Suggested Courses for MS IOE (Financial Engineering)

Mathematical tools

Courses in this group focus on the mathematical background used in financial engineering.

Stat 500 -- Applied Statistics I. (3 cr.)
IOE 506 (or Math 506 or Stat 506) -- Stochastic Analysis for Finance (3 cr.)
IOE 510 (or Math 561 or SMS 518) -- Linear Programming I (3 cr.)
IOE 511 (EECS 505 or Math 562) -- Continuous Optimization Methods (3 cr.)
IOE 512 -- Dynamic Programming (3 cr.)
IOE 515 (or Math 526 or Stat. 526) -- Stochastic Processes (3 cr.)
IOE 516 -- Stochastic Processes II (3 cr.)
IOE 518 -- Introduction to Integer Programming (2 cr.)
IOE 519 -- Introduction to Nonlinear Programming (2 cr.)
EECS 558 -- Stochastic Control (3 cr.)
IOE 565 -- Time Series Modeling, Analysis, Forecasting (3 cr.)
Math 572 -- Numerical Methods for Scientific Computing II (3 cr.)
EECS 558 -- Stochastic Control (3 cr.)
ECON 610 -- Stochastic Dynamic Optimization in Economics (1.5 cr.)
Stat 620 -- Theory of Probability I (3 cr.)
Math 625 (or Stat 625) Probability and Random Processes I (3 cr.)
Math 626 (or Stat 626) Probability and Random Processes II (3 cr.)

Financial Engineering

Courses in this group cover the core financial engineering courses.

IOE 452 -- Corporate Finance (3 cr.)
IOE 453 (or Math 423) -- Derivative Instruments (3 cr.)
IOE 552 -- Financial Engineering I (3 cr.)
IOE 553 -- Financial Engineering II (3 cr.)
IOE 623 (or Math 623) -- Computational Finance (3 cr.)

Electives

Elective courses in economics, computer science, finance, and IOE.

Econ 574 -- Advanced Quantitative Methods: Forecasting and Modeling (3 cr.)
EECS 484 -- Database Management Systems (4 cr.)
EECS 486 -- Object-Oriented Methodology (4 cr.)
EECS 492 -- Introduction to Artificial Intelligence (4 cr.)
Current for academic year 2018-2019

EECS 581 -- Software Engineering Tools (3 cr.)
EES 584 -- Advanced Database Systems (3 cr.)
FIN 580 -- Options and Futures in Corporate Decision Making (1.5 cr.)
FIN 618 -- Derivative Instruments (1.5 cr.)
(FIN 608 and 609) or FIN 610 -- Investments (3 cr.)
(FIN 612 and 614) or FIN 613 -- Intern'l Finance and Internat'l Financial Markets
(3 cr.)
IOE 460 -- Decision Analysis (2 cr.)
IOE 560 (or Stat 550 or SMS 603) -- Bayesian Decision Analysis (3 cr.)