

MCMXVI

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MIT Analytics Capstone Project Overview

Master of Business Analytics

MIT
MANAGEMENT
BUSINESS ANALYTICS



OPERATIONS
RESEARCH
CENTER

We welcome you to participate as a Corporate Partner in the 2021 MIT Analytics Capstone Project

This presentation will outline what is required to propose an analytics project for your organization to work with our MIT students and faculty.



mitsloan.mit.edu/master-of-business-analytics



BusinessAnalytics@mit.edu

What is the MIT Master of Business Analytics Program?

- ❖ Launched in March 2016, the MBAn program is a world-class 12-month rigorous degree program focused on applying the tools of modern data science to solve real-world problems in business and society
- ❖ The full-time advanced analytics program includes three semesters: fall, spring, and summer
- ❖ Students in the program have strong mathematical, computer science, and statistical backgrounds. We are a **STEM** classified program
- ❖ In 2020, the program was ranked the #1 Business Analytics program in the world by QS for a 4th year in a row ([Source](#))

What is the Student Profile?

Key Statistics for the Class of 2021

16 months

Average Work Experience

23

Countries Represented

23

Average Age

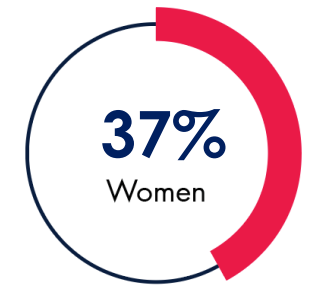
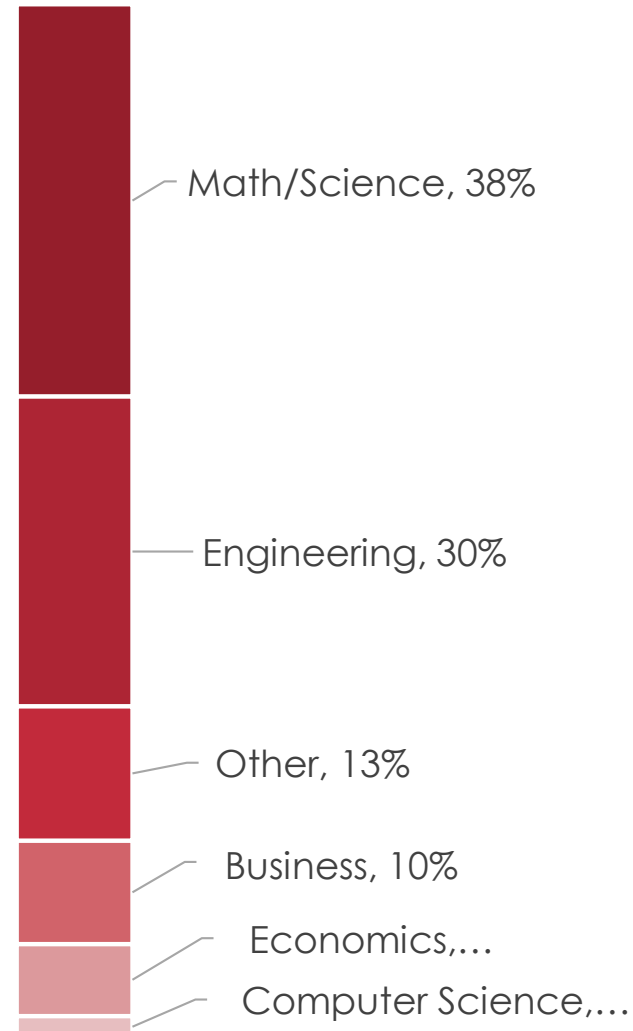
3.9

Average Undergraduate GPA

167

Average GRE Quant Score

Undergraduate Majors



GRE Range (*middle 80%*)



