



**Rabb School of Continuing Studies**

**Course Syllabus**

**I. Course Information**

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**1. Course Name: Predictive Analytics**

**2. Course Number: RSAN160**

**3. July 19<sup>th</sup>, 2017 – September 26<sup>th</sup>, 2017; Distance Learning Course Week: Wednesday through Tuesday**

**4. Instructor's Name and Contact Information**

- Gregory Block, PhD
- gblock@brandeis.edu

You can contact me through discussion forums on our course web site: by replying to any of my posted messages, posting a new topic on the Questions and Comments forum, or posting to one of the various forums established for each class assignment.

To reach me privately, please use the Private Forum, which is also the method I will use to contact you.

**5. Document Overview**

This syllabus contains all relevant information about the course: its objectives and outcomes, the grading criteria, the texts and other materials of instruction, and of weekly topics, outcomes, assignments, and due dates.

Consider this your roadmap for the course. Please read through the syllabus carefully and feel free to share any questions that you may have. Please print a copy of this syllabus for reference.

**6. Course Description**

This course will focus on the fundamentals of predictive analytics as it relates to improving business performance.

The course will cover predictive models, key modeling techniques, scoring, non-parametric regression and classification, principal components analysis and dimension reduction, time series, quality control methods, multiple predictor variables, and decision trees. The course will utilize best practices and case studies to illustrate how predictive analytics can facilitate educated decision-making to reduce costs, increase revenues, and provide competitive advantage across a variety of industries.

**Relevant Programs**

- Graduate elective course for the MS in Strategic Analytics

**Prerequisites**

- RSAN101: Foundations of Data Science and Analytics

or

- RSAN110: Business Intelligence, Analytics and Decision Making

Please note that this course requires you have **familiarity with, or willingness to learn, the R programming language**. This may be a challenge for students unfamiliar with programming, which is why I chose a secondary textbook that explains how to program in R. If you are having trouble with

the programming language, I encourage you to reach out to your fellow students in the Q&A forum, as well as broaden your research to include introductory texts on R. While I understand that learning the programming language may be a challenge, it is a course outcome, so please bring an open mind to the exploration of R.

## **Welcome to Predictive Analytics!**

Thank you for registering for this course! I am looking forward to working with you this term as your instructor, and helping you to develop a solid understanding of online instructional design and the ability to apply those skills toward the design of e-learning projects. I have worked to make the procedures that we will use clear to everyone through this syllabus and through the materials posted in the LATTE course. Please familiarize yourself with these materials and feel free to ask me any questions that you may have. I am happy to work with you individually and as a class to help you to learn and apply the new instructional design skills and concepts presented in the course, and I encourage you to ask questions when you are unsure and respond to your classmates' questions when you believe you have the answer; in explaining how to approach problems, we learn more ourselves. We can all learn from each other, and I hope that we'll have open and enriching discussions as we move forward!

My full introduction and biography has been posted to our discussion forum (Introduce Yourself forum in Week 1). I look forward to reading your biographies and getting to know you as well. I sincerely hope you enjoy this course, and look forward to your contributions.

## **7. Materials of Instruction**

### **a. Required Texts**

- Applied Predictive Analytics: Principles and Techniques for the Professional Data Analyst, Dean Abbott, 2014. Wiley, ISBN: 978-1118727966.
- Mayor, E. (2015). Learning Predictive Analytics with R. Packt Publishing Ltd, ISBN 9781782169352

### **b. Required Software and Other Supplies**

- None

### **c. Recommended Text(s) / Journals**

- None

### **d. Online Course Content**

This section of the course will be conducted completely online using Brandeis' LATTE site, available at <http://latte.brandeis.edu>. The site contains the course syllabus, assignments, discussion forums, links/resources to course-related professional organizations and sites, and weekly checklists, objectives, outcomes, topic notes, self-tests, and discussion questions. Access information is emailed to enrolled students before the start of the course. To begin participating in the course, review the Welcome Message and the materials found in the Week 1 block.

