

MECHANICAL ENGINEERING TECHNOLOGY - A.A.S.

College of Applied and Technical Studies

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www.kent.edu/cats

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.

Fully Offered At:

- Tuscarawas Campus

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 Regional Academic Center in Twinsburg, 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 the discipline to narrowly defined engineering technology activities

2. Apply knowledge of mathematics, science, engineering and technology to engineering technology problems that require limited application of principles but extensive practical knowledge
3. Conduct standard tests and measurements
4. Conduct, analyze and interpret experiments
5. Function effectively as a member of a technical team
6. Identify, analyze and solve narrowly defined engineering technology problems
7. Apply written, oral and graphical communication in both technical and non-technical environments
8. Identify and use appropriate technical literature
9. Understand the need for and an ability to engage in self directed continuing professional development
10. Understand and commit to address professional and ethical responsibilities, including a respect for diversity
11. Demonstrate a commitment to quality, timeliness and continuous improvement

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)		
MERT 12000	ENGINEERING DRAWING	3
MERT 12001	COMPUTER-AIDED DESIGN	3
MERT 12005	PROPERTIES OF MATERIALS	3
MERT 22009	ENGINEERING TECHNOLOGY PROJECT	2
Additional Requirements (courses do not count in major GPA)		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3

ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING BUSINESS COMMUNICATIONS	3
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 or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS ENGINEERING AND PROFESSIONAL ETHICS	3
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 & PHY 13021	GENERAL COLLEGE PHYSICS I (KBS) 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 & PHY 13022	GENERAL COLLEGE PHYSICS II (KBS) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	
PHY 13012 & PHY 13022	COLLEGE PHYSICS II (KBS) 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
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
MERT 12004	MANUFACTURING PROCESSES	3
MERT 22012	FLUID POWER	3
TECH 33031	PROGRAMMABLE LOGIC CONTROLLERS	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 or PHY 13012	GENERAL COLLEGE PHYSICS II (KBS) COLLEGE PHYSICS II (KBS)	2-4
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		
MATH 11012	INTUITIVE CALCULUS (KMCR)	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		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
!	EERT 22014 MICROPROCESSORS AND ROBOTICS	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 TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
!	MERT 22007 STRENGTH OF MATERIALS	3
!	MERT 22009 ENGINEERING TECHNOLOGY PROJECT	2
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
! MERT 22009	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
MERT 22012	FLUID POWER	3
! TECH 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
Kent Core Requirement		3
Credit Hours		15
Minimum Total Credit Hours:		63