ISYE 2600: Probability and Statistics I

3 Credit Hours

Prerequisite: MATH 1190 or (MATH 1179 and MATH 1189)

This course covers descriptive statistics, probability, sampling distributions and the central limit theorem, continuous and discrete distributions used in engineering, and inferences about single samples, including point and interval estimates for means, proportions and variances.

ISYE 3100: Systems Reliability & Maintainability

3 Credit Hours

Prerequisite: (ISYE 2600 or STAT 2332) and Engineering Standing

This course introduces engineering principles and methods used for system reliability and maintainability. Data collection, accelerated testing, FMEA, FTA, system safety, and availability, sustainability are introduced.

ISYE 3120: Contemporary Technological Systems: Design, Analysis, & Architecture

3 Credit Hours

Prerequisite: ISYE 1000, ISYE 3100 and Engineering Standing

This course focuses on how system engineering principles are applied to modern technological and infrastructure systems. Defense, space, communication, energy, transportation, aerospace and manufacturing systems are analyzed. Other topics include architecture descriptions, heuristic problem solving, sociotechnical issues and managing complexity.

ISYE 3125: Statistical Quality Control

3 Credit Hours

Prerequisite: (ISYE 2600 or STAT 2332), ISYE 3600, and Engineering Standing Requirements

A study of the fundamentals of statistical quality control is provided. Topics include statistical process control with emphasis on applications and techniques including control charts for variables and attributes data, process capability, control chart implementation and management, and the role of control charts in process improvement. Other topics include the Six Sigma DMAIC model, measurement system analysis, acceptance sampling by attributes, and the use of software for control charts.