

MS in MANAGEMENT SCIENCE & ENGINEERING

ACADEMIC ADVISING FOR FALL 2019

AGENDA

1. Your Arrival
2. Degree Overview and Requirements
3. Program Overview
4. Probability Part 1 Waiver Exam Application
5. Suggested Electives based on interest:
Consulting, Management, Finance and
Entrepreneurship
6. Business School DROM Courses
7. Faculty Advisors

YOUR ARRIVAL

- Monday August 12 - Columbia IEOR Beer & BBQ at Brooklyn Brewery
- Thursday August 15 - Program Kick-Off **MANDATORY**
- Friday August 16 - Classes begin! **MANDATORY**
- Saturday August 17 - Columbia Engineering Welcome Day **MANDATORY**

MS&E DEGREE OVERVIEW

1. Master of Science in Management Science & Engineering
2. Program offered by Columbia Engineering in partnership with Columbia Business
3. Expected Completion: August or December 2020
4. Expected Degree Conferral: October 2020 or February 2021

DEGREE REQUIREMENTS

1. 36 credits: Five required core courses plus electives
2. MSE core: DROM B8000-060, IEOR E4004-002, IEOR E4111, IEOR E4101-002, IEOR E4102
3. 9 credit minimum from the Business School
4. ENGI E4000 is an MS degree requirement (0 points)
5. No Pass/Fail courses
6. All courses must be completed at Columbia
7. Remain in good standing
8. Uphold academic integrity

MS&E PROGRAM

- Fall 2019 Semester
 - DROM B8000-060 Optimization and Simulation Bootcamp
 - IEOR E4004-002 Optimization Models and Methods
 - IEOR E4111 Operations Consulting
 - IEOR E4101-002 Probability, Statistics and Simulation
 - ENGI E4000 Professional Development Leadership
 - Semi Core or Breadth Elective(s)
- Spring 2020 Semester
 - IEOR E4102 Stochastic Models for MSE
 - Semi Core or Breadth Elective(s)
- Summer or Fall 2020
 - Semi Core or Breadth Elective(s)

STARTING JULY 31, REGISTER FOR:

1. DROM B8000-060 Optimization and Simulation Bootcamp
2. IEOR E4004-002 Optimization Models and Methods
3. IEOR E4111 Operations Consulting
4. IEOR E4101-002 Probability, Statistics and Simulation
5. ENGI E4000 Professional Development Leadership
6. Choose 2 Semi Core or Breadth Electives

INTEREST IN CONSULTING

- IEOR E4407 Game Theoretic Models of Operations
- IEOR E4520 Applied Systems Engineering
- IEOR E4550 Entrepreneurial Business Creation
- IEOR E4711 Global Capital Markets
- DROM B8107-060/061 Service Operations
- DROM B8510-060 Managerial Negotiations

INTEREST IN MANAGEMENT

- IEOR E4506 Designing Digital Operating Models
- IEOR E4550 Entrepreneurial Business Creation
- IEOR E4998 Managing Tech. Innovations
- DROM B8107-060/061 Service Operations
- DROM B8510-060 Managerial Negotiations

INTEREST IN FINANCE

- IEOR E4403 Quantitative Corporate Finance
(Or IEOR E4578 Corporate Finance, Accounting & Investment; may not take both)
- IEOR E4700 Introduction to Financial Engineering
- IEOR E4711 Global Capital Markets

INTEREST IN ANALYTICS

- IEOR E4506 Designing Digital Operating Models
- IEOR E4525 Machine Learning for Financial Engineering & Operations
- IEOR E4540 Data Mining
- IEOR E4650 Business Analytics
- DROM B8131-060 Sports Analytics
- DROM B8123-060 Demand & Supply Analytics
- IEOR E4501 Tools for Analytics*
- IEOR E4523 Data Analytics*

*The above two courses will be opened for registration in late August. Priority is given to MSBA students.

INTEREST IN ENTREPRENEURSHIP

- IEOR E4403 Quantitative Corporate Finance
- IEOR E4550 Entrepreneurial Business Creation
- IEOR E4570 Entrepreneurship Bootcamp (1.5; waitlist approval)
- IEOR E4998 Managing Tech. Innovations
- DROM B8510-060 Managerial Negotiations

BUSINESS SCHOOL SEMI-CORE

The following courses are the Decision Risk and Operations Semi-Core Electives:

- DROM B8107-060/061 Service Operations
- DROM B8123-060 Demand & Supply Analytics
- DROM B8131-060 Sports Analytics
- DROM B8510-060 Managerial Negotiation

Registration Opens late August

DESCRIPTION OF COURSES

Please visit

<https://bulletin.engineering.columbia.edu/courses-1>

to see our course catalogue with brief course descriptions.

IEOR E4650 Business Analytics. 3 points.

Lect: 3. Recit: 1.

Prerequisites: (STAT GU4001) or (IEOR E4150)

In this course, you will learn how to identify, evaluate, and capture business analytic opportunities that create value. Toward this end, you will learn basic analytical methods and analyze case studies on organizations that successfully deployed these techniques. In the first part of the course, we focus on how to use data to develop insights and predictive capabilities using machine learning and data mining techniques. In the second part, we focus on the use of optimization and simulation to support prescriptive decision-making in the presence of a large number of alternatives and business constraints. Finally, throughout the course, we explore the challenges that can arise in implementing analytical approaches within an organization.

IEOR E4501 PYTHON WAIVER EXAM

- IEOR E4501 is a required co-requisite for the IEOR E4523 Data Analytics for OR
- You have an option to take a waiver exam or enroll in the course this fall, in order to take advanced level Analytics electives
- To apply to take the waiver exam, complete <https://goo.gl/forms/xFJB87Vt4E8HHDOj1> by August 22, 2019
- **Date of the waiver exam: August 30, 2019**

PROBABILITY WAIVER

- IEOR E4101 Probability Models is a required core course
- You have an option to take the full course (3 points) or request to take a waiver exam to take the half course (1.5 points)
- To apply to take the waiver exam, complete <https://goo.gl/forms/iLxJ0kMswDpJ1AMy1> by August 22, 2019
- **Date of the waiver exam: August 26, 2019**

MS&E FACULTY ADVISORS



Adam Elmachoub



Yuri Faenza



Soulaymane Kachani



Jenny Mak

Faculty advisor will be assigned beginning of September.

For early registration inquiries, please email

info@ieor.columbia.edu.

YOUR ACTION ITEMS

1. Activate your UNI
2. Login to SSOL <https://ssol.columbia.edu/>
3. Register for your courses (core & electives)
4. Review your tuition e-Bill
5. Review academic calendar
<https://registrar.columbia.edu/calendar>

THE IEOR OFFICE

SUITE 315 MUDD

info@ieor.columbia.edu

www.ieor.columbia.edu