## **8. Course Grading Criteria**

- Weekly required topic notes, available on the course site (in Latte)
- Weekly discussion posts, available on the course site (in Latte)
- 4 assignments, available on the course site (in Latte)

- Course project, including milestones - proposal, outline and rough draft

**Percentages earned per assignment**

Percent	Component
30 %	Weekly Discussions/Online participation
40 %	Assignments (4 at 10% each)
30 %	Course Project

***Weekly Discussions / Online Participation (30%, 3% per week)***

All student participation will be done online via LATTE. Each weekly block has a page that includes "Discussion Questions". This page describes the topics for discussion related to the course materials posted that week. Each topic description includes a series of discussion questions or other directions for providing a response.

To earn full credit for the Participation component of the grade, students will be expected to complete the following during weeks 1 through 10 of the course:

- Respond to at least 2 discussion topics each week. Post an original response to one topic by end of day Saturday, midnight EST, and to another by end of day Monday, midnight EST.
- Post at least 2 other substantive replies to the discussions each week by end of day Tuesday, midnight EST. These messages are replies to the original response messages of others, or replies to someone else's reply message. The assumption is that you will read through the posts of your classmates to enhance your learning; reply to those of your choice, based upon your own experiences and insights.
- Post messages on three different days of the course week. While you may post all the required original responses and replies before the due dates, it is important for you to be involved in the discussions throughout the week.

These discussion requirements are described within the **Discussion Questions** page within each weekly block on the course home page; they are also listed in the **Checklist** page for each week.

Each of the two required **original response** messages contributes 30% of the weekly participation grade. Maximum grade is given for each of these if the posted message:

- Answers all questions asked and follows all directions specified in the topic description.
- Includes shared industry experiences and/or relates concepts to the topic notes and readings as appropriate.
- Provide at least two recent citations beyond the course textbooks or required reading. Note that **all sources must be recent, high-quality, academic, peer-reviewed sources, denoted with in-text-citations and properly referenced using APA format** (refer to the Research Help > Citing Sources" link in the LATTE Resources block). **Instructor's topic notes may not be cited.**
- Uses good scholarship, cites sources and follows proper grammar, spelling and format.
- Contains original content, states in the student's own words, rather than the words of the source. Minimizes the use of (or contains no) quoted material, images, graphs, charts or diagrams.
- Provides sufficient detail; **original responses should include a minimum of 200-300 words**. Some topics require lengthier responses in order to answer all of the questions.

Each of the two required **substantive reply** messages contributes 15% of the weekly participation grade. Maximum grade is given for each of these if the posted message:

- Provides substantive comments (beyond an "I agree" post) with follow-on points or questions to extend the conversation. **Substantive replies should include a minimum of 100-200 words.**
- Uses good scholarship, original content, cites sources and follows proper grammar, spelling and format
- Note that, as with the original response, **all sources must be recent, high-quality, academic, peer-reviewed sources, denoted with in-text-citations and properly referenced using APA format** (refer to the Research Help > Citing Sources" link in the LATTE Resources block). **Instructor's topic notes may not be cited.**

All discussion forum postings are subject to review for originality and adherence to academic honesty principles. Please see the section "Academic Honesty and Student Integrity" for more information.

Posting of discussion messages needs to be done in a timely manner so that others in the class have sufficient opportunity to review these and provide replies.

*Late Policy:*

- **Half credit** is deducted for an original response that is one day late.
- **No credit** is earned for original responses that are posted more than one day late.
- **No credit** is earned for substantive replies that are posted late.

Additionally, 10% of the weekly participation grade is based on your participation in the discussions throughout the week.

- Maximum grade is given for those that post messages to the weekly discussions forum on three (or more) days during the course week.
- Partial credit is given for those that post their messages to the weekly discussions forum on only one or two days of the course week.
- The online participation grade for each week is based on your contribution to the weekly discussion forum, for example "Week 1 Discussions". Posts to the forums set up for discussion of general questions and comments, exercises, or assignments are not considered in the weekly participation grade.

