BUS 294a: Data Analytics Field Project  
Course Syllabus  
Spring 2018

COURSE DESCRIPTION

We are now in an era of voluminous real-time data, fast affordable computing, and a data-driven decision making. Firms across the spectrum are gathering detailed real-world data on their customers, competitors and marketplace. This vast volume of information will provide significant competitive advantage to companies and managers who can leverage these data and derive meaningful managerial insights.

The Data Analytics Field Project is a 4-credit course that provides an opportunity for students interested in data analytics to apply their skills and knowledge to solving actual client problems, assessing client’s business opportunities and challenges, and generally adding value to the client’s business under the supervision of a faculty member.

The Data Analytics Field Project requires students to apply principles and frameworks across the Brandeis curriculum for a client organization. Client projects would involve unique challenges in multiple facets of a business organization, such as finance, marketing, business strategy and operations management. These could include:

- Evaluating the pros and cons of a prospective investment
- Evaluating the market opportunity for a new or updated product or service
- Construct a product development plan for a new product or product enhancement
- Assess market demand and forecast sales for a product or service
- Evaluate the issues for a failing product or service to develop an appropriate marketing strategy
- Prepare an integrated marketing plan for a new or existing product or service
- Evaluating the ROI for the firm’s existing advertising strategy or social media campaign
- Evaluate pricing options for a new or existing product or service and develop a pricing plan that meets the product and company goals
- Analyze distribution options and develop a distribution plan for a new product or service
• Assess the sustainability of a project under consideration including environmental concerns and costs

The course culminates in a final client presentation before the end of the semester in which it is undertaken. Each consulting field project team will consist of 3 to 5 students and an instructor, who will serve as the project manager.

The primary student outcome is to gain experience evaluating and analyzing real issues faced by clients, conduct in depth and sophisticated data analysis and market research and understand how quantitative business decisions are made with the use of analytics.

The projects will expose students to a wide array of topics essential to all firms in a data-driven competitive marketplace. Sponsoring organizations will range in size and scope from small, local companies to larger multi-region or global companies. Students’ work will primarily involve independent research including both on-site work at client organizations and external research. The amount of on-site involvement in a client organization will depend on the nature of the project. Projects involving the evaluation of new business opportunities, for example, might require much more external analysis and less internal time than one focused on existing product enhancements, which would include more time spent reviewing and analyzing client data.

Most projects will require conducting interviews with internal and external parties, sometimes with minimal or no introductions. Accordingly, English language skills and the willingness to contact and interview strangers via telephone or in person are important for the success of the projects.

The Instructor will meet with each team individually for 45 to 60 minutes every week to review the Work Plan and monitor team progress. In addition, on a few occasions all students will meet together with the Instructor during the semester to discuss various topics - creating proposals and work plans, making effective presentations, methods for analysis, client relationship management and conducting interviews - which will be an important way for students to learn about the other team’s project.

**LEARNING GOALS & OUTCOMES**

• Opportunity to connect classroom learning with real world experience doing a project for top companies
• Conduct primary research about the client company, including interviews with industry experts and analyzing data
• Opportunity to analyze client data and apply analytics principles, to develop clear actionable deliverables for the firm
• Collaborate with team members, concluding with a presentation to management
• Expose students to the internal operations and decision-making within a business organization
• Understand how marketers analyze and evaluate market challenges and opportunities, and then develop actionable, detailed programs to take advantage of or correct the situation
• Develop skills in market research within the organization and in the industry, business and market analysis and situational evaluation, and developing recommendations for real-world challenges, opportunities and problems.
• Develop consulting skills, specifically:
  o Interacting with a client
  o Team work
  o Making effective executive presentations
  o Conducting interviews with third party sources of information
• Enhance students’ resumes with experience working in real companies.

This course can be noted on your resume with the company name, subject to its approval. Be careful to state “student consultant” and not suggest or state you were an employee of the sponsoring organization. It provides very interesting topics to discuss at a job interview and distinguishes you from the competition.

COURSE PRE-REQUISITES

Students should have –
1. A background in statistics, such as ECON210 or equivalent.
2. Completed or be concurrently enrolled in BUS211f and BUS212f (Analyzing Big Data I and II).
3. Basic knowledge of statistical software such as Stata, SPSS, Excel or R (preferred)

Students not satisfying these requirements should contact the instructor.

