Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Marketing.

2. Course prefix, number and complete title of course: MKTG 625, Marketing Engineering.

3. Course description (not to exceed 50 words):
Analysis and management of popular statistical packages for the purpose of enhanced data-based and empirically-driven marketing decisions. Application of statistical software to marketing-related data sets.

4. Prerequisite(s): MKTG 621 or equivalent.

5. Is this a variable credit course? ☑ No
If yes, from _____ to _____

6. Is this a repeatable course? ☑ No
If yes, this course may be taken _____ times.
Will this course be repeated within the same semester? ☑ No

7. Has this course been taught as a 489/689? ☑ No
If yes, how many times? _____
Indicate the number of students enrolled for each academic period it was taught.

8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
      Master of Science in Marketing
   b. an elective for students enrolled in the following degree program(s) (e.g., M.S., Ph.D. in geography)

9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (excluding punctuation)

<table>
<thead>
<tr>
<th>Lec.</th>
<th>Lab</th>
<th>SCH</th>
<th>CHI</th>
<th>Fund Code</th>
<th>Admin Unit</th>
<th>Acad Year</th>
<th>ECCE Code</th>
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<tbody>
<tr>
<td>0000</td>
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<td>21</td>
<td>0001618309</td>
<td>0010003632</td>
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</tbody>
</table>

Approval recommended by:

Head of Department Date
Head of Department (if cross-listed course) Date

Chair, College Review Committee Date
Dean of College Date
Dean of College Date

Submitted to Coordinating Board by:

Associate Director, Curricular Services

Date Effective Date

Questions regarding this form should be directed to Sandra Williams at 845-8201.
Curricular Services – 11/07
Texas A&M University
Departmental Request for a New Course
Undergraduate • Graduate • Professional
• Submit original form and attach a course syllabus.

1. This request is submitted by the Department of Marketing

2. Course prefix, number and complete title of course: MKTG 625 Marketing Engineering

3. Course description (not to exceed 50 words): Analyzing and managing popular statistical packages for the purpose of enhanced data-based and empirically-driven marketing decisions. A variety of marketing-related data sets are used for applying statistical software to implement a number of quantitative analyses and explanatory and predictive models pertinent to marketing.

4. Prerequisite(s): MKTG 621 or equivalent

5. Is this a variable credit course? ☐ Yes ☒ No
   If yes, from _____ to _____

6. Is this a repeatable course? ☐ Yes ☒ No
   Will this course be repeated within the same semester? ☐ Yes ☒ No
   If yes, this course may be taken _____ times.

7. Has this course been taught as a 489/689? ☐ Yes ☒ No
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8. This course will be:
   a. required for students enrolled in the following degree program(s) (e.g., B.A. in history)
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9. If other departments are teaching or are responsible for related subject matter, the course must be coordinated with these departments. Attach approval letters.

10. Prefix Course # Title (excluding punctuation)
    MKTG 625 MARKETING ENGINEERING

    | Lect. | Lab | SCH | CIP and Fund Code | Admin. Unit | Acad. Year | FICE Code |
    |-------|-----|-----|-------------------|-------------|------------|----------|
    | 0     | 0   | 0   | 3214320016183009-10 | 00036332     | Level 4    |

    Approvals recommended by:

    Head of Department Date 9/3/05
    Head of Department (if cross-listed course) Date

    Submitted to Coordinating Board by:

    Associate Director, Curricular Services Date

    Questions regarding this form should be directed to Sandra Williams at 845-8201.
    Curricular Services – 11/07

2 of 11 C8
The mission of Mays Business School is to create knowledge and develop future ethical business leaders for a global society.

