Effective writing comes down to knowing what you're talking about and sounding like you know what you're talking about – that goes for introductory composition essays and graduate analytics projects alike. The means for making a quality argument about a quantitative matter are more prescribed than in a personal essay or text analysis, but the principles of good writing are the same: clear assertions, direct prose and solid inferences. Together, this semester, we'll work together to demonstrate the skills you have acquired during your MSBA, primarily through original work on a dataset, complemented by a writing up that work in a more-or-less traditional report as well as a brief oral presentation.

That last sentence says "more-or-less traditional" because, if you can write for an audience that will read even if they are not your captive, you will go far. In my judgment, teachers fail students by tolerating – in fact, creating an expectation of -- often mediocre, mechanical written communication. You don't need to write like you're publishable to pass this course, but I'd sure appreciate reading something that doesn't seem like it was cranked out just to meet a requirement. (It's a requirement, I know.) More importantly, people who aren't your captive audience might also read what you write, and who knows where that can take you.

I'd like to structure the class with the smallest amount of didacticism compatible with your success. The extremes between which we'll seek a balance are, on one hand, a simple deadline for a finished product (or complete draft) and, on the other, a rigid schedule of deliverables. These extremes would not serve you well either, especially as it pertains to the form rather than content of the course: I don't expect you to know how to scope a project and schedule all the elements comprising it so you meet a distant deadline; similarly, I don't expect the order I would do those things, or that your colleagues would, to fit you. Therefore, I want to provide you an experience that mimics a healthy relationship with a supervisor, where you strive toward goals you've set, and I assist with choosing milestones and working toward them. This more closely mimics what you'll find while doing analysis for clients, and I hope it will be more rewarding.

To wit, I expect our regular time together to include some recurring features:

1. Each week, each of you will submit a Progress, Plans and Problems update that includes an accounting of time spent on the project by 4pm Tuesday preceding Wednesday's class. Two or three students will discuss with the class the following day; we'll rotate, and you'll know when you turn is coming.
2. Discussing other writing about data analytics will provide inspiration or caution. Required reading will be made available by noon on Fridays preceding the class where the reading will be discussed, i.e. a reading for Wed, Jan 22, will post by noon on Fri, Jan 17.
3. I will lecture on specific elements of the analysis or reporting you're doing and a schedule of those lectures in outlined below in the Class Schedule. Those lecture topics are based on my experience of this course but I am willing to take input from you about the topics that I'll be presenting. None of the material for this course is canned, and I'm willing to do my work alongside you but have little interest in telling you how to do something you're already informed about or not interested in learning about.

Learning Goals

Significant thought has been put into how this capstone course fits in with the overall mission and learning goals of the MSBA. With thanks for the exact language to Jakki Mohr, who taught this course for its first two years, and the others who designed the MSBA and the capstone component, in the MSBA capstone, each student will be expected to demonstrate proficiency across three of the five learning objectives for the program:

Knowledge -> … of a wide range of analytical techniques and programming tools for both structured and unstructured (e.g., text, sentiment) data.

Application -> …of appropriate analytical techniques to solve a wide variety of business/ organizational problems.

Communication/Story Telling -> …of data analytics results … through effective business decision making inputs … data visualization techniques … impactful narrative supporting key insights from analysis.

Specifically, the MSBA encompasses the learning objectives and outcomes through which students will demonstrate proficiency. Failure to complete any of the items below will seriously compromise your grade in the course.

Learning Objectives	Learning Outcomes
Conceptualizing and completing a capstone project as an integrative experience for the program	Scope a data science project; articulate the research question(s); select and explain appropriate variables; select and accurately use an appropriate analytical method;
Presenting the capstone project in a conference-like format for business professionals.	Communicate results and implications effectively with nontechnical managers and executives, through visual storytelling, written, and oral communications.
Learning to give and receive professional peer feedback	Peer Feedback Sheets
Mentor up-and-coming professionals	Reflection to me on Slack

Policies

Accommodation for People with Disabilities Available

The University of Montana assures equal access to instruction through collaboration between students with disabilities, instructors, and Disability Services for Students. If you have a disability that adversely affects your academic performance, and you have not already registered with
Disability Services, please contact Disability Services in Lommasson Center 154 or
406.243.2243. Regardless of your registration status, I will work with you and Disability Services to provide an appropriate modification.

