Course Syllabus [version 1.0 on 11 January 2021]

Data Analytics in Business

MGT 6203 Online

Spring 2021

PROFESSORS:
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Office: 496 (or 4161) in Scheller College of Business

Class Time and Location: Online in Canvas and EdX

Office Hours in BlueJeans.com: Thursday 8:30-9:30 pm (Eastern) for OMSA/Canvas students, or Tuesday 8:30-9:30 pm for MicroMaster/EdX students, or by appointment.

TEACHING ASSISTANTS:
1. Akshay Gangavalli (Lead TA) (MSQCF)
2. Madhur Adlakha (Assistant Lead TA for OMSA students in Canvas) (MSQCF)
3. Ronak Patel (Assistant Lead TA for Micromaster students in EdX) (OMSA)

TAs
Please check our Piazza.com Forums in the first week of class for complete list.

Teaching Assistants are very important in this course, as you will find out in Monday evening office hours (7:00-8:00 pm for EdX, or 8:30 to 9:30 pm for Canvas, Eastern). TAs provide instructions and tips for R code for homework and self-assessments.

You can ask questions at any time in Piazza online forums. TAs will answer your questions and sometimes other students in the class may answer you. All students are encouraged to participate in online discussions in Piazza for this course. We can see the activity level of students in Piazza. Typically more active students do better in the course.

GUEST LECTURES BY:
Prof. Sridhar Narasimhan, Prof. Jonathan Clarke, Prof. Bob Myers from GeorgiaTech Scheller College of Business

This is subject to change during the semester to adapt to needs of instruction

COURSE BRIEF DESCRIPTION

The primary objective of this course is to teach the scientific process of transforming data into insights for making better business decisions.
This course covers *basic methodologies, algorithms, and challenges* related to analyzing business data. We will also study *applications of data analysis* in:
1) Finance & Investments
2) Marketing & Advertising
3) Operations & Logistics.

PREREQUISITE

- Calculus and Linear Algebra
- Probability and Statistics
- Background in programming and willingness to learn R
- Introductory course in Analytics Modeling

COURSE GOALS

After taking this course, students will be able to:
- approach business problems data-analytically. Students should be able to think carefully and systematically about whether and how data and business analytics can improve business performance.
- develop business analytics ideas, do projects to analyze data using business analytics software, and generate relevant business insights for decision-making.

TEXTBOOKS
- Required: (ISLR) *Introduction to Statistical Learning with Applications in R*, by Gareth James, Daniela Witten, Trevor Hastie & Robert Tibshirani. Publ. Springer, New York (2017). ISBN: 978-1461471370. Download it for free at www.statlearning.com = http://faculty.marshall.usc.edu/gareth-james/ISL/. It is available for purchase in paper form at Amazon.com, BN.com, Ebay.com, etc.

- You will need to purchase and download seven case studies from Harvard Business School online library. Here is a link to a package to buy online: https://hbsp.harvard.edu/import/782538

- Suggested additional book (not required): *Data Mining for Business Analytics: Concepts, Techniques, and Applications in R,* by Galit Shmueli, Peter C. Bruce, Inbal Yahav, Nitin R. Patel, Kenneth C. Lichtendahl Jr. Publ. Wiley, Hoboken, NJ (2018). ISBN: 978-1118879368. Available for purchase from Amazon.com, BN.com, Ebay.com, etc. See also the website for this book: www.dataminingbook.com/book/r-edition

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COURSE DESCRIPTION

Today businesses, consumers, communities and societies create or manage massive amounts of data as a by-product of their activities. Companies in every industry are using data analytics to add to, or replace, intuition and guesswork in their decision-making. As a result, business managers can use their data troves and analytical skills to discover new patterns and insights, and/or to run controlled experiments to test various hypotheses.

This course prepares students to understand business analytics and become leaders in these areas in business organizations. This course teaches the scientific process of transforming data into insights for making better business decisions. It covers the methodologies, issues, and challenges related to analyzing business data.