To summarize, the online participation grade for each week is based on the following requirements:

Weekly Requirement	Portion of Weekly Participation Grade
Post Original response #1 by Saturday Night	30%
Post Original response #2 by Monday Night	30%
Post Substantive reply #1 by Tuesday Night	15%
Post Substantive reply #2 by Tuesday Night	15%
Post messages to the weekly discussions forum on three different days	10%

Each week, the online participation in these discussions contributes 3% to the overall course grade. Over ten weeks, this amounts to 30% of the overall course grade.

### **Assignments (40%)**

There are 4 assignments during the semester. Each is worth 10% of the course grade. Each of these assignments will be based on a problem assigned from assigned chapters in the course textbook. The assignment is expected to be 750-words in length, and to provide 2-3 recent, high-quality, scholarly references per page. Use APA format for citations. Attach the paper in MS Word format to each assignment.

Please note that this course requires you **have familiarity with, or willingness to learn, the R programming language**. This may be a challenge for students unfamiliar with programming, which is why I chose a textbook that explains how to program in R. If you are having trouble with the programming language, I encourage you to reach out to your fellow students in the Q&A forum, as well as broaden your research to include introductory texts on R. While I understand that learning the programming language may be a challenge, it is a course outcome, so please bring an open mind to the exploration of R.

Each assignment must:

- Provide at least two recent citations per page beyond the course textbooks or required reading. Note that **all sources must be recent, high-quality, academic, peer-reviewed sources, denoted with in-text-citations and properly referenced using APA format** (refer to the Research Help > Citing Sources” link in the LATTE Resources block). Instructor’s topic notes may not be cited.
- Use good scholarship, cites sources and follows proper grammar, spelling and format.
- Contain original content, states in the student’s own words, rather than the words of the source. Minimizes the use of (or contains no) quoted material, images, graphs, charts or diagrams.

Assignments are due in weeks 4, 5, 7 & 9

Submission of each assignment is due by Tuesday at midnight in the week it has been assigned.

*Late Policy: Half credit is deducted for an assignment that is submitted one day late. No credit is earned for an assignment submitted more than one day late.*

### **Evaluation:**

Credit may be earned by satisfying the following criteria. Partial credit will be awarded as applicable based on the degree to which the criteria are met.

Criteria	Maximum Points
Clear explanation of key issues: answers all questions posted in the assignment steps.	30 points
Logically organized: key points, arguments, and analysis are easily identified.	20 points
Appropriate research and analysis based on identified industry.	20 points
Conclusions and recommendations/plans of action are clearly articulated.	15 points

Proper organization and logical flow of analysis based on APA formatting. Spelling/grammar/format: <ul style="list-style-type: none"> <li>• Proper grammar, spelling, punctuation.</li> <li>• 3<sup>rd</sup> person objective viewpoint.</li> <li>• Professional writing and syntax.</li> <li>• Minimum 750 words.</li> </ul>	15 points
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**Course Project (30%)**

In the course project, the student must identify a challenging business scenario, either in her career experience or through independent study, and examine the scenario from the perspective of a predictive analytics solution. The project must include a predictive analytics algorithm (such as clustering or decision tree) to analyze a dataset, such as sales history, US census data, polling results, web traffic, clinical studies; the dataset may be masked to preserve proprietary or trade information. The student may choose the data mining tool used to analyze the dataset.

There will be three milestones along the way. The milestones are not graded, but only to provide student feedback. These milestones include:

- Course Project Proposal – Week 3
- Course Project Outline – Week 6
- Course Project Rough Draft – Week 8
- Course Project – Week 10

The course project must:

- Follow the principles of problem-based research (Ellis & Levy, 2008), including the articulation of a problem statement, development of a hypothesis, determination of methodology, analysis of results and a conclusion that addresses the hypothesis.
- Provide at least two recent citations per page beyond the course textbooks or required reading. Note that all sources must be recent, high-quality, academic, peer-reviewed sources, denoted with in-text-citations and properly referenced using APA format (refer to the Research Help > Citing Sources” link in the LATTE Resources block). Instructor’s topic notes may not be cited.
- Use good scholarship, cites sources and follows proper grammar, spelling and format.
- Contain original content, states in the student’s own words, rather than the words of the source.
- Minimize the use of (or contains no) quoted material, images, graphs, charts or diagrams.
- Be at least 2500 words in length.
- The course project will be in the format of a Microsoft Word document, and will be due on the last day of Week 10

Note that the course project is intended to be open-ended so that you have the opportunity to identify, articulate, develop hypotheses on, and research a problem statement of your choice.

