

MECHANICAL ENGINEERING TECHNOLOGY - A.A.S.

College of Applied and Technical Studies
www.kent.edu/cats

Contact Information

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- Speak with an Advisor
- Chat with an Admissions Counselor

Fully Offered

- Tuscarawas Campus

Examples of Possible Careers*

Calibration technologists and technicians and engineering technologists and technicians, except drafters, all other

- 2.1% slower than the average
- 91,600 number of jobs
- \$64,190 potential earnings

Electro-mechanical and mechatronics technologists and technicians

- 3.0% about as fast as the average
- 14,600 number of jobs
- \$59,800 potential earnings

Mechanical drafters

- -8.3% decline
- 57,500 number of jobs
- \$58,270 potential earnings

Mechanical engineering technologists and technicians

- 3.1% about as fast as the average
- 43,500 number of jobs
- \$58,230 potential earnings

Additional Careers

- Engineering technician
- Design specialist
- Mechanical Designer
- Project Engineer

*Note

Source of occupation titles and labor data is from the U.S. Bureau of Labor Statistics'

Occupational Outlook Handbook. Data comprises projected percent change in employment over the next 10 years; nation-wide employment numbers; and the yearly median wage at which half of the workers in the occupation earned more than that amount and half earned less.

Description

The Associate of Applied Science degree in Mechanical Engineering Technology provides students with knowledge and skills in the manufacturing areas related to computer-controlled equipment and integrated manufacturing. Students learn drafting, materials testing, robotics applications and computer-aided design (CAD) and computer-aided manufacturing (CAM) software for design and design documentation.

The Mechanical Engineering Technology major comprises the following concentrations:

- The **General** concentration includes coursework in microprocessors and robotics, manufacturing processes, computer-aided tool design and professional ethics.
- The **Mechtronics** concentration is cross-disciplinary and provides students with skills in electrical and electronic devices, hydraulics and pneumatics and programmable logic controllers

The degree program articulates into Kent State's Bachelor of Science degree in Engineering Technology.

Accreditation

The A.A.S. degree in Mechanical Engineering Technology is accredited by the Engineering Technology Accreditation Commission of ABET, <http://www.abet.org>.

Admission Requirements

The university affirmatively strives to provide educational opportunities and access to students with varied backgrounds, those with special talents and adult students who graduated from high school three or more years ago.

Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, and the Twinsburg Academic Center, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

For more information on admissions, contact the Regional Campuses admissions offices.

Program Learning Outcomes

Graduates of this program will be able to:

1. Apply the knowledge, techniques, skills and modern tools of mathematics, science, engineering and technology to solve mechanical engineering technology problems that require limited application of principles but extensive practical knowledge.
2. Design solutions for well-defined mechanical engineering technology problems and assist with the design of systems, components, or processes for solving broad mechanical engineering technology problems.
3. Apply written, oral and graphical communication in both technical and non-technical environments, and proficiently use technical reference material.
4. Conduct standard tests, measurements, and experiments and analyze and interpret the results.
5. Function effectively as a member of a technical team.

6. Understand and commit to address professional and ethical responsibilities, including a respect for diversity.

University Requirements

All students in an applied or technical associate degree program at Kent State University must complete the following university requirements for graduation.

NOTE: University requirements may be fulfilled in this program by specific course requirements, please see Program Requirements for details.

Code	Title	Credit Hours
Destination Kent State: First Year Experience		1
Course is not required for students with 25 transfer credits, excluding College Credit Plus, or age 21+ at time of admission.		
Kent Core (see table below)		15
Total Credit Hour Requirement		60
Some associate degrees require students to complete more than 60 credit hours.		

Kent Core Requirements

Kent Core Composition (KCOMP)	3
Kent Core Mathematics and Critical Reasoning (KMCR)	3
Kent Core Humanities and Fine Arts (KHUM/KFA)	3
Kent Core Social Sciences (KSS)	3
Kent Core Basic Sciences (KBS/KLAB)	3
Total Credit Hours:	15