COURSE REQUIREMENTS

Attendance and Participation

Attendance and active participation at the weekly team meetings is required. Interaction with team members is an important aspect of a successful consulting experience and students will be expected to demonstrate collaborative teamwork in this course.
Academic Honesty

The instructor will enforce all University rules, especially those regarding to academic honesty and integrity. Note: there is a zero tolerance level in this area. Plagiarism is cheating. The use of another’s material without permission and without recognition is cheating. This applies to text books, solution manuals, study guides, a friend's assignment, past assignments, internet resources or any other material irrespective of the source. You are expected to be honest in all of your academic work. Please consult Brandeis University Rights and Responsibilities for all policies and procedures related to academic integrity. Students may be required to submit work to TurnItIn.com software to verify originality. Allegations of alleged academic dishonesty will be forwarded to the Director of Academic Integrity. Sanctions for academic dishonesty can include failing grades and/or suspension from the university. Citation and research assistance can be found at LTS - Library guides

Disabilities

If you are a student with a documented disability on record at Brandeis and wish to have a reasonable accommodation made for you in this class, please see your program advisor and the consulting field project instructor. Please keep in mind that reasonable accommodations are not provided retroactively.

Grading

The individual student grade will be based on the instructor’s assessment of the student’s contribution, participation and work product demonstrated at the weekly/bi-weekly meetings (60% of the grade) and the other 40% of the grade will be based on the student’s contribution, preparation and oral delivery of the presentations (mid-semester and end of semester).

The individual student grade will consider such factors as: did the student make an effective contribution to the project; did the student demonstrate commitment and collaboration, arrive on time to every meeting; did the student demonstrate resourcefulness and creativity in generating ideas and strategies to pursue the ideas; did the student meet deadlines; did the student demonstrate critical thinking, or did they rely on others to do the thinking for them; did the student demonstrate mastery of the subject matter by the end of the project; did the student effectively participate in every weekly meeting; was the student effective in getting information and obtaining important interviews to advance the project; did the student make effective presentations?
Any student team that has not submitted a copy of the final presentation and supporting documentation to the client and the instructor by the end of the semester will receive an Incomplete (“EI”) or Failing Grade in the course.

**IMPORTANT THINGS TO KNOW**

This class differs in many ways from the conventional course, which will create a number of challenges during the semester. In particular, unlike the traditional class with its well-defined student-instructor role, you must deal with multiple people relationships. First, my role is more of a project manager than a traditional lecturer and, depending on how well the project is progressing, I will have anywhere from moderate to heavy involvement in your project. You must also deal with your team members who may have different ideas and work styles. You also have the client organization, with multiple people playing different roles in the project. Your success in this course will depend on your ability to cooperate, motivate, and otherwise work with a number of people as opposed to working independently, as in a traditional course.

In taking this class you will experience a number of real-world frustrations, including:

- Delays in getting data from clients
- Delays in setting up interviews
- Delays in approvals of interview guides and other materials
- Changing project scopes: bigger, narrower, or different
- Clients are unsure of what they are seeking from the project
- Your project does not seem important to your client
- Clients not responding to calls and emails and requests for project reviews
- Interviews are hard to do; people may not want to talk to you
- Client sponsors leave their organizations (especially in this economy)
- The numbers do not support the conclusion – *go back to the drawing board*

I want to assure you that this is the reality of consulting and the business world. Clients are very busy and, in some cases, various individuals in the client organization might be in survival mode to keep their jobs. *It is essential that you apply critical thinking to your work – question assumptions; change course, when necessary; ask if the data supports the hypothesis; and, think about implications of your findings.*

This course will expose you to these real-world challenges and frustrations, and more importantly, teach you how to deal with them. For example, you will learn how persistence and diplomacy are needed to get others to cooperate with you, especially when they may not have an incentive to do so. You will also learn how to deal with frustrating impasses and seeming
dead ends in research by finding alternative approaches for working around the impasse to achieve the project objectives. **I encourage you to resist re-sending emails when you don’t get a response you need; phone calls often have a higher probability of connecting you to someone.**

## EXPECTATIONS

The following is an elaboration of what the instructor expects from student teams and how grades will be determined (note that the first two items are of paramount importance to client satisfaction and avoiding getting a low grade). **Remember, in this course you are each an ambassador of Brandeis IBS, the client company you are representing and yourselves – so always leave favorable impressions.**

- **Error-free work:** facts, figures, and spreadsheets must be error-free. The instructor and - - in particular - - the client must not become the quality control department. Consistent errors in work will lead to a loss of client confidence and a low grade in the course.

