

MECHANICAL ENGINEERING VS. MECHANICAL ENGINEERING TECHNOLOGY

GENERAL OVERVIEW

ME PROGRAMS

MET PROGRAMS

Program Graduate

An innovator - one who is able to interweave a knowledge of advanced mathematics, the natural and engineering sciences, and engineering principles and practices with considerations of economic, social, environmental, and ethical issues to create new systems and products. The ME graduate can develop new procedures to advance the state of the art.

A doer or implementor - one who is able to apply a basic knowledge of mathematics, the natural and engineering sciences, current engineering practices, and an understanding of economic principles to the solution of design problems and to the operation or testing of engineering and manufacturing systems. The MET graduate can apply established procedures which utilize the current state of the art.

Program Objective

To provide the knowledge necessary to design and manufacture state-of-the-art products and systems needed to meet the current and future needs of society. To provide the knowledge required to apply state-of-the-art techniques and designs to meet the current needs of society.

Program Emphasis Emphasis is on developing methods of analysis and solutions for open-ended design problems. Emphasis is on applying current knowledge and practices to the solution of specific technical problems.

Expertise Objective

To develop conceptual abilities.

To develop application abilities.

Program Length

Four years.

Associate Programs: Two years.
Baccalaureate Programs: Four years or two years if an associate degree program is first completed.

Degree Awarded

Bachelor of Science in Mechanical Engineering

Associate Programs: Associate of Engineering Technology or Science.
Baccalaureate Programs: Bachelor of Technology, Engineering Technology, or Science.

Academic Terminology

Graduates are referred to as engineers.

Associates Programs: Graduates are referred to as engineering technicians.
Baccalaureate Programs: Graduates are referred to as engineering technologists.

PROGRAM CHARACTERISTICS

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Program Basis

The equivalent of one full year of mathematics and basic science courses provides the foundation for the program that is calculus based.

Associate programs and baccalaureate programs require the equivalent of one-half of a year and three-quarters of a year, respectively, of applied courses in mathematics and basic sciences. Although both programs are algebra based, calculus usage is required at both levels.

Emphasis of Technical Courses

Engineering courses stress the underlying theory as well as current and potential applications in business and industry.

Technology courses stress the application of technical knowledge and methods in the solution of current industrial type problems.

Emphasis of Laboratory Courses

Laboratory courses provide an intensive overview of experimental methods and of the related underlying theories.

Laboratory courses, an integral component of MET programs, stress practical design solutions as well as manufacturing and evaluation techniques appropriate for industrial type problems.

Technical Design Emphasis

General design principles and tools applicable to a wide variety new problem situations are heavily stressed.

Current design procedures of a complex but well-established nature are developed and applied to problems in a specialized technical area.

Transfer Potential

Transfer to a technology program from an engineering curriculum is possible with a minimum loss of credits and time.

It is generally not possible to transfer to an engineering curriculum from a technology program without a significant loss of credits and time.

CAREER OPPORTUNITIES

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Typical Aspirations of the New Graduate

The ME graduate entering industry would most likely aspire to an entry-level position in conceptual design, systems engineering, manufacturing, or product research and development.

The MET graduate entering industry would most likely aspire to an entry-level position in product design, development, testing, technical operations, or technical services and sales.

Technical Interest	The ME graduate is relatively broad and has an analytical, creative mind challenged by open-ended technical problems.	The MET graduate is relatively specialized and has an applications orientation, challenged by specific technical problems.
Adaptability to Current Industrial Practices	A ME graduate typically requires a period of "internship" since engineering programs stress fundamentals.	The MET graduate is prepared to immediately begin technical assignments since technology programs stress current industrial practices and design procedures.
Mobility	Many ME's move into management positions.	MET's can move into industrial supervisory positions.
Professional Registration	ME's are eligible to become registered professional engineers in all states by a process of examination and documentation of experiences.	Technicians and technologists may become professionally certified in their specific areas of expertise. Technologists may become registered professional engineers in many states; however, the requirements are usually different than those for engineers.
Graduate Education Opportunities	Graduate study in engineering as well as other areas is available for qualified students having a B.S. in engineering.	Graduate study in technology is not generally available and entrance to graduate engineering programs is most often difficult. Advanced degrees in technical education and business are possible.

Material from American Society of Mechanical Engineering (www.ASME.org) brochure entitled, "Mechanical Engineering & Mechanical Engineering Technology - Which Path Will You Take?"

Engineering

Research
Complex analysis
Complex design
Development
Manufacturing
Test and Evaluation

Engineering Technology

Manufacturing
Test and Evaluation
Routine design
Production
Operation, service, and maintenance
Distribution and Sales