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
ENGT 22099	ENGINEERING TECHNOLOGY PROJECT	2
MERT 12000	ENGINEERING DRAWING	3
MERT 12001	COMPUTER-AIDED DESIGN	3
MERT 12005	PROPERTIES OF MATERIALS	3
Additional Requirements (courses do not count in major GPA)		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
ENG 20002	INTRODUCTION TO TECHNICAL WRITING	3
or OTEC 26638	BUSINESS COMMUNICATIONS	
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Composition		3
Kent Core Humanities and Fine Arts		3
Kent Core Social Sciences		3
Concentrations		
Choose from the following:		30-31
General		
Mechtronics		
Minimum Total Credit Hours:		63-64

General Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
EERT 21010	ENGINEERING AND PROFESSIONAL ETHICS	3
or ENGR 31010	ENGINEERING AND PROFESSIONAL ETHICS	
EERT 22014	MICROPROCESSORS AND ROBOTICS	3
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
MERT 12004	MANUFACTURING PROCESSES	3
MERT 22003	COMPUTER-AIDED TOOL DESIGN	3
MERT 22005	STATICS	3
MERT 22007	STRENGTH OF MATERIALS	3
MERT 22012	FLUID POWER	3
Additional Requirements (courses do not count in major GPA)		
Physics Elective A, choose from the following:		3-5
PHY 12201	TECHNICAL PHYSICS I (KBS) (KLAB)	
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	
& PHY 13021	and GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	
Physics Elective B, choose from the following:		3-5
PHY 12202	TECHNICAL PHYSICS II (KBS) (KLAB)	
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	
& PHY 13022	and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
PHY 13012	COLLEGE PHYSICS II (KBS)	
& PHY 13022	and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	

Minimum Total Credit Hours: 31

Mechtronics Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
BMRT 11000	INTRODUCTION TO BUSINESS	3
EERT 12000	ELECTRIC CIRCUITS I	4
EERT 12001	ELECTRIC CIRCUITS II	3
ENGR 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
MERT 12004	MANUFACTURING PROCESSES	3
MERT 22012	FLUID POWER	3
Additional Requirements (courses do not count in major GPA)		
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	2-4
or PHY 13012	COLLEGE PHYSICS II (KBS)	
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1

Minimum Total Credit Hours: 30

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

Roadmaps

- General Concentration
- Mechtronics Concentration

General Concentration

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Semester One		Credits
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
! MERT 12000	ENGINEERING DRAWING	3
! MERT 12004	MANUFACTURING PROCESSES	3
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		16
Semester Two		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
! MERT 12001	COMPUTER-AIDED DESIGN	3
! MERT 12005	PROPERTIES OF MATERIALS	3
MERT 22012	FLUID POWER	3
Credit Hours		15
Semester Three		
! EERT 22014	MICROPROCESSORS AND ROBOTICS	3
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
! MERT 22003	COMPUTER-AIDED TOOL DESIGN	3
! MERT 22005	STATICS	3
Physics Elective A		3-5
Credit Hours		15
Semester Four		
EERT 21010 or ENGR 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
ENGT 22099	ENGINEERING TECHNOLOGY PROJECT	2
! MERT 22007	STRENGTH OF MATERIALS	3
Physics Elective B		4-5
Kent Core Requirement		3
Credit Hours		18
Minimum Total Credit Hours:		64

Mechtronics Concentration

This roadmap is a recommended semester-by-semester plan of study for this major. However, courses designated as critical (!) must be completed in the semester listed to ensure a timely graduation.

Semester One		Credits
BMRT 11000	INTRODUCTION TO BUSINESS	3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
! MERT 12000	ENGINEERING DRAWING	3
! MERT 12004	MANUFACTURING PROCESSES	3
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Credit Hours		16
Semester Two		
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
! MERT 12001	COMPUTER-AIDED DESIGN	3
! MERT 12005	PROPERTIES OF MATERIALS	3
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
Kent Core Requirement		3
Credit Hours		17
Semester Three		
! EERT 12000	ELECTRIC CIRCUITS I	4
ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
ENGT 22099	ENGINEERING TECHNOLOGY PROJECT	2
PHY 13002 or PHY 13012	GENERAL COLLEGE PHYSICS II (KBS) or COLLEGE PHYSICS II (KBS)	2-4
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
Kent Core Requirement		3
Credit Hours		15
Semester Four		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
! EERT 12001	ELECTRIC CIRCUITS II	3
ENGR 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
MERT 22012	FLUID POWER	3
Kent Core Requirement		3
Credit Hours		15
Minimum Total Credit Hours:		63