This course will illustrate key processes of analytics by allowing students to apply business analytics algorithms and methodologies to various business problems. (Data collection and definition are also critical steps for understanding of phenomena and predictions. We won't have time to discuss data collection in this course unfortunately.)

The use of carefully selected examples places business analytics techniques in context and teaches students how to avoid the common pitfalls, emphasizing the importance of applying proper business analytics techniques. The course will also show that often there can be more than one "good answer" or one "good choice". We need to be discerning in the type of data that we choose to analyze and how we analyze it.

HARDWARE REQUIREMENTS

Please follow GeorgiaTech's computer ownership guide at http://sco.gatech.edu/.
Make sure that you have admin rights on your laptop since occasionally you will need to install R, RStudio, many packages in R, and other software like Radiant, maybe Gephi. Note that tablets, Chromebooks, and old laptops may not work well for this class at this time. (As we move the course toward use of R notebooks, eventually they will work.)

SOFTWARE REQUIREMENTS

We will be learning business analytics with the help of open-source and free software applications that are provided for educational use. Please follow instructions provided in their respective websites and install the following software in your personal laptop:
   a. R: https://www.r-project.org/
   b. RStudio: https://www.rstudio.com/

There are many resources on how to learn R. We will discuss some in the course.
   - *R for Datascience:* http://r4ds.had.co.nz/
   - *RStudio Education:* https://education.rstudio.com/
   - *Swirl:* www.SwirlStats.com
   - *DataCamp:* www.DataCamp.com/courses/free-introduction-to-r

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   c. We'll also introduce Radiant: https://radiant-rstats.github.io/docs/install.html - a convenient and free user interface to analytics and basic programming in R.

COMMUNICATION

Instructor/TA Communication: All course announcements will be made via Canvas or EdX. You are expected to check Canvas/EdX a few times per week for important course-related information. By following the instructions provided in Canvas/EdX, you can ensure that you do not miss important instructions, announcements, etc. If you want, you can adjust your Canvas/EdX account settings to receive important information directly to your email account or cellphone. To get started, log into the Canvas/EdX, click on this course, and see the section entitled *"Before You Begin: Instructions for Getting Started."*

Content Questions and Help: Because questions can often be addressed for the good of the group, please do not email your questions directly to the instructor. Instead, course and content questions will be addressed on an online chat platform called Piazza.com.

Get an account in Piazza today. These online forums will be a VERY valuable source of information and hints about the course and problem sets. Note that you can set your post to "Private" to ask questions to the instructor and TA about issues unique to you.

Office Hours. Office hours will be conducted every week by the instructor and TAs. These sessions will be both an opportunity for you to ask questions and the TAs may discuss course logistics and content. Not all sessions may not be recorded. The ones that are recorded will be available via Canvas or via links posted in Piazza (for EdX students).

Please note that many students see great benefits for this course in attending online office hours via videoconference. Monday evenings office hours are taught mainly by our TAs, who are particularly helpful to learn programming skills.

Office hours with the course instructor/professor (on Tuesday or Thursday, depending if you are an EdX student or OMSA student) are focused on discussing business ideas and additional material for the course; also to go over topics covered in the video lectures.

These videoconferences are part of the course. You've already paid for them with your tuition. We recommend you try to attend them as often as you can and PARTICIPATE. You can learn faster by being an active participant in online office hours and in Piazza online forums… You can attend them silently without sharing audio & video.

STUDENT EFFORT

Students are expected to devote about 10 to 12 hours per week of studying time to complete this course requirements. (That's about 1.5 to 2 hours per day!) This guideline encompasses all class activities, including reading the textbook and supplementary resources, watching lesson videos, participating in office hours and forum discussions,

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completing homework assignments, and studying for exams. Of course, students can spend as much time as necessary, but it is important to be careful <u>not to fall behind</u>.

