List of Recommended Courses for MS / MSE Degrees in IOE with Production, Distribution & Logistics Emphasis

This list is intended to serve as a guide for IOE graduate students who wish to pursue a Master of Science (MS) or Master of Science in Engineering (MSE) degree with an emphasis on Production, Distribution and Logistics (PDL).

Core Courses in PDL
We recommend that students wishing to specialize in PDL take the following core courses:
- IOE 474: Simulation
- IOE 541: Inventory Analysis and Control
- IOE 543: Scheduling
- IOE 547: Plant Flow Systems

Operations Research Courses
We recommend that students wishing to specialize in PDL take the following courses in order to gain the necessary operations research skills. Students who have taken similar courses may wish to replace some of these with the elective courses listed in this document.
- IOE 510: Linear Programming I
- IOE 511: Continuous Optimization Methods
- IOE 512: Dynamic Programming
- IOE 515: Stochastic Processes
- IOE 545: Queueing Networks

Elective Courses
There is a wealth of elective courses that are appropriate for an MS or MSE degree with PDL emphasis. The following is a list of elective courses classified according to their subject matter. A student may wish to focus his or her elective courses in one subject or take a variety of courses in different subjects.
Electives in Engineering Management
IOE 522: Theories of Administration
IOE 523: Comparative Technology Management Seminar
IOE 548: Integrated Product Development

Electives in Financial Engineering
IOE 452 (MFG 455): Corporate Finance
IOE 453 (MFG 456): Derivative Instruments
IOE 552 (MATH 542): Financial Engineering I
IOE 553 (MATH 543): Financial Engineering II

Electives in Manufacturing
IOE 583 (ME 583, MFG 583): Scientific Basis for Reconfigurable Manufacturing
IOE 588 (ME 588, MFG 588): Assembly Modeling for Design and Manufacturing

Electives in Operations and Management Science (offered by the Business School)
OMS 605: Manufacturing and Supply Operations
OMS 615: Integrated Operations
OMS 620: Supply Chain Management
OMS 622: Rapid Plant Assessment

Electives in Operations Research
IOE 516: Stochastic Processes II
IOE 591, Section 057: Introduction to Integer Programming
IOE 591, Section 058: Introduction to Nonlinear Programming
IOE 610: Linear Programming II
IOE 612: Network Flows
IOE 614: Integer Programming

Electives in Quality Engineering and Applied Statistics
IOE 560 (STAT 550, SMS 603): Bayesian Decision Analysis
Current for academic year 2018-2019

IOE 562 (STAT 535): Reliability
IOE 565 (ME 563, MFG 561): Time Series Modeling
IOE 566 (MFG 569): Advanced Quality Control