**Bibliography**

Ellis, T., & Levy, Y. (2008). Framework of Problem-Based Research: A guide for novice researchers on the development of a research-worthy problem. (11, Ed.) *Informing Science: International Journal of an Emerging Transdiscipline*, 17-33.

*Late Policy: The Course Project will not be accepted beyond the due date.*

**Evaluation:**

Credit may be earned by satisfying the following criteria. Partial credit will be awarded as applicable based on the degree to which the criteria are met.

Criteria	Maximum Points
Clear explanation of key issues: answers all questions posted in the assignment steps.	30 points
Logically organized: key points, arguments, and analysis are easily identified.	20 points
Appropriate research and analysis based on identified industry.	20 points
Conclusions and recommendations/plans of action are clearly articulated.	15 points
Proper organization and logical flow of analysis based on APA formatting. Spelling/grammar/format: <ul style="list-style-type: none"><li>• Proper grammar, spelling, punctuation.</li><li>• 3<sup>rd</sup> person objective viewpoint.</li><li>• Professional writing and syntax.</li><li>• Minimum 2500 words.</li></ul>	15 points

**II. Weekly Information**

On the course site, the home page contains 10 weekly blocks, one for each week of the course. Within each weekly block on the home page, you will find information and resources about the activities for each week:

- Overview: Checklist, and Outcomes
- Discussions
- Topic Notes & Other Required Readings
- Additional Readings
- Assignments / Course Project Milestones

Initially some of these items (related to discussions, assignments or assessments) will be hidden on the course home page. As we come to the appropriate point in the course, they will become visible and available. A schedule for availability is included within this syllabus.

Most of the items listed in the checklists are required for this course, but some are highlighted as "[optional]" for this course. As your schedule permits, you are encouraged to complete the optional work, as it will benefit your learning.

The following pages of this syllabus present a summary of the weekly objectives, outcomes, readings, assignments, and assessments.

- The chapter readings for both books are planned to generally follow the sequence of the weekly topic notes.
- Some of the references to PMBOK Guide readings include mention of the weekly topic that is highlighted within the chapter.

<b>Week 1</b>		<b>Introduction to Predictive Analytics</b>	
Outcomes	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Become familiar with the R programming language</li> </ul>		
Readings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics: Chapter 1</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: Chapter 1</li> <li><input type="checkbox"/> Week 1 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 1 Additional Readings (optional)</li> </ul>		
Audio/Video	<ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Introduction to Predictive Analytics</a> (38:14)</li> </ul>		
Assignments / Assessments / Self-Assessments	<ul style="list-style-type: none"> <li><input type="checkbox"/> Complete the Academic Integrity Agreement</li> <li><input type="checkbox"/> Watch the Welcome Session Video</li> <li><input type="checkbox"/> Introduce yourself within the Introduce Yourself forum</li> <li><input type="checkbox"/> Week 1 Discussion Topics (3%)</li> </ul>		
<b>Week 2</b>		<b>Setting Up the Problem</b>	
Outcomes	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how the R programming language can be used for graphics</li> </ul>		
Readings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics: chapter 2</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: chapter 2 <ul style="list-style-type: none"> <li><input type="checkbox"/> Assignment #1: Downloading and Installing R. Due by Tuesday, Week 2</li> </ul> </li> <li><input type="checkbox"/> Week 2 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 2 Additional Readings (optional)</li> </ul>		
Audio/Video	<ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">When Big Data and Predictive Analytics Collide</a> (31:01)</li> </ul>		
Assignments / Assessments / Self-Assessments	<ul style="list-style-type: none"> <li><input type="checkbox"/> Week 2 Discussion Topics (3%)</li> </ul>		
<b>Week 3</b>		<b>Understanding the Data</b>	
Outcomes	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how the R programming language can be used for advanced graphics</li> </ul>		
Readings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics: chapter 3</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: chapter 3</li> <li><input type="checkbox"/> Week 3 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 3 Additional Readings (optional)</li> </ul>		
Audio/Video	None		

