

Department of Engineering Technology

Advisory Council
Meeting
November 5, 2004

Faculty and Staff

- Faculty (8 faculty positions including chair)
 - ECET Faculty (Roger Seifried, Suguna Bommaraju)
 - EMET Faculty (Dave Hergert, Mysore Narayanan)
 - MET Faculty (Gary Drigel, Ron Earley, Vipul Ranatunga)
- Staff (4 positions—2 per campus)
 - Hamilton (Pam Webb, Frank Tonner)
 - Middletown (Don Becker, Debbie Smith)

Programs

- Electro-Mechanical Engineering Technology (BS)
- Mechanical Engineering Technology (BS)
- Electrical and Computer Engineering Technology (AD)
- Mechanical Engineering Technology (AD)
- Associate of Technical Study (AD)
- Computer Maintenance (Certificate)
- CAD/CAM (Certificate)

Updates, Projects, and Events

- TAC/ABET Accreditation (EMET only) visit Fall 2005. We need your help with this.
- Senior Design 2005—April 29 in Hamilton
- Tech Challenge 2004—April 22 in Middletown—be there for robotics competition and more...
- Planning: Revising long range department plan and assessment plan. TAC/ABET accreditation in 2005.
- Assessment
 - Program Learning Objectives (graduate characteristics demonstrable a few years after graduation)
 - Program Outcomes (graduate characteristics demonstrable by graduation)

Department Educational Objectives

The Engineering Technology Department's graduates are able to:

- Apply math and physics principles to the solution of engineering technical problems.
- Use applied skills to identify, evaluate, and solve complex technical problems.
- Use engineering computer software to facilitate engineering problem solving.
- Function effectively in team-oriented activities.
- Demonstrate the knowledge of expected standards of ethical and professional conduct.
- Verbally communicate ideas.
- Prepare well-written technical reports.
- In addition, our graduates will have the necessary fundamentals to pursue life-long learning.

Program-specific Educational Objectives)

Electrical and Computer Engineering Technology (AD)—The ECET program produces graduates who:

- Analyze digital and analog electrical and electronic circuits, identify problem areas, and maintain these systems.
- Function effectively as electrical and computer engineering technicians in state and regional industries.

Program-specific Educational Objectives

Electro-Mechanical Engineering Technology (BS Completion Program)—The EMET program produces graduates who:

- Possess the ability to apply theoretical knowledge to solve engineering technology problems associated with instrumentation and control systems.
- Are knowledgeable of modern applications in process control systems.

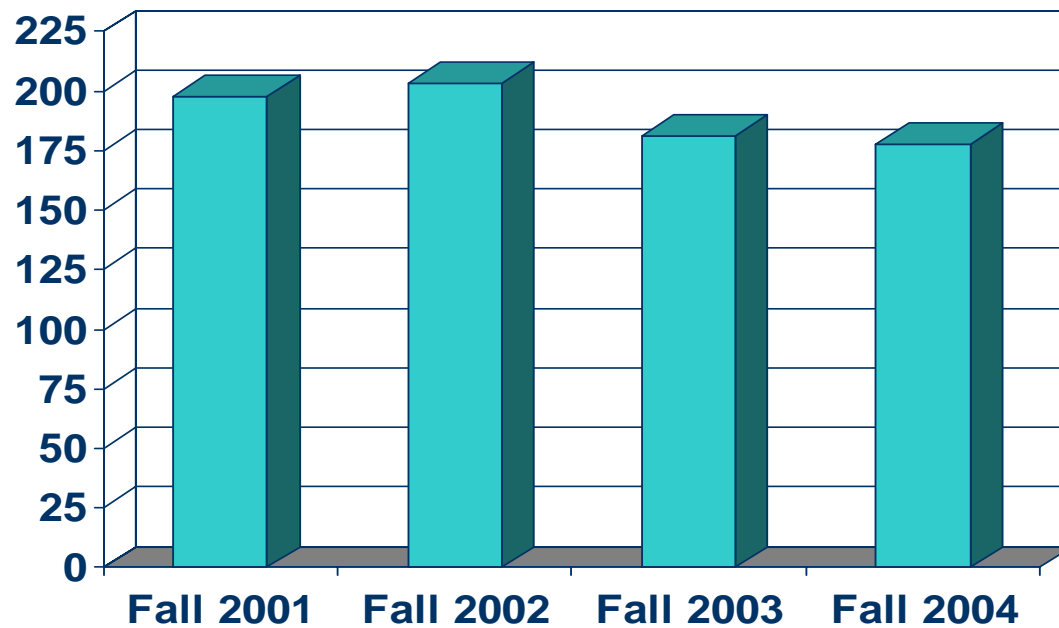
Program-specific Educational Objectives

Mechanical Engineering Technology (AD & BS)—

The MET program produces graduates who:

