

# Industrial technology

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**Industrial technology** is the field concerned with the application of basic engineering principles and technical skills in support of industrial engineers and managers. Industrial Technology programs typically include instruction in optimization theory, human factors, organizational behavior, industrial processes, industrial planning procedures, computer applications, and report and presentation preparation.

Planning and designing manufacturing processes and equipment is a main aspect of being an industrial technologist. An Industrial Technologist is the engineer's partner in implementing certain designs and processes. Industrial Technology involves management operation, and maintenance of complex operation systems.

## Accreditation and Certification

The Association of Technology, Management, and Applied Engineering (ATMAE), accredits selected collegiate programs in Industrial Technology. Additionally, an instructor or graduate of an Industrial Technology program may choose to become a Certified Technology Manager (CTM) by sitting for a rigorous exam administered by ATMAE and covering essential topics in the field.

ATMAE accreditation is recognized by the Council for Higher Education Accreditation (CHEA) for accrediting Industrial Technology programs.

## Knowledge Base

Industrial Technology includes wide-ranging subject matter and could be viewed as an amalgamation of industrial engineering and business topics with a focus on practicality and management of technical systems with less focus on actual engineering of those systems.

Typical curriculum at a four-year university might include courses on manufacturing process, technology and impact on society, mechanical and electronic systems, quality assurance and control, materials science, packaging, production and operations management, and manufacturing facility planning and design. In addition, the Industrial Technologist may have exposure to more vocational-style education in the form of courses on CNC manufacturing, welding, and other tools-of-the-trade in manufacturing. This differentiates the field of Industrial Technology from other engineering and business disciplines. Graduates of Industrial Technology programs are seen as moderators between engineers, top management and production-line workers.

# Technological development in industry

A major subject of study is technological development in industry. This has been defined as:

- the introduction of new tools and techniques for performing given tasks in production, distribution, data processing (etc.);
- the mechanization of the production process, or the achievement of a state of greater autonomy of technical production systems from human control, responsibility, or intervention;
- changes in the nature and level of integration of technical production systems, or enhanced interdependence;
- the development, utilization, and application of new scientific ideas, concepts, and information in production and other processes; and
- enhancement of technical performance capabilities, or increase in the efficiency of tools, equipment, and techniques in performing given tasks.

Studies in this area often employ a multi-disciplinary research methodology and shade off into the wider analysis of business and economic growth (development, performance). The studies are often based on a mixture of industrial field research and desk-based data analysis and aim to be of interest and use to practitioners in business management and investment (etc.) as well as academics. In engineering, construction, textiles, food and drugs, chemicals and petroleum, and other industries the focus has been not just on the nature and factors facilitating and hampering the introduction and utilization of new technologies but also on the impact of new technologies on the production organization (etc.) of firms and various social and other wider aspects of the technological development process.