Industrial Engineers

SOC: 17-2112 • Career Profile Report

■ Key Facts

$101,140	351,100	+11.0%
Median Salary	Employment	Growth Rate

■ Requirements & Salary Range

Education: Bachelor's degree

■ Automation Risk Assessment

Low Risk - 17.0% probability of being automated in the next 10-20 years.

This job is relatively safe from automation due to its creative, social, or complex problem-solving requirements.

■■ Work-Life Balance

7.2/10 - Good work-life balance

■ Personality Fit (RIASEC)

Higher scores indicate better personality fit for this career type.

Realistic	8.2/10	**Investigative**	8.8/10
Artistic	6.4/10	**Social**	5.2/10
Enterprising	5.8/10	**Conventional**	6.6/10

■ Top Skills Required

Communication skills, Computer skills, Creativity, Critical-thinking skills, Interpersonal skills, Math skills, Problem-solving skills

✓ Strengths

- High Demand
- Flexible Work
- Continuous Learning

■ Challenges

- Burnout Risk
- Rapid Technological Change

■ What They Do

Industrial Engineers typically perform the following tasks: • Estimate production costs, cost saving methods, and the effects of product design changes on expenditures for management review, action, and control. • Plan and establish sequence of operations to fabricate and assemble parts or products and to promote efficient utilization. • Analyze statistical data and product specifications to determine standards and establish quality and reliability objectives of finished product. • Confer with clients, vendors, staff, and management personnel regarding purchases, product and production specifications, manufacturing capabilities, or project status. • Communicate with management and user personnel to develop production and design standards. • Evaluate precision and accuracy of production and testing equipment and engineering drawings to formulate corrective action plan. • Recommend methods for improving utilization of personnel, material, and utilities. • Record or oversee recording of information to ensure currency of engineering drawings and documentation of production problems. • Draft and design layout of equipment, materials, and workspace to illustrate maximum efficiency using drafting tools and computer. • Direct workers engaged in product measurement, inspection, and testing activities to ensure quality control and reliability. • Develop manufacturing methods, labor utilization standards, and cost analysis systems to promote efficient staff and facility utilization. • Review production schedules, engineering specifications, orders, and related information to obtain knowledge of manufacturing methods, procedures, and activities. • Complete production reports, purchase orders, and material, tool, and equipment lists. • Coordinate and implement quality control objectives, activities, or procedures to resolve production problems, maximize product reliability, or minimize costs. • Implement methods and procedures for disposition of discrepant material and defective or damaged parts, and assess cost and responsibility. • Apply statistical methods and perform mathematical calculations to determine manufacturing processes, staff requirements, and production standards. • Study operations sequence, material flow, functional statements, organization charts, and project information to determine worker functions and responsibilities. • Formulate sampling procedures and designs and develop forms and instructions for recording, evaluating, and reporting quality and reliability data. • Regulate and alter workflow schedules according to established manufacturing sequences and lead times to expedite production operations. • Schedule deliveries based on production forecasts, material substitutions, storage and handling facilities, and maintenance requirements.