HOMEWORK ASSIGNMENTS, EXAMS AND GRADING

Grades will be assigned on the following basis:

Ten Self-Assessment Quizzes	15%
(1.5% each. The first SA 0 does not count toward your course grade.)	
Three Homework Assignments	35%
(first two at 10% each and third one at 15%)	
Midterm Exam – Theory Part 1	8%
Midterm Exam – Computation Part 2	12%
Final Exam – Theory Part 1	10%
Final Exam – Computation Part 2	20%

Typically, the following grading scale will be used in the course:
- 90 – 100%:   A
- 80 – 89%:   B
- 70 – 79%:   C
- 60 – 69%:   D
- 0 – 59%:   F

Scores will be rounded to the nearest integer. Please note that 80 – 89.49% yields a B, and a total score of 89.50% would round to 90% and get an A, while anything less than 89.5 yet more than 89 will still get a B. Similar rounding applies for the other grades.

Additional curving of the grades may be possible, depending how the course progresses and based on the disparity of test questions and students during this semester.

COURSE SCHEDULE

Please refer to the **Course Schedule** (a separate document) for week by week details. See also postings in Canvas for GeorgiaTech students and in EdX for MicroMasters students.

READINGS

The assigned pre-readings are crucial to your success in this course. Exams may include some material in readings that are not covered in the in-class lessons. Moreover, watching the video lessons alone will not sufficiently prepare you for the exams.

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Coding takes practice. It is a bit like a sport, and **you** must practice! Try the programming exercises provided in lecture slides and in R Labs. Do the homework and online quizzes.

LESSONS

Video lessons for this course will be provided in EdX which offers a nice video platform.

GT Students: For more details on creating and linking your EdX account, log into Canvas, go to this course's Canvas site, and complete all the steps in the section titled *"Welcome to Data Analytics for Business."*

Please USE THE SAME EMAIL ADDRESS in CANVAS and in EdX. This is important because Vocareum uses your email address in EdX as your username; to transmit your grade automatically back to Canvas, in all 3 systems need to use the same email address.

ASSIGNMENTS

There will be three individual assignments to be submitted. Each assignment will have a theory part 1, and computation part 2. The first two assignments are worth 10% of the overall course grade, the third assignment is worth 15% of the overall course grade.

Theory part 1 of each assignment will be worth 40% of that assignment's score, and Computation part 2 will be worth 60% of that assignment's score.

(The raw points for each assignment may vary. One assignment could have a total of 100 points and another a total of 20 points, but both carry the weights indicated in this syllabus, as far as the overall course total score is concerned.)

You will have two weeks to work on the first two assignments, and three weeks on the third one. Each assignment should be **submitted on Canvas for GT students/EdX for MicroMasters students by Wednesday at 11:59 pm EST on the days noted in the Course Schedule**. Each assignment must be submitted **no later than the deadline**.

Submission after this time (regardless of whether it is by minutes, hours or days) will received a score discount, unless you have exceptional circumstances that our TAs were made aware of beforehand, and you were granted in advance in writing a postponement.

Students are responsible for making sure that their individual assignments are submitted in a timely manner according to the course guidelines. Homework assignments will be released two weekends in advance, giving students opportunities to browse the assignment and organize their week and weekend's plans accordingly. It's important to turn your homework on time for peer-grading; see below.

Students will have plenty of opportunity to ask questions in advance of the due dates to the TAs. Please participate in online discussions in our Piazza.com forums. You are encouraged to participate, both to ask questions and to answers other students' questions.

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Office hours will be scheduled every week on Monday evenings with TAs, and Tuesday or Thursday evenings with the instructor, to address your questions about the course and its assignments. During these "office hours", we will also answer any open questions.

PEER-GRADED HOMEWORK

Most of the work in this course, incl. homeworks, will be due on Wednesday evenings. The theory part of each assignment will be auto-graded via multiple choice questions.

The computational part of the three homework assignments will be peer-graded. This means that you will have to look at the work of three randomly assigned students, and your review will yield a grade for their work. The median of the three grades received on a homework will be assigned as the student's grade for that homework.