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Course Syllabus and Schedule

Instructor: Professor Ramkumar Janakiraman, Ph.D.
Office: Wehner 220M
Phone: (979) 845-3028  Fax: (979) 862-2811
E-mail: ram@mays.tamu.edu
URL: http://people.tamu.edu/~ramkumar

Course: MKTG 689: Marketing Engineering

Office Hours: M 2:30 P.M. – 3:30 P.M./By appointment

Course Web Page: TAMU eLearning


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COURSE DESCRIPTION AND OBJECTIVES

Reasons to Take This Course

Driven by the increasing availability of computing power and processing speed (Moore’s law), the simultaneous fall in prices of computing power, and with more efficient and cost effective ways of collecting and storing real time data, more firms have started collecting data to track consumer choice and behavior pertinent to marketing. However, harnessing the data to business intelligence is still a challenge for many firms. As a result, there is a great demand in the market for “marketing engineers” who can work with data and come up with strategies based on marketing models that can estimated with the available data. This course focuses on analyzing and managing data with some of the popular database software, formulation and estimation of advanced marketing models via popular statistical packages, with the ultimate goal of enhanced data based and empirically driven management decisions. The course will introduce the students to a variety of datasets and teach them (hands on use of) statistical software to implement the different quantitative techniques. This is an applied course that involves extensive use of data and PC-based analysis using Excel, SPSS and SAS. The course will cover a number of quantitative analyses, explanatory and predictive models pertinent to marketing, such as linear regression models, brand choice models, consumer segmentation models and customer lifetime models.

Learning Outcomes and Course Objectives

On completing the course, the students will:
1. Be familiar with several database and statistical software such as *Excel*, *SPSS* and *SAS*.

2. Garner extensive experience in using these software through computer exercises (i.e., dirtying your hands with data).

3. Develop an ability to formulate marketing models to solve various marketing problems, and to assess the strengths and weaknesses of these modeling approaches.

4. Have an opportunity, through the course project, to work on a database project.

**Course Materials**

2. Supplementary Readings (SR): Available on eLearning course page
3. Recommended Books:

**Prerequisites**

MKTG 621 or equivalent

**COURSE ORGANIZATION AND FORMAT**

The sections below discuss the mechanics of the course.

**Study Groups**

Students will need to form study groups early in the semester. Groups should be of four or five members. No group may have more than five members; three-person groups will be allowed only by special permission of the instructor. Study Group composition is due by the due date given in the course schedule. The members of a group will work together on group assignments and the class project.

**Class Format**

Class activity is divided among lectures, and computer lab exercises.

*Lecture/Discussions.* Approximately half of the class time will follow a lecture format. These sessions are devoted to the presentation and discussion of data handling techniques, concepts, and model formulation.
The lecture/discussion sessions are often accompanied by assigned readings from the course packet. Lectures are not designed to summarize the readings, although many important concepts will be consolidated and extended. *The readings are considered an integral part of the course and students will be held responsible for their content during discussion and in their case analyses.*

**Computer Lab Sessions.** The course will involve PC-based analyses using several software packages such as Excel, SPSS and SAS. The lab sessions are integral part of the course, which involve “hands-on” use of the software, and are intended to help you learn them use them for various applications. Computer lab sessions will be held at WCBA 241.

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**BASIS FOR GRADING**

I believe in allowing many evaluation moments during the semester of different types. Though the course might become very intensive and demanding, the high number and diversity of evaluation tools also avoids each evaluation moment to impact more than 25% of the final grade (which in turn reduces the risk for students). Each student's overall course grade will be based upon the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tbody>
<tr>
<td>Exam 1</td>
<td>15%</td>
</tr>
<tr>
<td>Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>Course Project (Group)</td>
<td>20%</td>
</tr>
<tr>
<td>Individual Assignment</td>
<td>20%</td>
</tr>
<tr>
<td>Group Assignments</td>
<td>15%</td>
</tr>
<tr>
<td>Class Participation</td>
<td>5%</td>
</tr>
</tbody>
</table>

The overall grade is 65% individual performance (exams, class participation, individual assignment, and individual case analyses) and 35% group performance (two group assignments and the course project). Final course grades will be based on your cumulative numerical score relative to other students in the class (i.e. curved). Your cumulative numerical score will be determined by a weighted average of numerical scores from the above grade components.