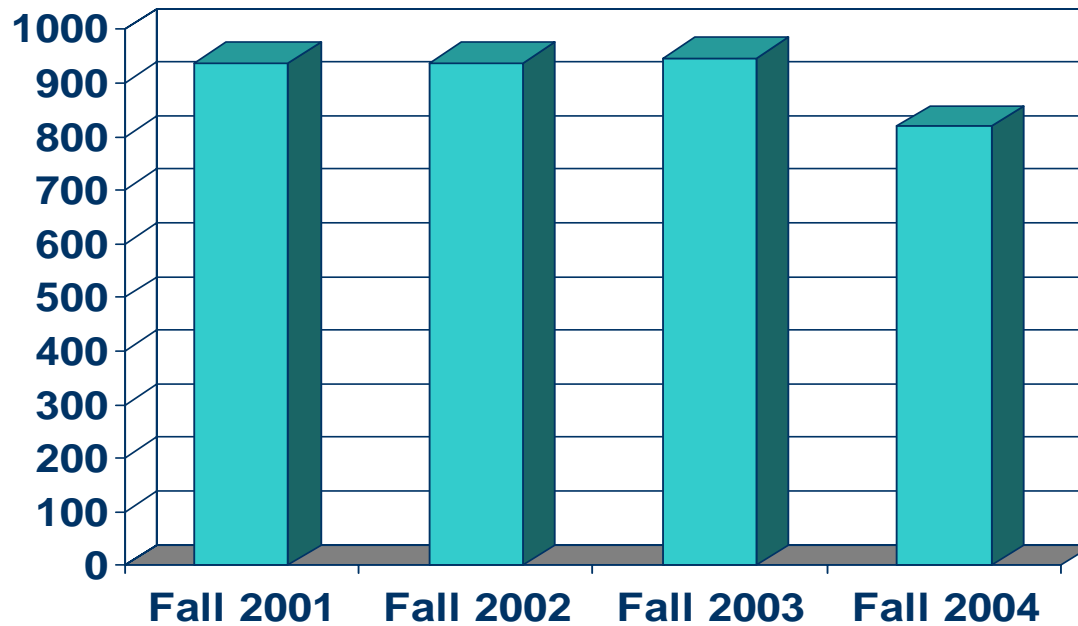
- Are able to set-up experimental testing procedures and selectively utilize data to reinforce engineering concepts.
- Have a basic understanding of modern manufacturing methods used to facilitate the production of consumer products.
- Are able to effectively and efficiently manage engineering projects. (BS Only)

Department of Engineering Technology Majors



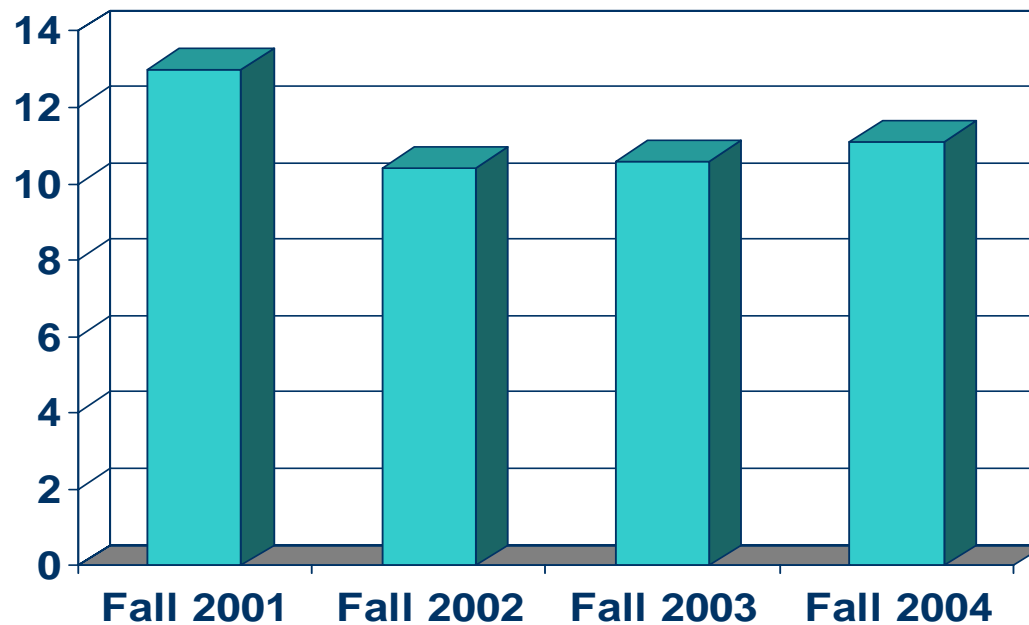
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Department of Engineering Technology Student Credit Hours