You will have five and a half days, from Friday morning till next Wednesday evening, to perform your peer-grading task. You must review carefully your classmates work. This process is part of the learning in this course: *to understand how other people solve or did not solve questions* asked in this course, and *to express your opinions on their work.*

You must turn in your three reviews on time. Your homework assignment will be penalized by a point discount if you do not turn in your peer reviews on time. The penalty is 30% of the grade for your own homework; it is automatically debited by our platform. Please be aware of this.

Peer-grading adds work to the students, and it also adds a lot of learning. You'll get to see other ways of thinking about problems, coding them and presenting them. It can feel a bit annoying, yet it helps your learning and trains you to become a data analytics *manager* later on – managers have to be able to review other people's work.

Midterm Exam and Final Exam will require you to "knit your R code" and submit an "R markdown PDF file". We will show you how to do this in the course. You can also read ahead at https://rmarkdown.rstudio.com/authoring_quick_tour.html

We will use **Vocareum** for the computational parts of our three homework assignments. It helps standardize coding and grading by providing a cloud-based environment for programming in R, and it allows to run easily other people's code during reviews. This platform is based on the concept of *Jupyter Notebooks*. Some of you may have already used it in other GeorgiaTech courses. If not, no worry - you'll learn it here.

QUIZZES / SELF-ASSESSMENTS

There will be ten Self-Assessments or quizzes that will be graded. These "SAs" will be worth each 1.5% of your grade, for a total of 15% of your course grade.

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These quizzes will be given in Canvas for GT Students and EdX for MicroMasters students. You will have the opportunity **to take them twice (2x) only** if you wish to improve your scores. Be sure to write down your incorrect answers to not repeat them.

One of the early Self-Assessments may be peer-graded to give you a chance to learn and practice your peer-grading skills.

EXAMS

The Midterm Exam will account for 20% of your course grade. The Final Exam will account for 30% of your overall course grade.

The Midterm Exam will cover Weeks 1 through 6 of the course. The Final Exam will be cumulative in scope and cover all of the course materials. The exams will cover concepts discussed in the readings, the lectures, and in the homework assignments.

Theory part 1 of each exam will be comprised of multiple-choice questions. Exams will be strictly-timed with proctoring software. No open books, notes, web browsers, or similar resources are allowed, unless otherwise stated by your professor. The use of mobile phones and tablet devices is also prohibited. The questions will be mostly theoretical.

Computation part 2 of each exam will be comprised of application questions that require the use of R. In addition to answering multiple-choice questions in Part 2, you will have to upload your R code as a "knitted R markdown file" in PDF format.

The midterm and final exams must be **submitted on Canvas for GT students/EdX for MicroMasters students by 11:59 pm EST on the days noted in the course schedule**. Any submission after this time (regardless of whether it is by minutes, hours, or days) will not be accepted. There is no flexible period for taking the exams. If you have to work or travel on days an exam is due, please arrange to complete your work early. **It is the student's responsibility to monitor their time and allow enough time to submit their exam before time is up.**

PLAGIARISM

Plagiarism is considered a serious offense. You are not allowed to copy and paste or submit materials created or published by others, as if you created the materials. All materials submitted and posted must be your own original work.

STUDENT HONOR CODE

You are responsible for completing your own work. All students are expected and required to abide by the *letter* and the *spirit* of the Georgia Tech Honor Code. The teaching assistants and I will also abide by these honor codes. I am very serious about this expectation because ethical behavior is extremely important in all facets of life.

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To review the Georgia Tech Honor Code, please visit http://osi.gatech.edu/content/honor-code . Any OMS Analytics degree student suspected of behavior in violation of the Georgia Tech Honor Code will be referred to Georgia Tech's Office of Student Integrity. Please see also the GeorgiaTech Honor Advisory Council: http://www.honor.gatech.edu.

Students with Learning Differences:
This course offers accommodations to students with learning differences. If you need an online classroom accommodation, please contact GeorgiaTech's ADAPTS office at http://www.adapts.gatech.edu and let us know about your need and accommodation.