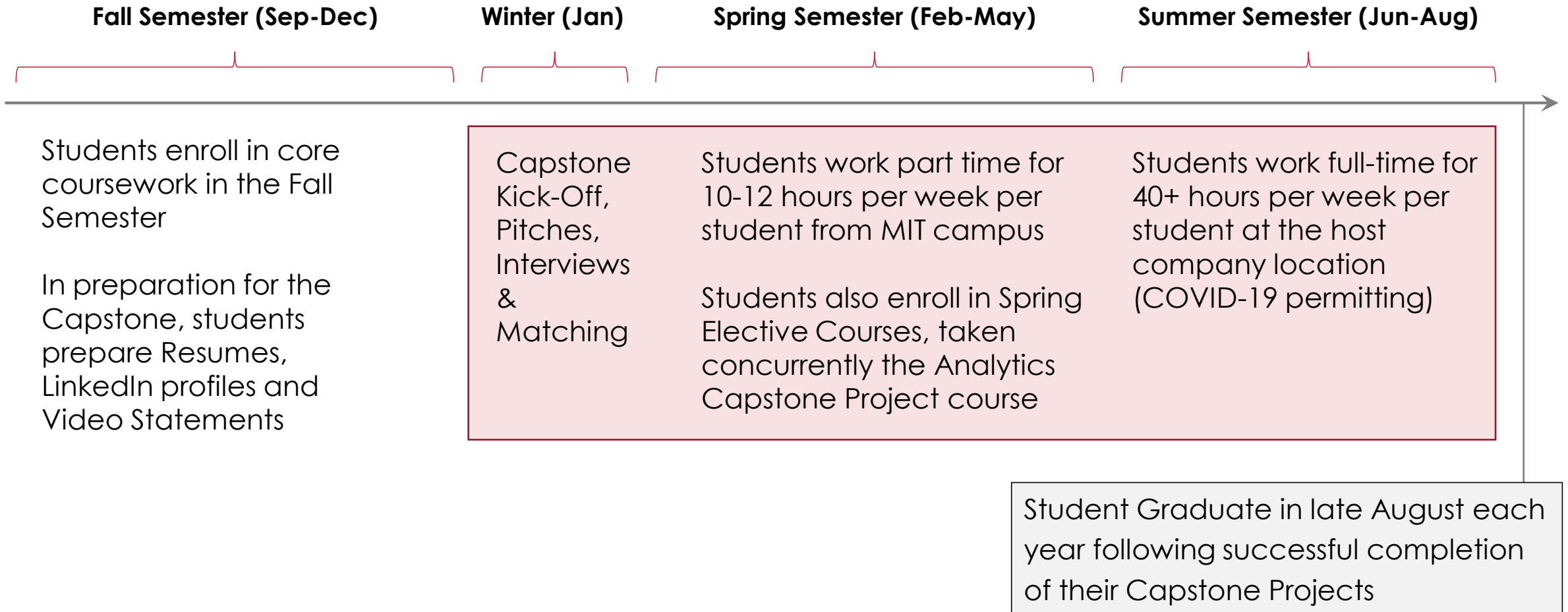
GRE Verbal (*middle 80%*)



Capstone Project Overview

- ❖ This required 24-unit course provides the practical application of business analytics and data science problems within a real company
- ❖ Teams of 2 students, matched with company projects, work with companies to define an analytics project and scope
- ❖ Faculty advisors are assigned to each team and in some cases, PhD students from the Operations Research Center
- ❖ In class during the Spring semester, students refine and improve on projects and devise methods for solving problems for their Capstone Sponsor
- ❖ The culmination of the program is a 10-week summer, on-site, practical training experience followed by the Analytics Capstone Showcase

Capstone Project Timeline



Key Indicative Dates for the 2021 Cycle

Oct to Dec	Initial Capstone Project discussion with Companies, draft proposals received
Dec 15th	Student Resume Books sent to Companies for review, NDA process finalized
Jan 5th	Final Capstone Project Proposals received & Sample Data Sets Due from Companies
Jan 13th	Student Video Applications sent to Companies for review
Jan 14th & 15th	Virtual Company Pitches & Kick-Off, followed by Virtual Networking Sessions
Jan 15th	Company Interview short-lists due
Jan 19th – Feb 5th	Online Capstone Interviews with Students
Feb 5th	Rankings List due from Companies and Students
Feb 12th	Capstone Matches Announced
Feb to May	Students work part-time (10 hrs per week per student)
Jun to Aug	Student work full-time (40 hrs per week per student) for a minimum of 10 weeks
Aug 20th	Analytics Capstone Showcase 2021
Aug 27th	Class of 2021 Graduation Ceremony

What Are Student Deliverables?

- ❖ At the end of the 7-month course, students will submit a detailed **30+ page project report** and hand over any **code** they have written for the company
- ❖ Your organization will be asked to provide a **performance evaluation**, and managers will have the ability to give a grade recommendation for each student
- ❖ The students will be required to deliver a **final presentation** and **poster** to both your organization as well as a group of faculty from the MIT Operations Research Center
- ❖ Please visit the below link to view final projects and videos from 2020:

[MIT 2020 Capstone Projects Showcase](#)