Assignments / Assessments / Self-Assessments	<input type="checkbox"/> Week 3 Discussion Topics (3%) <input type="checkbox"/> Course Project Proposal
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<b>Week 4</b>		<b>Preparing the Data</b>	
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how to perform cluster analysis with R</li> </ul>		
<b>Readings</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics: chapters 4 and 5</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: chapters 4 &amp; 5 <ul style="list-style-type: none"> <li><input type="checkbox"/> Assignment #3: Multiple Linear Regression in R. Due by Tuesday, Week 4</li> </ul> </li> <li><input type="checkbox"/> Week 4 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 4 Additional Readings (optional)</li> </ul>		
<b>Audio/Video</b>	None		
<b>Assignments / Assessments / Self-Assessments</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Assignment #1 (10%)</li> <li><input type="checkbox"/> Week 4 Discussion Topics (3%)</li> </ul>		
<b>Week 5</b>		<b>Descriptive Modeling</b>	
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify the differences between descriptive modeling vs. predictive modeling</li> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how to perform principal component analysis with R</li> </ul>		
<b>Readings</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics: chapters 6 and 7</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: chapter 6</li> <li><input type="checkbox"/> Week 5 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 5 Additional Readings (optional)</li> </ul>		
<b>Video</b>	None		
<b>Assignments / Assessments / Self-Assessments</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Assignment #2 (10%)</li> <li><input type="checkbox"/> Week 5 Discussion Topics (3%)</li> </ul>		
<b>Week 6</b>		<b>Predictive Modeling</b>	
<b>Outcomes</b>	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify the differences between descriptive modeling vs. predictive modeling</li> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how to perform linear regression with R</li> </ul>		

Readings	<input type="checkbox"/> Applied Predictive Analytics: chapter 8 <input type="checkbox"/> Learning Predictive Analytics with R: chapter 9 <input type="checkbox"/> Assignment #5: Residuals Analysis. Due by Tuesday, Week 6 <input type="checkbox"/> Week 6 Topic Notes and Readings <input type="checkbox"/> Week 6 Additional Readings (optional)
Audio/Video	None
Assignments / Assessments / Self-Assessments	<input type="checkbox"/> Week 6 Discussion Topics (3%) <input type="checkbox"/> Course Project Outline
<b>Week 7ek 7</b>	<b>Decision Trees</b>
Outcomes	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify the differences between descriptive modeling vs. predictive modeling</li> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how classification trees are used in R</li> </ul>
Readings	<input type="checkbox"/> Applied Predictive Analytics, chapter 9 <input type="checkbox"/> Learning Predictive Analytics with R: chapter 11 <input type="checkbox"/> Week 7 Topic Notes and Readings <input type="checkbox"/> Week 7 Additional Readings (optional)
Audio/Video	<input type="checkbox"/> <a href="#">Wisdom of Crowds: Using Ensembles of Predictive Models</a> (6:57)
Assignments / Assessments / Self-Assessments	<input type="checkbox"/> Assignment #3 <input type="checkbox"/> Week 7 Discussion Topics (3%)