General Comments
- The Modules of this course follow a logical sequence
- You are responsible for completing your own work.
- Graded assignments should be completed by their due dates
- Self-Assessment tests must be completed within the time allotted

Attendance Policy
- Attendance in online office hours is not required, but it is recommended. You will learn better by being present, participating, and your questions in office hours could help other students learn better. You can participate without sharing video, and while being muted. In general it is better to mute your microphone until you have a question or comment to make; afterward, mute your computer again.

- Log in regularly into Canvas/EdX to check what's new and complete your work, and so you do not have to spend a lot of time reviewing and refreshing yourself regarding the content.

Communication

- All students can and should ask questions. Online you can also all answer your fellow learners' questions in the course discussion forums. Often, discussions with fellow learners are the sources of key pieces of learning.

Netiquette

- Netiquette refers to etiquette that is used when communicating on the Internet. Review the Core Rules of Netiquette. When you are communicating via email, discussion forums or synchronously (real-time), please use correct spelling, punctuation and grammar consistent with the academic environment and scholarship.

- Conner, P. (2006-2014). Ground Rules for Online Discussions, Retrieved 4/21/2014 from http://teaching.colostate.edu/tips/tip.cfm?tipid=128

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- Learners who do not adhere to this guideline may be removed from the course.

INTELLECTUAL PROPERTY AND CONFIDENTIALITY

We highly recommend that you avoid disclosing any confidential information in your assignments and discussion forum posts (including intellectual property and "third party" confidential information, such as information in relation to your employer that is not publicly available).

Although you are encouraged to draw on real-world experience, posting material or sharing links to material that is harassing, intimidating, or defamatory, or encourages or condones piracy or infringes on intellectual property rights is not appropriate. GeorgiaTech reserves the right to remove any postings that contravene the well-being of other students or goes against accepted integrity standards.

We would urge you to use only first names (or pseudonyms) wherever possible. You are entirely responsible for ensuring that you do not disclose any information that is protected by confidentiality undertakings – we will ensure that all information is treated in accordance with our privacy policy, but we will not sign any separate confidentiality agreements or non-disclosure agreements.

If, during the program, you disclose or create any intellectual property (for example, trading names, designs, written materials, know-how and other products of your independent thought, creativity and intellectual effort), then you accept all and any risks in relation to disclosure, including the risk that a fellow participant will use this intellectual property without your consent, or that disclosure weakens or erases any legal protections.

We won't use any intellectual property created by you and submitted in, or forming part of, your assignments without your written consent.

Our discussion forums operate on the basis of the **Chatham House Rule**: *"Participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed."* Please ensure that you take account of this Rule when posting on the discussion forum and using information learnt from discussion forum posts. https://www.chathamhouse.org/chatham-house-rule

Please also note that this Syllabus is subject to changes during the semester to adapt to the needs of instruction. Changes, if any, will be communicated in advance in Piazza online forums and in Canvas for OMSA students, or in EdX for MicroMaster students.

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Georgia Tech

Data Analysis in Business (MGT 6203) : Course Outline - Spring 2020

Course Outline is subject to change during the semester to adapt to the needs of instruction