2020 Capstone Partner Companies

References are available upon request



Sample Capstone Topics from 2020

Air Canada: Revenue Integrity - Fraudulent Booking Identification

BMW Germany: Automotive Noise Mining and Classification

BMW North America: A Data-Driven Car Recommender for US Dealerships

Coca Cola Southwest Beverages: Prioritizing Customer Visits

Comcast: Optimizing Content Likely Personalization

General Motors: Crowd Sourcing Fuel Data

Lincoln Laboratory: Predictive Aircraft Maintenance

Nordstrom: Local Inventory Deployment Optimization

Pfizer: Prevenar Factory Schedule Optimization

Quest Diagnostics: Disease Risk Evaluations in Life Insurance

Starbucks: IoT Predictive Maintenance for Mastrena II Espresso Machines

Unilever: Digital Marketing Attribution Model

USPS: Opioid Detection in US Mail Stream

Walmart: Planogram Optimization – Optimal Shelf Placement

To view all Projects
Posters from 2020,
please visit this
[DropBox link](#).

What are the Costs and Benefits?

The cost to sponsor the 7-month MIT Analytics Capstone Project is \$60,000 per project. Each project will be comprised of two students and a faculty advisor. This payment is made to MIT each year during the Spring semester; Companies do not pay the students or faculty directly.

There is no fee for submitting a project proposal.

The benefits to sponsoring a Capstone Project include:

- ❖ Help with addressing your organization's business problems which require advanced analytical techniques and receive recommendations with **descriptive, predictive** and **causal data analysis**
- ❖ Access to **high quality analytics talent** for recruiting, including invitations to networking activities, social events and formal interviews
- ❖ Access to **high-caliber faculty** advisors from MIT Sloan and the Operations Research Center
- ❖ Opportunity to develop a deeper relationship with MIT Sloan, the Operations Research Center and our Portfolio of Programs

What Makes a Good Capstone Project?

- ❖ In building a portfolio of proposals from which our students will select, MIT is looking for projects that fit in a variety of industries and sectors, address a diversity of types of problems, require **advanced depth of analysis**, and have insured availability of **rich data** at the outset of the project
- ❖ Your company is invited to provide your data, time, and insights to enable student teams to deliver actionable solutions and impactful findings
- ❖ From the organization's perspective, the project should have **high business relevance and value**
- ❖ **Detailed project descriptions** are critical since some projects will not be selected
- ❖ Project proposals are evaluated by the MBAn academic team and accepted projects are presented to the students in January for bidding and matching

What is Required in the Proposal Submission?

Project Proposals are typically 2-3 page Word or PDF documents. We accept submissions through email to BusinessAnalytics@mit.edu

Organization, Title,
Topic & Location

Please indicate the name of your company/organization as well the division/team name if applicable. Please also indicate the geographic location(s) of the project.

Purpose of the
Project

Please state what the proposed project is expected to accomplish in terms of the business analytics context. Detail the particular issue or problem to be addressed, including the areas of business strategy or operations, challenges encountered in previous efforts to resolve (if any).

Data Requirements
& Access

Please explain what datasets will be available to the students and how they will be able to access the data. Companies typically work with their IT department to figure out the best way to share information with the students. Some companies provide a company laptop to the students, others let students use their personal laptops. Some companies also provide access to a secure cloud server.

Technical Skills

Please include any technical expectations of the students (i.e. any specific programming languages or software tools such as SQL, Python, Tableau, etc.)

Primary Contact

Provide the name, contact information, title, and role of the primary contact person for the project in your organization. Also include locations (city, country) of any on-site visits potentially necessary for data and information gathering.

What Additional Documents are Required?

- ❖ We ask all host companies to sign a Non-Disclosure Agreement (**NDA**) because confidential information will be supplied to the Capstone teams
- ❖ Careful consideration should be given to the nature of the data that will be required for the course because MIT only wants to execute NDAs when confidential information is being shared. MIT will keep all company information secure and destroy it at the end of the project
- ❖ If your project does not involve any confidential information, no NDA is required
- ❖ MIT and your Company will also sign a Statement of Work (**SOW**) which acknowledges the scope of the project and each Parties' roles and responsibilities

It is important to start the NDA and SOW process early so that all necessary documents are signed before the teams select projects.

Where Can I Find More Information and Example Proposals?

Please visit this [DropBox link](#) to download all relevant materials including:

- Sample Successful Capstone Proposals
- Sample Student Resume Book (the Official 2021 Resume Book will be ready on Dec 15th, 2020)
- MIT Standard Non Disclosure Agreement (**NDA**)
- Capstone Statement of Work (**SOW**)

If you have any trouble downloading the link above, please reach out to BusinessAnalytics@mit.edu to request the materials via email

- For 2020, we are seeking 30 Capstone Projects for a cohort size of 60 students.

We hope that you will participate!

If you would like to submit a Capstone Project Proposal or if you have any questions, please contact us using the email address below.



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