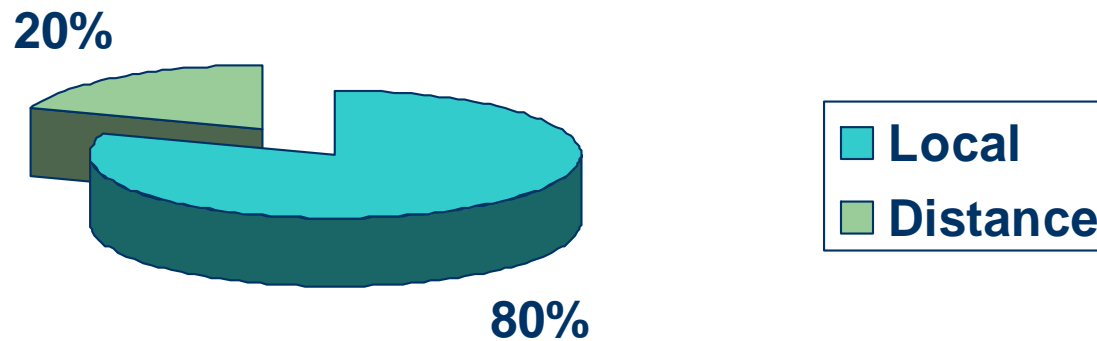


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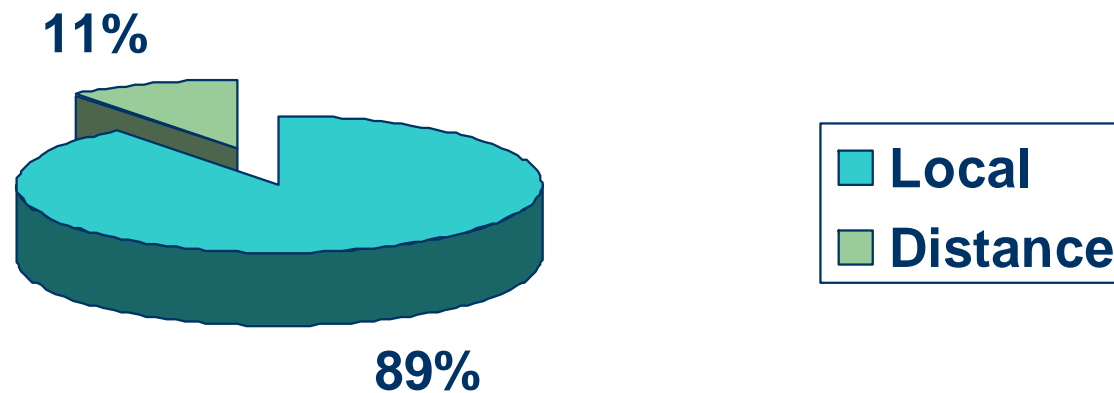
Department of Engineering Technology Students per Section



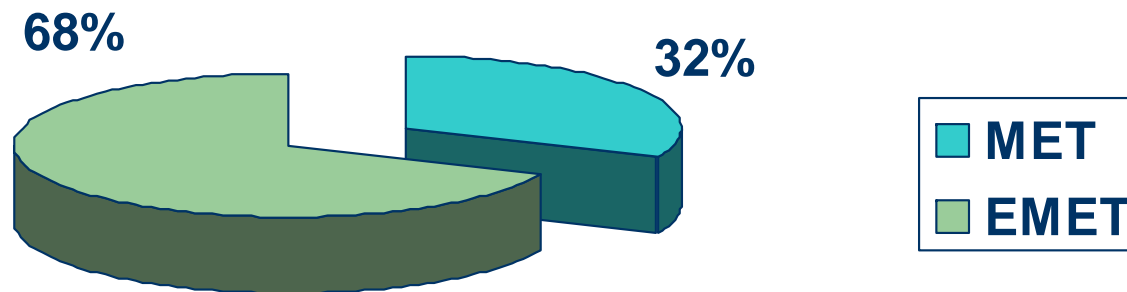
Majors—Local vs Distance (est.)



