that you may not present as your own the words, the work, or the opinions of someone else without proper acknowledgement. Faculty are obligated to submit any Honor Code violations or suspected violations to the Honor Committee without exception.

The School of Business “Recommendations for Honor Code Violations” is posted on the course website.

Assignments and exams that are determined to be in violation of the University Honor Code will result in a grade of zero. Infractions or appeals may be referred to the Honor Council for resolution.

Announcements and Updates

It is your responsibility to check Blackboard regularly for the addition of any supplemental course material. Email announcements between class meetings may be sent. Any email from me will be sent to your GMU email account.
E-Mail Correspondence

You must use your “GMUID@gmu.edu” e-mail address for all communication with me via email. I will not respond to emails from any other address. This policy will be strictly enforced due to federal privacy laws which states that I am not allowed to provide confidential information to any non-GMU e-mail address. Please use MBA 720/GBUS 720 in title.

Attendance

Attendance is expected. You will miss significant portions of the material; miss information critical for performing well in this course; as well as forfeit participation points if you are not present in class. You are responsible for all material covered in class. If you are absent from class, it is your responsibility to follow-up with your classmates.

Religious Holidays, Sports, and School-Related Activities

If you expect to be absent from class during the semester for any of the above reasons, please contact me within the first two weeks to make appropriate arrangements with regards to graded components of the course.

Students with Disabilities

George Mason University is committed to providing reasonable accommodations for students with disabilities in order to allow for equal learning opportunities. If you need such accommodations, please contact the Office of Disability Services at (703) 993-2474.

Inclement Weather Policy:

We will operate in accordance with official university decisions about inclement-weather cancellations. Please check GMU website or the information line 703-993-1000. If class is cancelled then the schedule of subjects and assignments may need to be changed.

COURSE GRADING

You may earn up to 1000 points during the length of this class. The grading breakdown is given below:

<table>
<thead>
<tr>
<th>Deliverable</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Home-work assignments (Best 4 of 5)</td>
<td>200</td>
</tr>
<tr>
<td>2. Group Project</td>
<td>250</td>
</tr>
<tr>
<td>3. Take-Home Case Quizzes (2)</td>
<td>100</td>
</tr>
<tr>
<td>4. Take-home final exam</td>
<td>350</td>
</tr>
<tr>
<td>5. Class participation</td>
<td>100</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1000</strong></td>
</tr>
</tbody>
</table>
*****All grades (Assignments and Exams) are final within two weeks of them being posted. There will be no adjusting of any grades two weeks after the grade is posted.*****

Final grades will be assigned strictly based on the following scale:

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;=930</td>
<td>A</td>
</tr>
<tr>
<td>870-899</td>
<td>B+</td>
</tr>
<tr>
<td>770-799</td>
<td>C+</td>
</tr>
<tr>
<td>&lt; 700</td>
<td>F</td>
</tr>
</tbody>
</table>

900-929: A-  830-869: B  800-829: B-  730-769: C  700-729: C-

NOTE ABOUT GRADES

- Grades will be accessible by Blackboard only.
- For your security, grades will not be provided by phone or email.
- Grades are not negotiable. Students with extenuating circumstances which require them to receive a certain grade or maintain a particular GPA (e.g., graduation, loss of a scholarship, University probation or suspension, loss of a job offer, revocation of student Visa, etc.) need to realize that they are responsible for working hard to achieve the needed class grade. Exceptions will not be made for individual students.
- Grades can be changed only if I have made an input or calculation error. It is important that you check your class grades and immediately notify me of any discrepancies.

GRADING COMPONENTS

Final Take-home Exam (Individual)

The final exam will be a take-home exam. The exam will comprise of a few short answer essay questions based on lectures, class discussions, assigned readings, data analyses, and any other material used in the course. The exam will be released on June 16th midnight, and you will have one week to turn in the final exam.

Homework Assignments (max. 3 member groups)

The best way to learn data analysis is by actually doing it. While the instructor will go over the various types of analysis in class with sample datasets, students will be required to complete homework assignments on a different dataset using the same techniques. These assignments are group assignments and the best four of the five data assignments will be used to evaluating the final grade.

Case Quizzes (Individual)

There will be two take-home individual case quizzes in this course. These quizzes are used to ensure that everyone has the same baseline knowledge needed to discuss the cases in class. The quizzes will be posted online a week before the quizzes are due. No late submission is permitted.

Team Project (max. 3 member group)

The team project will involve design of short market research study, data collection, data analysis, and short report. The project can address one of five major topics: regression model
applications, customer choice, market segmentation, product positioning, or ideal design of a new product concept. Please see detailed project outline at the end of the syllabus (PG. 8). Teams (maximum of three members per team) are free to pick the topic that interests them. However, before teams start working on the project, approval from the instructor is required. Finally, teams are encouraged to meet with the instructor at various stages of the project to ensure that they are on track.

Class Participation
You will be expected to participate in class discussions and complete in-class exercises. Most weeks we go through small exercises in class. Your participation will be evaluated based on your involvement in these assignments. Additional criteria used for evaluating class participation include your ability to discuss your own work experience when relevant to the material being covered in class and your ability to ask thoughtful questions in class. Your participation scores will also be positively influenced by: (i) Arriving before the start of class and staying till the end, (ii) Listening actively to the instructor and peers, (iii) Asking good questions, (iv) Responding to questions asked to the class, (v) Neither dominating the conversation nor being too quiet, and (vi) Exhibiting a good sense of humor.