Weeks	Course Topics	Release Dates (All on Friday except where noted)
	Module 1: Basics of Statistics and Regression	
Week 0/1 Jan 14/18	Statistical Learning and R Code Programming Linear Regression: Simple and Multiple. Real Estate Example.	Thursday 14 January 2020
Week 2 Jan 25	Indicator Variables and Interaction Terms.	Friday 22 January
Week 3 Feb 1st	Nonlinear Transformations and Log Models. Customer Analytics Example.	Friday 29 January
Week 4 Feb 8	Logistic Regression. Customer Default Example	Friday 5 February
Week 5 Feb 15	Treatment Effect, Randomized Controlled Experiments, and Natural Experiments.	Friday 12 February
	Module 2: Finance & Investments	
Week 6 Feb 22	Introduction, and Measuring Risk and Return.	Friday 19 February
Week 7 Mar 1st	Measuring Risk Adjusted Performance	Friday 26 February
Week 8 Mar 8	Factor Investing	Friday 5 March
	Midterm Exam: Parts 1 & 2 due on Sun 21st March	Opens Fri 12 Mar at 5 pm Closes Sun 21 Mar 23:59 (Eastern Standard Time)
	Module 3: Marketing & Advertising	
Week 9 Mar 15	Marketing & Advertising : Traditional and Digital	Friday 12 March
Week 10 Mar 22	Implementing Integrated Digital Marketing	Friday 19 March
Week 11 Mar 29	Intro to Predictive Marketing Across Channels	Friday 26 March
	Module 4: Operation Management / Logistics	
Week 12 Apr 5	Introduction and Managing Queues	Friday 2 April
Week 13 Apr 12	Statistical Process Control	Friday 9 April
Week 14 Apr 19	Forecasting Demand	Friday 16 April
Week 15 Apr 26	Inventory Management (Last 2 days of classes Mon-Tue, then Wed = Reading Period)	Friday 23 April
Week 16 May 3rd	**Final Exam: Parts 1 & 2 due Wednesday 5 May 2021**	Opens Wed 28 Apr at 8 am. Closes Wed 5 May 23:59 (Eastern Standard Time)

This is subject to change during the semester to adapt to needs of instruction

Data Analytics in Business (MGT 6203)

Assignment Release and Due Dates – Spring 2020

Week	Activity	Assignment		Peer Assessment	
		Release Date	Due Date	Release Date	Due Date
Week 0 Thu Jan 14	Self-Assessment 0 (Ungraded)	Fri Jan 15 @ 5:00 pm EST	Wed Jan 20 @ 23:59 EST		
Week 1 Mon Jan 18	Self-Assessment 1	Fri Jan 22 @ 5:00 pm EST	Wed Feb 3 @ 23:59 EST		
Week 2 Jan 25	Self-Assessment 2	Fri Jan 29 @ 5:00 pm EST	Wed Feb 10 @ 23:59 EST		
Week 3 Feb 1st	Graded Homework #1	Thu Feb 4 @ 5:00 pm EST	Wed Feb 17 @ 23:59 EST	Fri Feb 19 @ 8:00am EST	Wed Feb 24 @ 23:59 EST
Week 4 Feb 8	Self-Assessment 3	Fri Feb 12 @ 5:00 pm EST	Wed Feb 24 @ 23:59 EST		
Week 5 Feb 15	Self-Assessment 4	Fri Feb 19 @ 5:00 pm EST	Wed Mar 3 @ 23:59 EST		
Week 6 Feb 22	Graded Homework #2	Thu Feb 25 @ 5:00 pm EST	Wed Mar 10 @ 23:59 EST	Fri Mar 12 @ 8:00am EST	Wed Mar 17 @ 23:59 EST
	Self-Assessment 5	Fri Feb 26 @ 5:00 pm EST	Wed Mar 10 @ 23:59 EST		
Week 7 Mar 1st	Self-Assessment 6	Fri Mar 5 @ 5:00 pm EST	Wed Mar 17 @ 23:59 EST		
Week 8 Mar 8	*Prepare for Midterm exam*	*Fri Mar 12 @ 5:00 pm EST*			
Week 9 Mar 15	*Turn in Midterm exam*		*Sun Mar 21 @ 23:59 EST*		
Week 10 Mar 22	Graded Homework #3	Thu Mar 25 5:00 pm EST	Wed Apr 14 @ 23:59 EST	Fri Apr 16 @ 8:00am EST	Wed Apr 21 @ 23:59 EST
	Self-Assessment 7	Fri Mar 26 @ 5:00 pm EST	Thu Apr 7 @ 23:59 EST		
Week 11 March 29	No new work assigned				
Week 12 Apr 5	Self-Assessment 8	Fri Apr 9 @ 5:00 pm EST	Wed Apr 21 @ 23:59 EST		
Week 13 Apr 12	Self-Assessment 9	Fri Apr 16 @ 5:00 pm EST	Tue Apr 27 @ 23:59 EST		
Week 14 Apr 19	Self-Assessment 10	Tue Apr 20 @ 5:00 pm	Tue Apr 27 @ 23:59 EST		
Week 15 Apr 26-27	No new work assigned				
Week 16 Apr 26 to May 5	*Final Exam*	*Wed Apr 28 @ 8:00 am EST*	*Wed May 5 @ 23:59 EST*		

**Course Outline is subject to change during the semester to adapt to needs of instruction. **
Please refer also to the Course Schedule that provides a detailed view on these dates.