**Exams**

There will be two in-class (closed-book) exams. The two exams will cover lectures, discussions from the lab sessions, and selected readings. The format of the exams will be discussed in class (there will be two exam review sessions, one before each exam).

**Course Project**

The project for this course is a database project. Each group is required to access any dataset that is publicly available, or available through the university, and apply some of the principles and
techniques learnt in the class. You are also encouraged to collect data on your own if you have
interest in any particular industry, organization etc. I’ll also provide an overview of some of the
datasets that I have, and you are welcome to work on them. The steps involved in these will be
appropriate data manipulation, model building, model estimation, interpretations of results, and
managerial recommendations. Groups are instructed to submit a two page report describing the
topic, and providing a brief outline of the project. This is due on the Project Consultation day (see
schedule for the due date).

The output of the group project includes an in-class presentation and a project report (see schedule
for the due dates). The text of the report that is due at the end of the semester should not exceed 12
pages in length (and shorter reports are quite acceptable). Please leave adequate margins on all
sides and double space. A hard copy of the presentation slides is due before the project
presentation. Groups will be randomly assigned to letter groups (A through F) in class for the
purpose of presentation schedule (see the schedule at the end of the syllabus). If for some reason,
you are unable to attend your group’s presentation, you should discuss this with your team
members and ensure that you make up for your absence by contributing adequately towards the
project.

Each group member will be asked to evaluate his/her peers with respect to their performance
towards the group assignments. A special form will be handed out. Each group member should
turn in the form on the day the project report is due. If a student fails to turn it the form, it may
results in loss of some credit for the student.

Assignments

Hard copy versions of all the assignment are due at the beginning of class on the day the
assignment is due. If it is a group assignment, you can divide the work among the members, but
make sure you understand everything. If it is an individual assignment, you are encouraged to
work with others, but the final product should reflect your own understanding of the material. Do
not turn in work that you have copied from another student. Understanding how to answer the
questions asked in the assignments is a “necessary condition” to doing well in the exams.

Attendance Policy and Class Participation

Grading class participation is necessarily subjective. Some of my criteria for evaluating effective
class participation include:

1. Is the participant prepared? Do comments show evidence of analysis of the case? Do
   comments add to our understanding of the situation? Does the participant go beyond simple
   repetition of case facts, adding analysis and conclusions? Do comments show an
   understanding of theories, concepts, and analytical tools presented in class lectures or reading
   materials?

2. Is the participant a good listener? Are the points made relevant to the discussion? Are they
   linked to the comments of others? Is the participant willing to interact with other class
   members?
3. Is the participant an effective communicator? Are concepts presented in a concise and convincing fashion?

Your grade for class participation is not a direct function of the amount of "air time" you take up. In general, I will evaluate you on how well you respond to my questions and on how effectively you take into account the comments and analyses of your classmates. In situations where multiple students have raised their hands to speak, I will try to call on the student with the least cumulative air time to that date. This procedure, carried out over the course of the semester, should help to ensure that everyone who is well prepared and wants to contribute will have the opportunity to do so.

A necessary, but not sufficient, condition for class participation is that you come to class. In order to obtain a grade for class participation you must attend the class sessions (please let me know in advance if you cannot attend a session).\(^1\) Attendance will be mandatory during the days of guest lecture and project presentation and questions/comments during presentations are highly valued.

SOFTWARE AND COMPUTER LAB INFORMATION

You can purchase SAS (version 9.1) for free from SELL (Software Evaluation and Licensing Library). Go to the CIS website at http://cis.tamu.edu/customer-sales/sell/sas.php to get more information on how to obtain the SAS license. You can also call them at 862-4104 to obtain a copy of it. When you pick up the SAS CDs from SELL, you will also receive a 1-page instruction sheet. Follow these instructions to install SAS. If you have any problems with installation, contact CIS by phone or by email at sashelp@tamu.edu. If you would like to purchase SPSS, you can contact SELL. SPSS, ACCESS and SAS are also available in the several Open Access Labs in the campus (the closest to Wehner is in the West Campus Library). CIS also provides short courses on SAS that you might want to attend (http://cis.tamu.edu/shortcourses/#sas).

