PROFESSOR: Dr. Joel Sokol

COURSE DESCRIPTION

A professional practice experience for students in the Master of Science in Analytics degree program, where students have an opportunity to apply ideas from the classroom to an important project of interest to a business, government agency, or other organization.

PREREQUISITES

- CSE 6242 Data and Visual Analytics
- MGT 6203 Data Analytics in Business
- A total of at least 8 (preferably 10) courses toward the MS in Analytics degree
- A company or organization's analytics project, already identified and approved by the MS Analytics program

COURSE GOALS

The course is designed to give students experience in how to:

- properly define and scope an analytics project to fit the needs of an organization;
- apply appropriate analytics ideas, methodologies, and tools;
- create value, insight, and knowledge using analytics skills and principles;
- manage a project; and
- present results professionally in writing and orally.

COURSE REQUIREMENTS

Students in this course are required to complete an applied analytics project with a company/organization, submit a midterm and final summary of the project, and watch supplementary video material from applied analytics experts. The details of the project, summary reporting, and video requirements are given below.

PROJECT TYPES

There are two types of projects that students may do in this course:

- **Employer project**: An analytics project at a company or organization you work for, either full-time or as an intern/co-op. With this type of project, it is likely you will be

the only student in the class working on it. Even if co-workers are also working on this project, students are required to submit only their own work for grading.

- **Contributed project**: An analytics project contributed by a company or organization, for students who did not find a project on their own. With this type of project, it is likely there might be other students in the class working on it. Students may work in teams or as individuals. For students working in a team, only one submission per team is required. Whether team or individual, TAs and contributed project sponsors will establish communication channels and guidelines during the kick-off meeting at the start of the project.

PROJECT REQUIREMENTS

There are three main requirements of an applied analytics practicum project:

- **Methodology**. The project must require the use of analytics skills and knowledge learned in the MS Analytics curriculum, or built upon that knowledge. The purpose is for students to get significant project experience using what they have learned.

- **Value**. The project's goal should be to create significant value, insights, and/or knowledge for the company or organization.

- **Magnitude**. The project should be significant enough to require the full semester allotted.

Students working on a project that requires confidentiality may sign a non-disclosure agreement with their company/organization. These students will then be restricted from presenting some details of the project to the instructor. Therefore, the project supervisor's evaluation will be an especially important part of the grading process.

COMMUNICATION WITH PROJECT COMPANY/ORGANIZATION

It is expected that the student(s) and employer will agree on a communication schedule, and that students are responsible for making sure communication is timely and smooth. A supervisor on the company/organization side will be asked to submit an evaluation form at the end of the semester; this evaluation can be a significant contributor to the student's grade. The evaluation form will be distributed to supervisors; see the schedule later in the syllabus for exact due dates. Students are responsible for following up to make sure their sponsor or supervisor has returned the form to GT.

The company/organization will choose its preferred channel and schedule of communication. The company/organization may also specify additional reports or deliverables. Students are expected to abide by all of these company/organization guidelines for communication, and submit all of the deliverables specified by the company/organization.

PROJECT REPORTING

At two times during the semester (see schedule below), students are required to submit reports to the faculty:

- Nearly halfway through the semester, a midterm progress report must be submitted in the form of a slide deck. These can be submitted in either .pptx or .pdf format. The midterm progress report should explain the purpose of the project, what you've done so far, and what you plan to do by the end of the semester.

- Near the end of the semester, a final written report (written text, not a slide deck) must be submitted. These can be submitted in either .docx or .pdf format. The final report should explain the purpose of the project, what you did, and what the results or insights or recommendations are.

The best technical writing is clear, concise, and easy to understand; as standard practice, visuals (figures, graphs, charts, etc.) are encouraged wherever they can assist in quick understanding.

Both reports should contain whatever information is required for an analytics professional (who might yet be unfamiliar with the basis of the project) to understand the project, your approach, and your results. If a non-disclosure agreement restricts you from sharing some information, you should share as much as you can, and describe the rest in non-specific terms (e.g., "we analyzed a manufacturing process with n steps" could replace a description of a semiconductor manufacturing process).

For a team project, one student should submit the report for the entire team.

GRADING POLICY

Grading for the course will be determined as follows:

1. Project work (80 points)

   - 40 points: Project work
   - 20 points: Professionalism reviews
   - 10 points: Midterm slide deck
   - 10 points: Final report

   By nature, this sort of project is (and should be) graded subjectively. An important consideration in the grading is that there are often multiple good ways of approaching an analytics project, and multiple good styles of presentation and report (so, for example, you don't have to use a specific style or template or model). When grading, I will understand that there are differences of style, so you do not

have to worry about matching your style to my preferences. Similarly, different companies, organizations, and individuals vary in their style of communication, expected speed of response, etc., so the professionalism aspect of the grading does not include any specific requirement other than to submit all deliverables and surveys for the course and for the company/organization, to treat all participants respectfully, and to adhere to the standards of the company/organization, the Georgia Tech honor code, and the MS Analytics collegiality policy.

