



Core requirements for ISE Master's Program

1. Optimization methods requirement: An optimization methods course beyond what may be found in a first course in operations research at the undergraduate level. Evidence of a second level optimization methods course in a student's undergraduate record allows this requirement to be met. Examples of courses that would satisfy this requirement would be:
 - a. ISE 406 – Introduction to Mathematical Optimization
 - b. ISE 416 – Dynamic Programming
 - c. ISE 418 – Discrete Optimization
 - d. ISE 426 – Optimization Models and Applications
 - e. ISE 455 – Optimization Algorithms and Software

Alternatively, a student may propose to the master's program adviser, in advance, an appropriate advanced level optimization methods substitute.

2. Data analysis course requirement: A course beyond a first course in probability and statistics at the undergraduate level. Evidence of a second level data analysis course in a student's undergraduate record allows this requirement to be met. Examples of courses that would satisfy this requirement would be:
 - a. ISE 364 – Introduction to Machine Learning
 - b. ISE 409 – Time Series Analysis
 - c. ISE 410 – Design of Experiments
 - d. ISE 465 – Applied Data Mining
 - e. MATH 312 - Statistical Computing and Application
 - f. MATH 338 - Linear Models in Statistics with Applications

Alternatively, a student may propose to the master's program adviser, in advance, an appropriate data analysis substitute.

3. Stochastic processes methods requirement: A stochastic processes methods course beyond what may be found in a first course in operations research at the undergraduate level. Evidence of a second level stochastic processes methods course in a student's undergraduate record allows this requirement to be met. Examples of courses that would satisfy this requirement would be:



- a. ISE 339 – Stochastic Models and Applications
- b. ISE 439 – Queueing Systems
- c. ISE 404 – Simulation
- d. Math 310 – Random Processes and Applications

Alternatively, a student may propose to the master's program adviser, in advance, an appropriate advanced level stochastic processes methods substitute.