It is fair to say the industrial engineers and operations researchers cast the widest net of all engineers with regard to the domains they work in. While other engineering disciplines apply skills to very specific areas, IEOR gives practitioners the opportunity to work in a variety of businesses. A few examples of opportunities for IEs are:

- As a management engineer in a hospital, you may help doctors and nurses make the best use of their time in treating patients. You may also design procedures for optimal use of medical facilities to help bring the cost of healthcare down.
- As an ergonomist in a television manufacturing plant, you may change the tools workers use to assemble televisions to reduce the risk of repetitive stress injuries.
- As a quality engineer for a public gas and electric company, you may improve customer satisfaction by designing a process to schedule service calls around the availability of the customer.
- As a financial engineer, you may aim to precisely determine the financial risk that certain financial instruments create.
- As a revenue manager, you may optimize organizational revenue based on operational capacity and timing (yield management), for different market segments or from different sources of funding.
- As an analyst, you may conduct real-time system monitoring to optimize operations.

IEOR is also known as operations management, management science, systems engineering, or manufacturing engineering; a distinction that seems to depend on the viewpoint or motives of the user. Recruiters or educational establishments use the names to differentiate themselves from others. In healthcare, for example, industrial engineers are more commonly known as management engineers or health systems engineers.

The subfields of IEOR are:

- Operations research/Operations management
- Systems engineering
- Management sciences
- Engineering management
- Decision sciences
- Information engineering
- Quality engineering
- Ergonomics engineering

At the IEOR program at UMass Amherst, we offer a combination of courses that will equip students in a majority of these fields.