In the case of team projects, part of the grading will be based on feedback from teammates, which will be collected at the time the two reports are submitted.

For every project, the supervisor's feedback will be an important component of the grading process.

2. Supplemental videos (20 points)

   - 20 points: Viewing Videos

   In addition to the project itself, this course will also contain a library of supplemental videos about a variety of topics in Analytics, presented by outstanding experts in the field.

   All students are expected to completely view each of these videos by the deadlines listed in the table below. Those who fail to do so will lose credit proportionally from the 20-point total.

   Videos will be available from the beginning of the course, so you can watch them all right away if you want to get this part of the course completed quickly.

The minimum numeric grades required to earn each letter grade for the semester will be 90% for an A, 80% for a B, 70% for a C, and 60% for a D. However, I understand that grading for a project course like this includes some subjectivity; as a result, at the end of the semester I usually choose to adjust the letter-grade cutoffs to make them a little more lenient than the strict 90/80/70/60 approach, as a way of giving you the benefit of the doubt with any subjectivity.

ATTENDANCE POLICY

- This is a fully online course.
- Log in on a regular basis to complete your assignments.
- It is expected that you will communicate at least weekly (or more often, if requested) with your project sponsor and (if applicable) your teammates.
- All official announcements related to the course will be posted on the course discussion forum and/or sent through Georgia Tech email. Students are expected to check the forum and their @gatech.edu email regularly.

DUE DATES

Starting early in the semester, a new set of videos must be watched each week until they are all complete. As described above, a slide deck is due near the middle of the semester and a final report is due near the end of the semester. All due dates are shown in the table at the end of this syllabus. Grading penalties may be applied to work that is completed or submitted late.

TIMING POLICY

- Video lessons should be viewed by their due dates.
- The midterm and final reports must be completed on schedule to allow for timely grading.
- Lessons viewed after their due dates, and reports submitted after their due dates, may be assessed a grading penalty for lateness.
- You will have access to the course content for the scheduled duration of the course.

PLAGIARISM POLICY

- 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. Any background materials you use should be cited.

AI USE POLICY

- Any code or text created using AI must be specifically cited. Just like using online sources (e.g., Stack Overflow) for small snippets of code is allowed as long as they are cited, AI may be used for code or text snippets as long as it is cited; in all cases, you should indicate specifically which part of your submission is AI-generated. You may not use AI for more than that; even if you believe that in the future you will just prompt AI to do these tasks for you, it is important that you learn to do them yourself.

- You are responsible for any errors introduced by the AI.

STUDENT HONOR CODE

All students pursuing the MS Analytics degree are expected and required to abide by the letter and spirit of the Georgia Tech honor code. The teaching assistants and I will also abide by these honor codes. Please feel free to contact me if there is any way that I can help you in complying with the honor code.

- I'm very serious about this. Ethical behavior is extremely important in all facets of life.

- Review the Georgia Tech Student Honor Code www.honor.gatech.edu.
- You are responsible for completing your own work.
- Any MS 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.

COMMUNICATION

- All students should ask questions, and answer their fellow students' questions, on the course discussion forums. Often, discussions with fellow students are the sources of key pieces of learning.
- You can also ask questions of the instructor and teaching assistants via the course discussion forums. For special cases such as failed submissions due to system errors, missing grades, failed file uploads, emergencies that prevent you from submitting, personal issues, etc., please post a private message to the instructor and teaching assistants on the discussion forum.

ACCEPTABLE STUDENT CONDUCT

- *In Georgia Tech's MS in Analytics program, we expect all participants (faculty, students, teaching assistants, staff) to interact respectfully. Students who do not adhere to this guideline may be removed from the course.*

- Please see Georgia Tech's Student-Faculty Expectations to see other conduct requirements of both students and faculty.

SUPPORT FOR STUDENTS WITH DISABILITIES, UNEXPECTED MEDICAL OR PERSONAL ISSUES, ETC.