- **Professional conduct:** Teams must maintain a high level of professionalism in undertaking their work including: maintaining client confidentiality; quickly responding to client inquiries; showing up for meetings and conference calls on time; dressing appropriately for meetings; and fulfilling commitments (e.g., deadlines and deliverables).

- **Steady work pace:** Teams must start their work early in the semester and sustain a steady work pace throughout. The pace of work will be judged in relation to a master work plan and a weekly progress review. Cramming at the end of the semester will inevitably lead to poor performance. Midterms, papers, presentations, and other requirements in other classes are no excuse for not fulfilling commitments to your client and to your project.

- **Success in this four-credit course is based on the expectation that students will spend a minimum of 9 hours of study time per week in preparation for class (readings, papers, discussion sections, preparation for exams, etc.).**

- **Substantial research:** Teams should push hard and deep into their research efforts by collecting and analyzing key data that sheds new light on clients’ issues and opportunities. This includes conducting interviews, creating databases, preparing comprehensive analyses, finding valuable reports, and other non-trivial research efforts. Relying exclusively on Google searches will be judged to be a minimal effort.

- **Adherence to standard documentation and presentation standards.** The class has standard documents/formats for work plans and progress reviews. Of particular importance is the standard format for making presentations. It is important to stick to these standards throughout the course.
• Self-motivation: Students should be eager to pursue their project work as a matter of self-interest in helping the client and learning about the nature of consulting work and the real estate industry, in particular. Accordingly, students should be self-motivated to work at a steady pace pursuing deeper research and analysis. The need to continually prod teams to accomplish various tasks will negatively affect their grades.

• Willingness to listen to instructor and/or client recommendations. A team’s resistance to incorporating the instructor’s suggestions and/or the wishes of clients will negatively affect their grades.

• Independence: The ability of teams to work self-sufficiently is a positive attribute, depending on the circumstances. To the extent that the scope of work requires instructor input - as most do - then instructor/team brainstorming is important, with the team working independently week to week on the research task. The need for intensive instructor input on matters that should be within the team’s capabilities will be negatively evaluated.

• Team work: Teamwork is an essential aspect of consulting work. Teams are expected to collaborate and split up the work on an equitable basis. Dysfunctional teams will be graded lower, and free riders will receive lower grades than their team mates. If a team member is not pulling his or her weight, then the other team members need to discuss it with that team member. If no progress is made, you should not hesitate to mention it to the Instructor.

• Presentation proficiency: Most projects require developing market projections. I expect that students know how to create R/Stata/Excel models for cash flow projections, return calculations, customer segmentation, regression and other sensitivity analyses. R will be the primary software tool. Marketing projections should be presented dynamically to clients using a projector, enabling clients to participate in the finishing touches to the model. Before such a meeting, the team should do a draft presentation for the instructor about a week in advance of the client presentation.

APPOINTMENTS

Outside of weekly team meetings, I will be available to meet with students during office hours and by appointment. If you need to speak to me, send me an email at branjan@brandeis.edu to schedule an appointment.
COURSE SCHEDULE

First Week: Initial Instructor / team meetings

- All registered students will meet with the Instructor to review the assigned projects and teams, discuss course expectations and for team members to get acquainted
- Available consulting projects will be discussed and assignments and teams will be identified on that date. Prof. Ranjan assigns students to each project.
- Discussion about the consulting process, professional conduct, progress reviews, and standard presentations
- Determine a date and time for weekly team meetings with Instructor
- The Instructor will schedule a meeting with the client to introduce the team members
- Prepare for initial client meeting by conducting initial research on the client organization, the topic involved in the project and develop questions to better define the project

Second Week: Initial client meetings to discuss projects and get acquainted.

Third Week: Each team will prepare a Project Charter and Weekly Work Plan, meet with the Instructor to review the Project Charter and Work Plan, and for a discussion of challenges, scope of work, resources to gather information, deadlines and progress review.

After Third Week: Each team will separately meet with the Instructor every week. All weekly meetings are mandatory. Each team should expect - in addition to the initial scope and workplan – the following milestones

- By then end of the second month – preliminary conclusions and supporting analysis
  - This will be reviewed by the instructor and will serve as a basis for a mid-point client meeting to gain feedback and additional guidance
- By the end of the third month – draft final report and presentation
  - This will be presented to the instructor for feedback in preparation for the final client presentation
- FINAL PRESENTATION – to be scheduled with client at one month prior to scheduled date