CLASS COMMUNICATION TOOL

Lecture materials and other information relevant to the course will be posted on Vista: http://elearning.tamu.edu/. Students are required to periodically check the course web page. Note that the only email I will be using is ram@mays.tamu.edu. Also note that I will contact students mainly by email at their TAMU Neo email account. If you do not have a Neo email account, please contact CIS at http://cis.tamu.edu/students/. I would not be sending emails to any other hosts such as Aol, Hotmail etc.

ACADEMIC ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this

\(^1\) Missing more than 10% of the sessions will seriously affect your participation grade.
legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please contact Disability Services, visit http://disability.tamu.edu/, call 979.845.1637, or go to Cain Hall, Room B118.

STUDENT FEEDBACK

I expect you to be involved with the class. You are strongly encouraged to contact me before, during or after the class, or during schedules office hours to raise or clarify any issue regarding the course, especially things that are not going well. If you hesitate to raise an issue publicly during class or if my office hours are inconvenient, please email me to share your concern or to schedule an appointment.

ACADEMIC INTEGRITY

It is the responsibility of students and instructors to help maintain scholastic integrity at the university by refusing to participate in or tolerate scholastic dishonesty. All policies concerning scholastic dishonesty found in the current Texas A&M University Relations apply, and if necessary, will be enforced.

Aggie Honor Code: “An Aggie does not lie, cheat, or steal or tolerate those who do.” Upon accepting admission to Texas A&M University, a student immediately assumes a commitment to uphold the Honor Code, to accept responsibility for learning, and to follow the philosophy and rules of the Honor System. Students will be required to state their commitment on examinations, research papers, and other academic work. Ignorance of the rules does not exclude any member of the Texas A&M University community from the requirements or the processes of the Honor system. On all course work, assignments, and examinations at Texas A&M University, the following Honor pledge shall be preprinted and signed by the student: “On my honor, as an Aggie, I have neither given nor received unauthorized aid on this academic work.” For additional information please visit: http://www.tamu.edu/aggiehonor/

If it is determined that scholastic dishonesty is taking place, I will follow the procedures specified in the student rules and take the appropriate disciplinary action (a minimum of which will be a zero on the work turned in). Individual assignments (quizzes, case analyses, examinations, and homework) are to be individual efforts unless otherwise instructed. Cheating, plagiarism, fabrication, and misrepresentation will not be allowed.

Note: Plagiarism consists of passing off as one's own the ideas, words, writings, etc., which belong to another. In accordance with this definition, you are committing plagiarism if you copy the work of another person and turn it in as your own, even if you have permission from that person. Of particular relevance in this course, it is important to note that fabrication includes falsifying research data.

COPYRIGHTED MATERIALS

The handouts and lecture materials used in this course are copyrighted. Handouts include all materials generated for this class, which include but are not limited to syllabi, exams, and all in-
class materials. Because these materials are copyrighted, you do NOT have the right to copy or reproduce these materials unless permission is expressly granted.

MAYS FOOD & BEVERAGE POLICY

We are fortunate to have beautiful and state-of-the-art classrooms in the Wehner Building. All of us want to maintain the high quality condition of these classrooms for current and future students. Thus, please do NOT bring BEVERAGES, FOOD, TOBACCO PRODUCTS, OR ANIMALS (unless approved) into our classroom. Your understanding of the necessity for this policy and cooperation will be greatly appreciated.
## COURSE SCHEDULE