- If you wish to request an accommodation due to a documented disability, please contact the Office of Disability Services (ODS) (**dsinfo@gatech.edu** or 404-894-2563 (voice) or 404-894-1664 (TDD)) as soon as possible. ODS helps students get accommodations prospectively (before the accommodation is needed), but not retroactively (i.e., they will not help if you knew you might need the accommodation beforehand but waited until after the situation arose to request it). We (professor and TAs) cannot give these accommodations ourselves; they must be requested through ODS.
- If you encounter an unexpected personal issue, medical issue, etc. you can contact the Dean of Students' office, or post on Piazza to all instructors. Depending on the situation, we might be able to handle it, or we might need you to contact the Dean of Students' office, but you are always welcome to contact the Dean of Students' office if you are not comfortable revealing the details of your situation to the professor and TAs.

COURSE TOPICS AND SCHEDULE

The table below contains a course topic outline, as well as assessment and lesson due dates.

Week	Report and/or Supplementary Video Topic Due	Due Date
Week 1	None	
Week 2	**Creative Analytics Solutions** Dr. Narendra Mulani *Chief Analytics Officer, Accenture Applied Intelligence*	Sep 3 @6:00 UTC Sep 3 @2am ET Sep 2 @11pm PT
Week 3	**The Basics of Leadership** Maj. Gen. Ronald Johnson, US Army (ret.) *Professor of the Practice, Georgia Tech*	Sep 10 @6:00 UTC Sep 10 @2am ET Sep 9 @11pm PT
Week 4	**Managing Change in an Organization** Mr. Sig Mejdal *Vice President and Assistant General Manager, Baltimore Orioles*	Sep 17 @6:00 UTC Sep 17 @2am ET Sep 16 @11pm PT
Week 5	**Law and Ethics** Peter Swire, J.D. *Holder Chair and Professor, Georgia Tech*	Sep 24 @6:00 UTC Sep 24 @2am ET Sep 23 @11pm PT
Week 6	**1. <u>MIDTERM REPORT (SLIDE DECK) [Submit to employer or sponsor for evaluation, along with any of your code that they request.]</u>** ***and*** **2. The Persuasive Speaker** Joey Asher, J.D. *President, SpeechWorks*	Oct 1 @6:00 UTC Oct 1 @2am ET Sep 30 @11pm PT
Week 7	**1. MIDTERM REPORT (SLIDE DECK) [Submit on Canvas for evaluation]** ***and*** **2. (Groups only) MID-SEMESTER PEER REVIEW [Submit on Canvas]**	Oct 8 @6:00 UTC Oct 8 @2am ET Oct 7 @11pm PT

Week 8	**Final Report Expectations** Course TAs	Oct 15 @6:00 UTC Oct 15 @2am ET Oct 14 @11pm PT
Week 9	**Valuation and Value Creation** Dr. Jacqueline Garner *Executive Editor, FMA Online and Professor, Georgia Tech*	Oct 22 @6:00 UTC Oct 22 @2am ET Oct 21 @11pm PT
Week 10	**Case Studies** AT&T	Oct 29 @6:00 UTC Oct 29 @2am ET Oct 28 @11pm PT
Week 11	**Preparing for Your New Environment** Dr. Beverly Wright *VP Partner, RelationalAI*	Nov 5 @7:00 UTC Nov 5 @2am ET Nov 4 @11pm PT
Week 12	None	
Week 13	None	
Week 14	**FINAL REPORT (WRITTEN DOCUMENT) [Submit to employer or sponsor for evaluation, along with any of your code that they request.]**	Nov 26 @7:00 UTC Nov 26 @2am ET Nov 25 @11pm PT
Week 15	**1. FINAL REPORT (WRITTEN DOCUMENT) [Submit on Canvas for evaluation]** (The extra week is given for you to disguise any confidential information from what you submit to your employer or sponsor.) ***and*** ***2. FILL OUT FORMS:*** **a. PROJECT CATALOG [Submit on Canvas]** **b. STUDENT FEEDBACK SURVEY [Submit on Canvas]**	Dec 2 @7:00 UTC Dec 2 @2am ET Dec 1 @11pm PT

Week 16	• **Company/organization submits performance evaluation to GT** *Evaluation forms are due back by the date shown on the right. It is your responsibility to follow up with your sponsor/supervisor before this to make sure the form is returned.*	Dec 7

COURSE MATERIALS

- All content and course materials can be accessed online
- There is no textbook for this course

TECHNOLOGY/SOFTWARE REQUIREMENTS

- Internet connection (DSL, LAN, or cable connection desirable)
- Analytics software appropriate for your project, as you have learned in previous MS Analytics courses
- Microsoft Word and PowerPoint, *or* document and presentation-slide creation software with the ability to save its output in .pdf format
- Adobe Acrobat PDF reader (free download; see https://get.adobe.com/reader/