

MAT4376G Topics in Statistics

Introduction to Quantitative Consulting | Fall 2020 | Instructor: P. Boily

With solid analytical and abstraction skills, graduates with a background in mathematics and statistics are in high demand. The gap between theory (or textbook applications) and real-world uses can prove surprisingly difficult to navigate, however.

In this project-based course, you will study some quantitative consulting projects, learn about the various non-technical aspects of consulting, explore the different roles that quantitative consultants play, develop the ability to interpret results for – and communicate findings to – clients, and apply the course teachings to a class consulting project.

PRE-REQUISITES

Programming proficiency (R/Python/Matlab/etc.); MAT2122, MAT2141, MAT2371, MAT2375 or MAT2377, and MAT3375 (or permission).

COURSE SCHEDULE

LEC: TUE 13:00-14:30 (ZOOM)
LEC: THU 11:30-13:00 (ZOOM)
OFF: MON 10:00-11:30, THU 10:00-11:30 (ZOOM)

COURSE EVALUATION

Class Project (20%)
Team Projects (45%)
Class Participation (15%)
Weekly Quizzes (10%)
CVs and Bios (10%)

A detailed breakdown of each of these items, with timelines, will be provided in class.

Any change to the course outline will be announced in class and/or on the website.

GRADING SCALE

Every deliverable is graded on the consulting scale:

- A+[10]: exceeded expectations
- A–[8]: met expectations
- C+[5]: did not meet expectations
- F[0]: not even wrong

TIME COMMITMENT

Consulting is not a spectator sport – I expect that you will spend on average 8-10 hours each week on this course.

COURSE OUTLINE

Non-Technical Aspects of Consulting
29 video lectures (duration: \approx 5 hours)

- consulting cycle
- writing a proposal
- writing an effective CV
- client interactions
- report writing

Technical Topics

reading list + 9 case studies

- data collection
- data processing
- data visualization
- statistical analysis
- data science and machine learning
- optimization
- simulations

Class Project and Team Projects

NOTES

The focus of the course is on project management and meeting business objective.

I urge you to take any and all reasonable precautions to optimize your physical and mental health.