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Data Analytics in Business : MGT6203 - Course Schedule - Spring 2021
(updated 7 January)

Week/Topic	Release Dates	Weekly Topic	Course Activities	Due Dates
Module 1: Basics (Weeks 1-5)				
Week 0: Thu 14 January 2021	Thu 14 January 2021 8:00 am EST = 13:00 UTC	Learning the basics of programming in R	Read: ISLR, Sections 2.1, 2.3. Practice exercises TASK: *Ungraded* Self-Assessment (SA) #0 opens Fri 15 January at 5:00 pm	
Week 1: Mon 18 January 2021	Fri 15 January 2021 8:00 am EST = 13:00 UTC	Linear Regression & Real Estate Example	Read: ISLR, Sections 3.1, 3.2 TASK: *Graded* Self-Assessment (SA) #1 opens Fri 22 January at 5:00 pm	SA 0 due Wed 20 Jan at midnight (23:59 EST)
Week 2: Mon 25 January	Fri 22 January 2021 8:00 am EST = 13:00 UTC	Customer Analytics using Indicator Variables and Interaction Terms	Read: ISLR, Section 3.3 TASK: Self-Assessment 2 opens Mon 29 Jan at 5 pm	
Week 3: Mon 1st February	Fri 29 January 2021 8:00 am EST = 13:00 UTC	Nonlinear Transformation Models	Interpreting Nonlinear Models (click on this link) TASK: *Graded* Homework 1 opens on Thu 4 Feb at 5 pm. (Part 1 in usual platform. Part 2 : go to edX, then to Vocareum)	SA 1 due Wed 3rd Feb at midnight (23:59 EST)
Week 4: Mon 8 February	Fri 5 February 2021 8:00 am EST = 13:00 UTC	Logistic Regression. Customer Default example	ISLR, Section 4.3 TASK: Self-Assessment 3 opens Fri 12 Feb at 5 pm	SA 2 due Wed 10 Feb at midnight (23:59 EST)
Week 5: Mon 15 February	Fri 12 February 2021 8:00 am EST = 13:00 UTC	Treatment Effect, Randomized Controlled Experiments, and Natural Experiments	Difference in Difference Estimation TASK: Peer-grading Hwk 1 starts Fri 19 Feb at 8 am TASK: Self-Assessment 4 opens Fri 19 Feb at 5 pm	Graded Homework #1 due Wed 17 Feb at 23:59 EST

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Module 2: Finance (Weeks 6-8)

Week 6: Mon 22 February	Fri 19 February 2021 8:00 am EST = 13:00 UTC	Introduction, and Measuring Risk and Return	Read: Warren Buffett risk and return case TASK: Graded Homework 2 opens Thu 25 Feb at 5 pm (Part 1 in usual platform. Part 2 : go to edX, then to Vocareum) TASK: Self-Assessment 5 opens Fri 26 Feb at 5 pm	SA 4 and Peer-grading scores for Hwk 1 are both due at Wed 24 Feb at midnight (23:59 EST)
Week 7: Mon 1st March	Fri 26 February 2021 8:00 am EST = 13:00 UTC	Measuring Risk Adjusted Performance	Read: Assessing Buffett's Alpha or this technical paper Buffet's Alpha. TASK: Self-Assessment 6 opens Fri 5 March at 5 pm	SA 4 due Wed 3 March at midnight (23:59 EST)
Week 8: Mon 8 March	Fri 5 March 2021 8:00 am EST = 13:00 UTC	Factor Investing	Read: The Greatest Factor Investor of All Times? See these explanatory slides, and rebuke of the original article. Think about: What drives Warren Buffett's alpha? TASK: Peer-grading Hwk 2 starts Fri 12 April 8 am	Homework #2, Parts 1 & 2 due Wed 10 March at 23:59 EST (submit Part 2 in Vocareum, via edX) SA 5 due same day Wed 10 March at 23:59 EST

