INDUSTRIAL ENGINEERING

What can I do with this major?

AREAS

INDUSTRIAL

Project, program or operations management
Manufacturing systems
Computer-integrated manufaturing automation
Supply chain management and logistics
Productivity, methods and process engineering
Quality measurement and improvement
Human factors and ergonomics
Strategic planning
Management of change
Financial engineering
Engineering management
Lean, six sigma
Systems design
Modeling and simulation
Optimization
Data analytics

EMPLOYERS

Industries:
Manufacturing, aerospace, transportation, construction, communications, electrical and electronics machinery
Retail companies
Consulting companies
Banks and financial institutions
Hospitals and healthcare organizations
Education and public service agencies
Utility companies
Not-for-profit organizations
Small businesses and start-ups (entrepreneurship)
State and federal government including armed forces

STRATEGIES

Discipline focuses on effectively utilizing people, products, machines, materials, energy, etc. to improve processes or systems.

Plan to take courses in engineering and business.
Seek experiences in student organizations to develop leadership, interpersonal and communication skills. Diplomacy is important in the field, as people are considered a factor of production.
Pursue practical experience through part-time jobs, co-ops or internships to develop a professional network and increase marketability.
Consider membership in student chapters of organizations such as the Institute of Industrial & Systems Engineers to participate in competitions on topics including operations research, manufacturing, human factors, ergonomics, management science, lean practices and simulation.
Earn MS or MBA for advancement in management or administration; some programs offer dual degrees.

GENERAL INFORMATION

- Utilize Sloan Career Cornerstone Center’s website to learn more about opportunities in engineering.
- A bachelor's degree provides a wide range of career opportunities in industry, business and government.
- A bachelor's degree is good background for pursuing technical graduate degrees as well as professional degrees in Engineering, Business Administration, Medicine or Law.
- Graduate degrees offer more opportunities for career advancement, college or university teaching positions.
- Related work experience obtained through co-op, internships, part-time or summer jobs is extremely beneficial.
- Develop excellent verbal and written communications skills including presentation and technical report writing. Learn to work well on a team to maximize collaborations with other engineers and those outside of the profession.
- Develop computer expertise within field.
- Engineers need to think in scientific and mathematical terms and exhibit the abilities to study data, sort out important facts, solve problems and think logically.
- Other helpful traits include intellectual curiosity, creativity, technical aptitude, perseverance and a basic understanding of the economic and environmental con text in which engineering is practiced.
- Because of rapid changes in most engineering fields, both continued education and keeping abreast of new developments are very important.
- Join relevant professional associations, attend meetings, participate in design competitions and stay up-to-date on research/publications.
- All states and the District of Columbia require registration of engineers whose work may affect the life, health or safety of the public.
- Professional or technical societies confer certification in some areas.
- Research Fundamentals of Engineering (FE) exam requirements, as this exam is typically the first step in becoming a Professional Engineer (PE).
- Professional Engineer (PE) licensing guidelines vary by state. Check with the National Council of Examiners for Engineering and Surveying (NCEES) for links to state boards.
- Become familiar with the federal job application and employment procedures.