FINAL NOTE:
Changes to the syllabus may be made to reflect the needs of the class. Any changes will be announced in class and/or via Blackboard. It is the students’ responsibility to stay aware of any changes made.
### TENTATIVE COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Content</th>
<th>Deliverables*</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 19</td>
<td>Course Overview</td>
<td>Resumes due</td>
</tr>
<tr>
<td></td>
<td>Introduction to Data Visualization</td>
<td></td>
</tr>
<tr>
<td>April 26</td>
<td>Data Visualization</td>
<td>Team List Due**</td>
</tr>
<tr>
<td>May 3</td>
<td>Marketing Mix Models</td>
<td>Assignment 1 Due</td>
</tr>
<tr>
<td>May 10</td>
<td>Choice Models</td>
<td>Assignment 2 Due</td>
</tr>
<tr>
<td>May 17</td>
<td>Customer Analytics</td>
<td>Virgin Mobil Quiz Due</td>
</tr>
<tr>
<td></td>
<td><strong>Final Project:</strong></td>
<td>Research Question Due</td>
</tr>
<tr>
<td>May 24</td>
<td>Segmentation and Targeting</td>
<td>Assignment 3 Due</td>
</tr>
<tr>
<td>May 31</td>
<td>Positioning</td>
<td>Assignment 4 Due</td>
</tr>
<tr>
<td>June 7</td>
<td>Conjoint Analysis</td>
<td>Portland Trailblazer Quiz Due</td>
</tr>
<tr>
<td>June 14</td>
<td>Data Visualization</td>
<td>Assignment 5 due</td>
</tr>
<tr>
<td>June 21</td>
<td><em>Project/Exam Work Day</em></td>
<td></td>
</tr>
<tr>
<td>June 24</td>
<td><em>Exam Due</em></td>
<td><em>Final Project Due</em></td>
</tr>
</tbody>
</table>

*All Deliverables are due by 6:00 p.m., on the assigned day unless otherwise specified.*

** Individuals can choose to complete the project and assignment individually or in teams. The maximum number of members in a team is three.
Final Project Outline

Step 1: Decide product or service category which you want to analyze?

Step 2: Become brand manager of a brand (hypothetical or real).
Assume position of a brand manager of a brand either currently being offered in the product
category or that of a hypothetical brand that you wish to launch in this market. Be very specific
about the brand and its characteristics. For example I am assuming the position of a brand
manager for Budweiser American Ale for the ‘Beer Data Survey’ and the characteristics of the
brand are well specified (dark colored, full bodied, local origin, specialty market etc).

Step 3: Decide the type of analysis you want to perform?
You can choose one from the following analysis
1. Segmentation and Targeting analysis (Cluster analysis, Logistic Regression)
2. Positioning analysis (Perceptual Maps)
3. New product analysis (Conjoint analysis)
4. Customer choice and customer value (Logistic regression, CLV)
5. Regression models (sales forecasting, advertising ROI, etc)

Step 4: Decide on data requirements for analysis.
Use the following table to get an idea of type of information needed (this table is valid only for
segmentation, targeting, positioning and conjoint analysis). Please note that for other research
questions you can collect data from social media sites etc.

<table>
<thead>
<tr>
<th>Data On</th>
<th>Segmentation and Targeting</th>
<th>Positioning</th>
<th>New Product Design (Conjoint)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Importance of Attributes (Needs)</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Descriptors (Demographics/ Lifestyles)</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceptions of Brands on Attributes</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Preferences of Brands</td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Preferences for Attribute Bundles</td>
<td></td>
<td></td>
<td>Yes</td>
</tr>
</tbody>
</table>

Step 5: Design survey for data collection.
The good old paper based survey is always an option. You can also use any web-based survey
option (e.g., SurveyMonkey).

Step 6: Sample size and data collection process.
Required Sample Size: 50 completed usable responses. You can collect data from anybody
except your pets. The idea is not the representativeness of the sample but understanding of the
data collection process. It is expected that a good faith attempt will be conducted to capture the data from the target market that will use the product.

**Step 7: Data coding and cleaning.**
If using the above web based software make sure your data is coded properly. If the coding is not appropriate recode the data

**Step 8: Create relevant data analysis template for selected analysis.**

**Step 9: Analyze the data using relevant data analysis steps showed in class.**

**Step 10: Write a short report (4-5 pages) on the study.**
General issues that you will address are as follows.
1. What was the decision problem?
2. Which type of data was collected?
3. How the data was collected?
4. Which specific analyses were performed?
5. Insights generated based on analyses.
6. What decisions are being recommended?

**Topic specific issues that you will address are as follows.**
1. Segmentation and Targeting Study
   a. Number of different segments in the market and description of each segment
   b. Profile of each segment in the market
2. Positioning Study
   a. What are the underlying dimensions and their relative importance
   b. Relative importance of different attributes
   c. Relative performance of each brand on different attributes
   d. Position that you will select for your brand on the map and why?
3. New Product Study (Conjoint)
   a. How and why different bundles were created?
   b. What were the competing offerings?
   c. Which new bundle you decide to offer in the market?
   d. How will this bundle compete relative to the existing offerings?
4. Customer choice and customer value
   a. Accuracy of prediction models
   b. Identification of all the relevant predictors
   c. What is the value of each customer segment
5. Regression Models
   a. Predict new product sales or existing product sales using right variables
   b. Develop a best fit model

**Report Format**
1. 4-5 pages, 1.5 spaced, 12 font size, single space (not including appendices)
2. Summary of decision problem and recommendation on first page.
3. Email me the data file used for analyses.
4. Include Questionnaire as an appendix.
Sample Research Questions:

1) Predict sales for a new app
2) Predict probability that someone is going to go to a Capitals home-game
3) Segment the market of craft beer drinkers
4) Develop a perceptual map of how consumers view Coca-Cola in comparison to other carbonated drinks on the following dimensions
5) Develop a new running shoe for Nike based on consumer preferences with regards to new product attributes.
6) What is the ROI of advertising for public firms
7) What type of advertising on social media is most effective in generating consumer interest