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Readings</th>
<th>Assignments/Tasks Due</th>
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<tbody>
<tr>
<td>25-Aug</td>
<td>Course Introduction</td>
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<tr>
<td>27-Aug</td>
<td>Fundamentals of Data Analysis</td>
<td>SR articles&lt;sup&gt;3&lt;/sup&gt;</td>
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<tr>
<td>1-Sep</td>
<td>Review of Regression Analysis</td>
<td>CR Article 1, SR articles</td>
<td>Group Composition Due</td>
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<tr>
<td>3-Sep</td>
<td>Analyzing and Manipulating Data I</td>
<td>SR articles</td>
<td>Assignment 1 Due</td>
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<tr>
<td>8-Sep</td>
<td>Marketing Applications of Regression Models I</td>
<td>SR articles</td>
<td></td>
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<tr>
<td>10-Sep</td>
<td>Group Exercises: SAS</td>
<td></td>
<td>Group Assignment 1 Due</td>
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<tr>
<td>15-Sep</td>
<td>Guest lecture on specialized Marketing databases</td>
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<tr>
<td>17-Sep</td>
<td>Analyzing and Manipulating Data II</td>
<td>Articles from CR, SR articles</td>
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<tr>
<td>22-Sep</td>
<td>Analyzing and Manipulating Data II</td>
<td>SR articles</td>
<td>Assignment 2 Due</td>
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<tr>
<td>24-Sep</td>
<td>Analyzing and Manipulating Data III</td>
<td>SR articles</td>
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<tr>
<td>29-Sep</td>
<td>Analyzing and Manipulating Data IV</td>
<td>SR articles</td>
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<td>1-Oct</td>
<td>Preview for Midterm Exam</td>
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<td>Assignment 3 Due</td>
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<td>6-Oct</td>
<td>Midterm Exam</td>
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<tr>
<td>8-Oct</td>
<td>Response Analysis Techniques</td>
<td>SR articles</td>
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<tr>
<td>13-Oct</td>
<td>Project Consultation Day</td>
<td></td>
<td>Project Description Due</td>
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<tr>
<td>15-Oct</td>
<td>Customer Segmentation Models I</td>
<td>CR Articles 3-4, SR articles</td>
<td></td>
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<tr>
<td>20-Oct</td>
<td>Customer Segmentation Models II</td>
<td>CR Article 5, SR articles</td>
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<tr>
<td>22-Oct</td>
<td>Marketing Applications of Discrete Models</td>
<td>SR articles</td>
<td>Group Assignment 2 Due: GuestFirst Hotel</td>
</tr>
<tr>
<td>27-Oct</td>
<td>Brand Choice Analysis</td>
<td>SR articles</td>
<td></td>
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<sup>2</sup> The schedule is subject to change according to the instructor's discretion to accommodate guest lectures.

<sup>3</sup> CR: Course Reader; SR: Supplementary Readings
<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>29-Oct</td>
<td>Customer Lifetime Analysis</td>
<td>SR articles</td>
</tr>
<tr>
<td>3-Nov</td>
<td>Cluster Analysis</td>
<td>SR articles</td>
</tr>
<tr>
<td>5-Nov</td>
<td>Project Consultation Day</td>
<td></td>
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<tr>
<td>10-Nov</td>
<td>Project Consultation Day</td>
<td>Assignment 4 Due</td>
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<tr>
<td>12-Nov</td>
<td>Perceptual Mapping, RFM Models</td>
<td>SR articles</td>
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<tr>
<td>17-Nov</td>
<td>Guest Lecture</td>
<td></td>
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<tr>
<td>19-Nov</td>
<td>Project Presentations</td>
<td>Presentations by Groups A, B, C</td>
</tr>
<tr>
<td>24-Nov</td>
<td>Project Presentations</td>
<td>Presentations by Groups D, E, F</td>
</tr>
<tr>
<td>26-Nov</td>
<td>Recap of the course and review for final exam</td>
<td></td>
</tr>
<tr>
<td>Dec 1</td>
<td>No class; Redefined Day</td>
<td></td>
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</table>

Final exam is scheduled for Dec 8\(^{th}\) 10:30 to 12:30 (Click here for the official exam schedule)