Academic Honesty and Code of Conduct

All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. The University of Montana Student Conduct Code specifies definitions and adjudication processes for academic misconduct and states, "Students at the University of Montana are expected to practice academic honesty at all times." (Section V.A., available at http://www.umt.edu/student-affairs/dean-of-students/default.php). All students need to be familiar with the Student Conduct Code. It is the student's responsibility to familiarize themselves with the COB Code of Professional Conduct at http://www.business.umt.edu/ethics/professional-conduct-code.php.

Attendance

All students are expected to attend class in person or through Zoom unless hardship prevents it. Please notify me by Slack or email if you will miss a class. If group activities such as presentations, peer feedback or discussion of readings are impacted by your absence, you will be expected to make up the activities.

Online Participation and Expectations of Availability

This course will rely on Slack for a substantial amount of communication. Each day, you should be checking the #capstone20 channel of umt-analytics.slack.com and, in the event, that I mention you or @channel so you get notified, please check ASAP. I appreciate it if you leave some relic (like a brief comment or emoticon) of having read announcements. I'll reciprocate.

For communication to me, you may send direct messages through Slack or email. You can expect a response within 24 hours, often the same day. If I email with information, I will mention the need to check email in Slack.

Assessment

The following factors will be weighted as shown when determining a final grade for this course. The project will be assessed with respect to the quality of the analysis conducted and form in which the analysis is presented. Revision of project submissions will be permitted through the end of the semester, provided sufficient progress is made between drafts, until you are satisfied with your performance.

Project and Write-Up	*70%*
Project Presentation	*10%*
Participation, including peer feedback	*20%*

Additional Course Information

Over the course of the term, the class will develop a shared understanding of what makes a complete and useful data analytics report, however, as you are structuring your work on your project, it is useful to have milestones in mind. Therefore, from the outset, here are some typical data analytics reporting milestones:

- Data set preliminarily clean and complete
- Exploratory data analysis (descriptive statistics, visualizations)
- Review of applicable secondary sources
- Clear statement of research question and/or development goal
- Additional data collection and cleaning, if required, or certification that the basis for analysis/engineering has been established
- The heart of the matter, either the hypothesis being evaluated and the elements to support a conclusion or the thing that you are building and the material with which you did that
- Writing the thing – Stitch it together into a draft!
- Elevator pitch / slide deck / blog post – How are you going to get your work noticed?

Tentative Class Schedule

In addition to the items below, each class meeting will feature a deep dive on two or three projects and several weeks (tending toward the early part of the semester) will include readings.

January 15 – Introduction and Overview / Kickoff presentations
January 22 – Lecture: Exploratory Data Analysis, Descriptive Statistics
January 29 – Lecture: Literature Review, Research Question
February 5 – One-on-ones
February 12 – Lecture: Hypotheses, Variables, Inferential and Predictive Statistics
February 19 – Lecture: Presenting Results and Findings
February 26 – Lecture: Limitations, Recommendations, Implications, Conclusion, Storytelling March 4 – One-on-ones
March 11 – TBD
March 18 – Spring Break **(Rough Draft submitted before 5pm Thursday, March 19)** March 25 – One-on-ones
April 1 – Workshops
April 8 – Lecture: Posters and Presentations
April 15 – Student Presentations
April 22 – MSBA Showcase **(If you only appear in person once, this is the day for it.)**
April 29 – No class: Tutoring for Jason Triche's *Introduction to Data Analytics* classes