<b>Week 8</b>	<b>Model Ensembles</b>
Outcomes	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how to use multilevel analysis in R</li> </ul>
Readings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics, chapter 10</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: chapter 12</li> <li><input type="checkbox"/> Week 8 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 8 Additional Readings (optional)</li> </ul>
Audio/Video	<ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Predictive Analytics: Text Analytics &amp; Text Mining (56:57)</a></li> </ul>
Assignments / Assessments / Self-Assessments	<ul style="list-style-type: none"> <li><input type="checkbox"/> Week 8 Discussion Topics (3%)</li> <li><input type="checkbox"/> Course Project Draft</li> </ul>
<b>Week 9</b>	<b>Text Mining</b>
Outcomes	<ul style="list-style-type: none"> <li>• Explain what predictive analytics are, and related key concepts including model ensembles, model deployment, and text analytics</li> <li>• Identify the differences between descriptive modeling vs. predictive modeling</li> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the business issues that predictive analytics addresses and resolves</li> <li>• Understand how to use text analytics in R</li> </ul>
Readings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Applied Predictive Analytics, chapter 11</li> <li><input type="checkbox"/> Learning Predictive Analytics with R: chapter 13</li> <li><input type="checkbox"/> Week 9 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 9 Additional Readings (optional)</li> </ul>
Audio/Video	<ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Real-Time Predictive Analytics with Big Data: From Deployment to Production (1:06:24)</a></li> </ul>
Assignments / Assessments / Self-Assessments	<ul style="list-style-type: none"> <li><input type="checkbox"/> Week 9 Discussion Topics (3%)</li> <li><input type="checkbox"/> Assignment #4</li> <li><input type="checkbox"/> Continued work on course project</li> </ul>

Week 10	The Future of Predictive Analytics
Outcomes	<ul style="list-style-type: none"> <li>• Describe how predictive analytics are utilized in different fields and industries</li> <li>• Identify and describe the ways in predictive analytics can have a strategic impact within an organization</li> <li>• Describe the likely path predictive analytics in the future, as well as of possible career choices</li> </ul>
Readings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Predictive Analytics: pages 218-227</li> <li><input type="checkbox"/> Week 10 Topic Notes and Readings</li> <li><input type="checkbox"/> Week 10 Additional Readings (optional)</li> </ul>
Audio/Video	<ul style="list-style-type: none"> <li><input type="checkbox"/> <a href="#">Big Data: The Future of Predictive Analytics</a> (3:14)</li> </ul>
Assignments / Assessments / Self-Assessments	<ul style="list-style-type: none"> <li><input type="checkbox"/> Week 10 Discussion Topics (3%)</li> <li><input type="checkbox"/> Course Project Due by Tuesday, Week 10 (30% of grade)</li> </ul>

### III. Course Policies and Procedures

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#### 1. Late Policies

See the section titled "Description of Grading Components" for the criteria for handling late work related to the online participation components of this course. In order to allow adequate time for students to respond to the messages of others, it is especially important that messages from each student be posted in a timely manner. Grading penalties are incurred for any late postings.

The Course Project will not be accepted late.

#### 2. Grading Standards

- Students are responsible to explore each week's materials and submit required work by their due dates. On average, a student can expect to spend approximately 3-5 hours per week reading and approximately 5-8 hours per week completing assignments and posting to discussions. The calendar of assignments and due dates is located at the end of this syllabus, and all assignments are due by the close of the associated week (Tuesday evenings, midnight EST).
- How points and percentages equate to grades

100-94	A	76-73	C
93-90	A-	72-70	C-
89-87	B+	69-67	D+
86-83	B	66-63	D
82-80	B-	62-60	D-
79-77	C+	59 or <	F

#### 3. Feedback

Feedback will be provided on all assignments and the Final Exam within 10 days of the due date. In each case, review comments are provided through the relevant LATTE assignment activity.

Feedback about online participation will be provided through the "Participation Feedback" assignment activity within each weekly block. Participation grading will be completed within 7 days of the due date.

Grades for all of the course assignments and assessments are viewable through the LATTE "Grades" facility within the Left-Frame block on our course home page.

#### 4. Confidentiality

- We can draw on the wealth of examples from our organizations in class discussions and in our written work. However, it is imperative that we not share information that is confidential, privileged, or proprietary in nature. We must be mindful of any contracts we have agreed to with our companies. In addition, we should respect our fellow classmates and work under the assumption that what is discussed here (as it pertains to the workings of particular organizations) stays within the confines of the classroom.
- For your awareness, members of the University's technical staff have access to all course sites to aid in course setup and technical troubleshooting. Program Chairs and a small number of Graduate Professional Studies (GPS) staff have access to all GPS courses for oversight purposes. Students enrolled in GPS courses can expect that individuals other than their fellow classmates and the course instructor(s) may visit their course for various purposes. Their intentions are to aid in technical

troubleshooting and to ensure that quality course delivery standards are met. Strict confidentiality of student information is maintained.

