INDUSTRIAL AND OPERATIONS ENGINEERING

Program Overview

The Industrial and Operations Engineering is designed to help students learn how to improve systems and processes through rigorous statistical and mathematical analysis. Engineers, scientists, and others will develop the skills needed to apply industrial and operations engineering concepts and methodologies in the development of products and processes.
The program will provide in-depth knowledge and technical skills in the field of industrial and operations engineering and prepare students for technically significant careers within industry, government, and other organizations. As part of the degree program, all students will have the opportunity to combine general methodological knowledge with a focus on an application area of interest.

Program Committee

James C. Spall, Acting Program Chair
Principal Professional Staff
JHU Applied Physics Laboratory
Research Professor, Department of Applied Mathematics and Statistics
JHU Whiting School of Engineering

Beryl Castello
Senior Lecturer, Department of Applied Mathematics and Statistics
JHU Whiting School of Engineering

- Industrial and Operations Engineering, Master of Science (https://e-catalogue.jhu.edu/engineering/engineering-professionals/industrial-operations-engineering/industrial-operations-engineering-master-science/)

Courses

EN.715.641. Engineering Economics. 3 Credits.
This course is designed to help analysts make rational decisions when faced with allocating resources and managing tradeoffs in a resource-constrained setting. The ability to make informed decisions resting on an objective analysis of alternatives is a part of nearly every professional career. The course combines aspects of economics with methods in optimization and statistics. The concepts developed in the course are broadly applicable to decision making in many professional and personal settings, including making purchasing or hiring decisions, evaluating different personal or commercial investment options, and balancing environmental and social costs against economic costs. Course topics include the concepts of the time value of money and discounted cash flow, the mathematics of optimization as applied to resource allocation, decision making in the face of uncertainty, and consumer choice and demand estimation.
Prerequisite(s): Multivariate calculus and introductory graduate-level statistics (e.g., EN.625.603). An introductory course in optimization (e.g., EN.625.615) is also recommend but not required.