SCH—Local vs Distance)



BS Majors by Program



For EMET, about 35 majors are distance and 32 majors are local.



10/11/04

**Associate of Science and Bachelor of Science in Applied Science
Mechanical Engineering Technology**

Mechanical Engineering Technology deals with applied analysis, and design of mechanical components of mechanisms, machines, and systems of machines. Sound engineering principals are applied to the development of industrial and consumer products, usually within the scope of design teams. The program requires a thorough understanding of applied mathematics and the engineering sciences. Students will develop essential skills needed to apply experimental and analytical methods to the solution of engineering systems type problems. These skills are used to research concepts, and apply modeling methods, to simulate and test working conditions and their impact on the designed systems, and to synthesize different elements to obtain an optimum design of a specific product.

Industry is in need of qualified mechanical engineering technologists that, upon graduation, are able to apply state-of-the-art tools in the areas of computer-aided design, finite element modeling and analysis, and the concepts of advanced mechanical design to the creation of sophisticated machines and systems.

The Mechanical Engineering Technology option provides depth of study in mechanical and manufacturing engineering technology built on a solid foundation of mathematics, physics, and computer science. The program also provides breadth through required studies in economics, humanities, social science, world and American cultures, and liberal arts. Graduates of TAC/ABET accredited Mechanical Engineering Technology programs will receive two years of credit toward the Bachelor of Science degree in this program.

Graduates will find employment opportunities in a diverse spectrum of professional fields such as: Computer Aided Design, Computer Aided Analysis, and Computer Aided Manufacturing. Many mechanical engineering technologists work on team projects within manufacturing-related areas such as testing, analysis, design, and development of industrial and consumer products. Mechanical Engineering Technology graduates are well positioned to be employed in areas that permit rapid advancement into engineering management positions. All graduates of the program are eligible to sit for the engineer-in-training examination within the state of Ohio. Graduates may also continue their education at the graduate engineering technology/engineering levels.

For more information, please contact:

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Coordinator Bachelor Degree

Professor Rob Speckert
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Department Chair

Professor Gary Drigel
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Coordinator Associate Degree

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Mechanical Engineering Technology

FIRST YEAR

<u>1st SEMESTER</u>	<u>CREDIT HOURS</u>
PHY 171 College Physics	3
PHY 183 Physics Lab (MPF IV B)	1
MTH 125 Pre-calculus	5
<u>ENT 135 Computer-Aided Drafting</u>	<u>3</u>
<u>ENT 151 Engineering Materials</u>	<u>3</u>
<u>ENT 137 Intro to Eng Technology</u>	<u>1</u>
	16

SECOND YEAR

<u>1st SEMESTER</u>	<u>CREDIT HOURS</u>
ENG 215 Technical Writing	3
MTH 151 Calculus I (MPF V)(MPT)	5
<u>ENT 235 Computer-Aided Design</u>	<u>3</u>
<u>ENT 272 Mechanics II: Strength of Materials</u>	<u>3</u>
<u>ENT 252 Computer-Aided Mfg II</u>	<u>3</u>
	17

FIRST YEAR

<u>2nd SEMESTER</u>	<u>CREDIT HOURS</u>
PHY 172 College Physics	3
PHY 184 Physics Lab (MPF IV B)	1
ENG 111 College Composition (MPF I)	3
CSA 163 Intro-Comp Concepts & Prog (MPF V)	3
<u>ENT 152 Computer-Aided Mfg I</u>	<u>3</u>
<u>ENT 271 Mechanics I: Statics</u>	<u>3</u>
	16

SECOND YEAR

<u>2nd SEMESTER</u>	<u>CREDIT HOURS</u>
COM 135 Public Speaking (MPF II B)	3
MPF III elective (US Cultures)	3
<u>ENT 278 Mechanics III: Analysis of Machine</u>	
<u>Components</u>	<u>3</u>
ECO 201 Economics (MPF II C)	3
<u>ENT 192 Circuit Analysis I</u>	<u>3</u>
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THIRD YEAR