#### 5. Class Schedule

Week	Online Week Starts Wednesday	Through Tuesday
1	July 19	July 25
2	July 26	August 1
3	August 2	August 8
4	August 9	August 15
5	August 16	August 22
6	August 23	August 29
7	August 30	September 5
8	September 6	September 12
9	September 13	September 19
10	September 20	September 26

#### 6. Calendar of Assignment Availability and Due Dates

Assignment	Available	Due
Assignment #1	Wed, Week 4	Tues, Week 4
Assignment #2	Wed, Week 5	Tues, Week 5
Assignment #3	Wed, Week 7	Tues, Week 7
Assignment #4	Wed, Week 9	Wed, Week 9
Course Project Proposal	Wed, Week 3	Tues, Week 3
Course Project Outline	Wed, Week 6	Tues, Week 6
Course Project Draft	Wed, Week 8	Tues, Week 8
Course Project	Wed, Week 10	Tues, Week 10
Responses to 2 Discussion Topics	Weds of each week	1 by Sat each week; 1 by Mon each week
Other Substantive Posts (2 per week)		2 by Tues each week

#### IV. University and Division of Graduate Professional Studies Standards

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Please review the policies and procedures of Graduate Professional Studies, found at <http://www.brandeis.edu/gps/current-students/academic-information/student-handbook.html>. We would like to highlight the following.

##### **Learning Disabilities**

If you are a student with a documented disability on record at Brandeis University and wish to have a reasonable accommodation made for you in this course, please contact the Rabb School Disability Coordinator immediately.

##### **Academic Honesty and Student Integrity**

Academic honesty and student integrity are of fundamental importance at Brandeis University and we want students to understand this clearly at the start of the term. As stated in the Brandeis Rights and Responsibilities handbook, "Every member of the University Community is expected to maintain the highest standards of academic honesty. A student shall not receive credit for work that is not the product of the student's own effort. A student's name on any written exercise constitutes a statement that the work is the result of the student's own thought and study, stated in the student's own words, and produced without the assistance of others, except in quotes, footnotes or references with appropriate acknowledgement of the source." In particular, students must be aware that material (including ideas, phrases, sentences, etc.) taken from the Internet and other sources MUST be appropriately cited if quoted, and footnoted in any written work turned in for this, or any, Brandeis class. Also, students will not be allowed to collaborate on work except by the specific permission of the instructor. Failure to cite resources properly may result in a referral being made to the Office of Student Development and Judicial Education. The outcome of this action may involve academic and disciplinary sanctions, which could include (but are not limited to) such penalties as receiving no credit for the assignment in question, receiving no credit for the related course, or suspension or dismissal from the University.

Students may be required to submit work to [TurnItIn.com](https://www.turnitin.com) software to verify originality. TurnItIn is a tool that compares student assignment submissions to internet sources and a comprehensive database of other papers. It creates a report that provide a link to possible matches and a "similarity score". TurnItIn does not determine whether a paper has been plagiarized; individual faculty will make that judgment. All papers submitted to TurnItIn are kept in a separate reference database of Brandeis work, to be used solely for the purpose of detecting plagiarism in the future. Students retain copyright on their original course work. 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](#)

Further information regarding academic integrity may be found in the following publications: "In Pursuit of Excellence - A Guide to Academic Integrity for the Brandeis Community", "(Students') Rights and Responsibilities Handbook", AND " Graduate Professional Studies Student Handbook". You should read these publications, which all can be accessed from the Graduate Professional Studies Web site. A student that is in doubt about standards of academic honesty (regarding plagiarism, multiple submissions of written work, unacknowledged or unauthorized collaborative effort, false citation or false data) should consult either the course instructor or other staff of the Rabb School Graduate Professional Studies.

##### **University Caveat**

The above schedule, content, and procedures in this course are subject to change in the event of extenuating circumstances.