



B7676
Developing Quantitative Intuition (QI):
Responsive Data-Driven Decision Making
(Revised: March 22, 2021)

Time: June 28th – July 2nd
(9:00am-5:00pm)

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Course Description

The goal of this workshop-style course is to teach the systematic framework to make smarter decisions under uncertainty -- an emerging area called *quantitative intuition*TM.

Quantitative intuition is the ability to make decisions with *incomplete information* via *precision questioning* and business acumen driven by *pattern recognition*. This requires a *parallel view* of the issues that matter rather than just a logical sequence of thoughts to see the *situation as a whole*.

Information is essential to making intelligent decisions, but more often than not, it overwhelms us in today's data-rich environment. The pace of business demands decisions to be made at a faster rate, however these decisions are often made by consensus reflecting a flight to safety rather than an insightful decision acting as a catalyst for change. To make bold decisions, the manager needs the skills to quickly extract the relevant bits from the fire hose of information.

This course will focus on the skills needed to develop quantitative intuition, namely how to gather, understand, and find value in data across the business continuum. Additionally, once the relevant data is found, we will spend time to become proficient in extracting meaningful insights and develop a set of pragmatic communication techniques to influence change. We will *not* teach data analysis software tools. Rather, students will learn to formulate critical business questions to effectively frame issues. The practical lessons taught will topple conventional wisdom that you need to be a numbers whiz to make sound, fact-based decisions. The course is aimed at managers and aspiring managers in all facets of business (e.g., consulting, marketing, strategy, product management, and finance) who wish to equip themselves with pragmatic skills to be successful in our data-driven world through precision questioning and quantitative intuition.

Course Format

This block week class will be taught in a workshop style using a combination of lectures, guest speakers, simulation via an immersion experience tool, and in class exercises. The instructors will teach the class jointly providing a bridge between theory and practice. An important aspect of the course involves getting hands-on experience with data-driven decision making through multiple practical exercises. Throughout the course the students will also work on a group project that will provide an opportunity to integrate the steps in developing quantitative intuition discussed in class. Class sessions will be devoted to exploring the material through analysis of cases and applying the concepts to real world situations. Finally, the group project and final individual assignment will allow you to get first hand experience in the quantitative intuition framework.

Required Material

Required reading on Canvas

Student Evaluation

Class Participation - 25% (individual)

In class project - 35% (groups of 2-4) – Type A

Project - 40% (Individual) – Type C

Class Participation and Attendance

1. To a large extent, learning in this class is related to your willingness to expose your insights and viewpoints to the critical judgment of your classmates. Thus, to make the learning process much more beneficial and enjoyable for both you and us, each one of you is expected to contribute to class discussions. This includes preparation for class by reading the text and cases, and presenting your opinions or summaries of material covered in class. The basis for class participation is quality, not quantity. We will track and grade online attendance and participation.
2. Attendance is a necessary but not sufficient condition for participation. If you do not actively participate, you will receive a low participation grade even if you attend every class.

Classroom Etiquette:

We understand that a block week on Zoom can lead to Zoom fatigue and we will attempt to mix things around and allow for sufficient breaks. However, out of respect for the other students in your class, it is important for you to focus your full attention on the class, for the entire class period. Most students observe proper decorum, but it takes only one person's behavior to distract the entire class. Columbia Business School students have complained to the school about students who use class time for other purposes or act in a distracting manner. Class will be conducted using the same rules of decorum that would apply in a business meeting. These rules include the following:

- We will start on time.
- Once you have joined, you should leave the Zoom classroom only if absolutely necessary. We understand that sometime remote learning and situation in the house may require brief interruptions.
- If for some reason you must be late for class or leave early, please let one of us know.
- If you know in advance that you will miss a class, please let one of us know.
- Please leave your camera on, if possible, throughout the session.
- Turn off your cell phone, Smartphone and any other communications device (that is used to connect to the classroom) during class.

Remote Course Culture

The purpose of Columbia Core Culture is to promote the values of a consistent classroom environment of mutual respect, preparation and engagement in Core and Elective courses. Students are expected to adhere to the same standard of behavior prescribed by Core Culture and Honor Code in both in-person and remote classes.

Present: Students should be on time and present for the entire session:

- You should join your class through Canvas 10 minutes before your class starts to ensure you can address any technical difficulties before class starts.
- Make sure your name as it displays on Canvas is visible.
- While electronic devices are necessary for remote instruction, they should only be used for educational purposes during class time. In other words, you are always expected to have Zoom as the active screen on your computer.
- Your camera must be turned on upon joining the room unless otherwise requested by your instructor. As a reminder, you are expected to dress appropriately when attending.
- You are expected not to leave class during the session unless given a break by your instructor.
- You should attend the section of the course in which you are enrolled. All courses will be held at scheduled times unless otherwise indicated.

Prepared: Students should complete pre-work needed for class.

- Expect cold-calling. Your faculty will share expectations on how to answer when cold-called. Make sure you know how to mute and unmute yourself.
- Expect to use PollEverywhere during class, and that part of a student's participation grade is to participate in polling.

Participate: All core courses will have a meaningful component of the final grade attached to preparation and participation.

- Communications will be respectful. Inappropriate language will not be tolerated, and the faculty member has the right to determine what is inappropriate.
- Everyone's comments are important. The diversity of experience among members of the class will enhance learning. All students will be treated equitably within the classroom. The classroom is a place of expression and discussion. Be courteous to others and do not interrupt when another student is speaking

Feedback

Your feedback is important for the success of this course. Please feel free to talk to any of us, drop us a note or send us an email to share your views with us.

Written Assignments

There is one course assignment to be completed individually as a project write-up. The purpose of the assignment is to illustrate the material covered in class. The assignment will be due on August 10th. Details of the individual assignment will be provided in class.

Group Project

The objective of the group project is to provide students with experience in applying the concepts and methods learned in class over the course of the class. We will provide you with a real-world business problem. During the week we will give each group time to work on your project, applying the material covered in class that day to your project. At the end of the week, each group will present their analysis and findings from their group project, highlighting how they applied responsive decision making to the data-driven problem provided. Each group will also submit a short deck of the final presentation and a PRFAQ document (details will be provided in class).

Summer 2021 – Tentative Class Schedule

Session	Topics
Day 1 – Why QI Monday, June 28	<ul style="list-style-type: none"> • Introduction to QI • Understanding your biases • Effectively framing the issue • Effectively brainstorming ideas • Group project work time
Day 2 – Precision Questioning Tuesday, June 29	<ul style="list-style-type: none"> • How to ask data-driven questions • A model of yourself is better than yourself • The decision moment • Group project work time
Day 3 – Pattern Recognition Wednesday, June 30	<ul style="list-style-type: none"> • Interrogating the data • The art of guesstimating - the Fermi method • Group project work time
Day 4 – Parallel Processing Thursday, July 2	<ul style="list-style-type: none"> • Synthesis vs. Summary • Data visualization • 3D storytelling • Group project work time
Day 5 - Practicum Friday, July 2	<ul style="list-style-type: none"> • Group presentations • Conclusions • Course finale
Friday, July 16	Individual assignment due date