Midterm Exam

Week 9: Mon 15 Mar	Opens Friday 12 March 2021 at 5:00 pm EST = 21:00 UTC	Test on the first 8 weeks of material	Part 1: theoretical, is proctored; 3-hour limit Part 2: computational, is open books, start & stop ok	Midterm Test Parts 1 & 2 due **Sunday** 21st March at midnight (23:59 EST)

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Module 3: Marketing (Weeks 9-11)

Week 9: Mon 15 March	Fri 12 March 2021 8:00 am EST = 13:00 UTC	Marketing and Advertising	Read: (from Course Pack) Advertising Experiments at the Ohio Art Company	SA 6 and Peer-grading scores for Hwk 2 are both due Wed 17 Mar at 23:59 EST
Week 10: Mon 22 March	Fri 19 March 2021 8:00 am EST = 13:00 UTC	Implementing Integrated Digital Marketing	Read: (from Course Pack) Star Digital: Assessing the Effectiveness of Display Advertising TASK: Homework 3 opens Thu 25 March at 5 pm EST (Part 1 in usual platform. Part 2 : go to edX, then to Vocareum) TASK: Self-assessment 7 opens Fri 26 March at 5 pm	Rest after the midterm. ☺ No work due this week.
Week 11: Mon 29 March	Fri 26 March 2021 8:00 am EST = 13:00 UTC	Implementing Predictive Marketing Across Channels	Read: (from Course Pack) Chase Sapphire: Creating a Millennial Cult Brand TASK: Start working on Hwk 3. It's a longer one.	No work due this week, but work on Hwk 3

Module 4: Operation Management (Weeks 12-15)

Week 12: Mon 5 April	Fri 2 April 2021 8:00 am EST = 13:00 UTC	Introduction and Managing Queues	Read: The Supply Chain Economy and the Future of Good Jobs in America. (click on link) (Course Pack): Operations Management Reading: Managing Queues TASK: Self-Assessment 8 opens Fri 9 April at 5 pm	SA 7 due Wed 7 April at 23:59 EST

This is subject to change during the semester to adapt to needs of instruction

Week 13: Mon 12 April	Fri 9 April 2021 8:00 am EST = 13:00 UTC	Statistical Process Control	(Course Pack) Read: Statistical Process Control TASK: Self-Assessment 9 opens Fri 16 April at 5 pm TASK: Peer-grading Hwk 3 starts Fri 16 April 8 am	Homework #3, Part 1 & 2 due Wed 14 April at midnight (23:59 EST) (Remember to go in edX to submit Part 2 in Vocareum)
Week 14: Mon 19 April	Fri 16 April 2021 8:00 am EST = 13:00 UTC	Forecasting Demand	(Course Pack): Time Series TASK: Self-Assessment 10 opens Tue 20 April at 5 pm	SA 8 and Peer-grading scores for Hwk 3 are both due Wed 21 April at 23:59 EDT
Week 15: Mon 26 April (two-day week only)	Fri 23 April 2021 8:00 am EST = 13:00 UTC	Inventory Management	(Course Pack): Managing Inventories--Reorder Point System	SA 9 and SA 10 are both due **Tuesday** 19 April at 23:59 EST
<td colspan="5" align="center">Official GeorgiaTech Reading Period: Wed 28 April **Final Exam**</td>
Final Exam	Opens Wednesday 28 April 2021 at 8:00 am EST = 13:00 UTC	Cumulative Test based on the Whole Course	About 1/3 of the questions will be on material from before the midterm, and 2/3 of the questions will be from after the midterm.	Final Exam due Wed 5 May 2021 at 23:59 EST

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