<u>1st SEMESTER</u>	<u>CREDIT HOURS</u>
MTH 251 Calculus II	4
<u><i>ENT 310 Fluid Mechanics</i></u>	<u>3</u>
<u><i>ENT 312 Thermodynamics and Heat Power</i></u>	<u>3</u>
<u><i>ENT 333 Comp. Methods for Eng. Tech.</i></u>	<u>4</u>
<u><i>ENT 301 Dynamics</i></u>	<u>3</u>
	17

FOURTH YEAR

<u>1st SEMESTER</u>	<u>CREDIT HOURS</u>
<u><i>ENT 415 Heat Transfer With Applications</i></u>	<u>3</u>
<u><i>ENT 416 Topics in Mechanical Vibrations</i></u>	<u>3</u>
<u><i>ENT 497 Senior Design Project</i></u>	<u>2</u>
MPF III elective (World Cultures)	3
CHM 141 College Chemistry (MPF IV B)	3
CHM 144 College Chemistry Lab (MPF IV B)	<u>2</u>
	16

THIRD YEAR

<u>2nd SEMESTER</u>	<u>CREDIT HOURS</u>
<u><i>ENT 314 Mechanisms for Mechanical Design</i></u>	<u>3</u>
<u><i>ENT 355 Introduction to Finite Element Analysis</i></u>	<u>3</u>
<u><i>ENT 316 Project Management</i></u>	<u>3</u>
<u><i>ENT 404 Experimentation Tech. for Eng. Tech.</i></u>	<u>3</u>
STA 301 Applied Statistics or	
STA 368 Intro. To Statistics (MPT)	3
ENG 112 Composition and Literature (MPF I)	<u>3</u>
	18

FOURTH YEAR

<u>2nd SEMESTER</u>	<u>CREDIT HOURS</u>
MPF II elective (Fine Arts)	3
<u><i>ENT 498 Senior Design Project</i></u>	<u>2</u>
MPF II elective	3
MTH 231 Elements of Discrete Math or minimum 9 hours of another thematic sequence which should be initiated during the third year of the program	(3-9)
MPF IV A Biological Science elective	<u>3</u>
	14
	17

The Miami Plan has two parts: **Foundation and Focus**. The **Foundation** requirement is met by taking 36 hours of foundation courses in five specific areas. The **Focus** requirement is met by a minimum of nine hours in a Thematic Sequence outside your department of major and a minimum of three hours in a Senior Capstone Experience taken in your final year of study. The **Field** includes courses required by your major; it also includes electives.

Miami Plan Foundation (MPF) courses must be taken in the following areas:

- I. English Composition (6 hours)
- II. Fine Arts, Humanities, Social Science (12 hours)
 - A. Fine Arts (3 hours minimum)
 - B. Humanities (3 hours minimum)
 - C. Social Science (6 hours minimum)
- III. Cultures (6 hours)
 - A. United States Cultures (3 hours minimum)
 - B. World Cultures (3 hours minimum)
- IV. Natural Science (9 hours, must include one laboratory course)
 - A. Biological Science (3 hours minimum)
 - B. Physical Science (3 hours minimum)
- V. Mathematics, Formal Reasoning, Technology (3 hours)

Note: University Admission Foreign Language Requirement → 2 years High School or 1 year college level

MPF I

ENG 111	3
ENG 112	$\frac{3}{6}$

MPF II

A. MPF II ELECTIVE (Fine Arts)	3 (2 nd semester, 4 th year)
B. COM 135	3 (2 nd semester, 2 nd year)
C. ECO 201	3 (2 nd semester, 2 nd year)
MPF II ELECTIVE	$\frac{3}{12}$ (2 nd semester, 4 th year)

MPF III

A. MPF III ELECTIVE	3 (2 nd semester, 2 nd year)
B. MPF III ELECTIVE	$\frac{3}{6}$ (1 st semester, 4 th year)

MPF IV

A. MPF IV ELECTIVE	3 (2 nd semester, 4 th year)
B. CHM 141	3
C. CHM 144	2
D. PHY 183	1
E. PHY 184	$\frac{1}{10}$

MPF V

MTH 151	$\frac{5}{5}$
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MPT → MTH 2 Basic Mathematical Tools for Science

MTH 151	5 required
STA 301	3 required
MTH 231	$\frac{3}{11}$

Or minimum 9 hours of another thematic sequence which should be initiated no later than the third year of the program.

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Questions and Discussion