

MECHANICAL ENGINEERING TECHNOLOGY - B.S.

College of Aeronautics and Engineering
www.kent.edu/cae

About This Program

Take your engineering career to the next level with Kent State's Bachelor of Science in Mechanical Engineering Technology program. With a focus on both theory and practice, this program prepares you for a wide range of mechanical engineering technology roles in industries such as aerospace, automotive, manufacturing and more. You will have access to state-of-the-art facilities and experienced faculty who are dedicated to helping you succeed. Read more...

Contact Information

- cae@kent.edu | 330-672-2892
- Speak with an Advisor
- Chat with an Admissions Counselor

Program Delivery

- **Delivery:**
 - In person
- **Location:**
 - Kent Campus

Examples of Possible Careers and Salaries*

Mechanical engineering technologists and technicians

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

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

Industrial engineering technologists and technicians

- 1.5% slower than the average
- 68,500 number of jobs
- \$57,320 potential earnings

Accreditation

The B.S. degree in Mechanical Engineering Technology is accredited by the Association of Technology, Management and Applied Engineering (ATMAE).

* Source of occupation titles and labor data comes 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.

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.

First-Year Students on the Kent Campus: First-year admission policy on the Kent Campus is selective. Admission decisions are based upon cumulative grade point average, strength of high school college preparatory curriculum and grade trends. Students not admissible to the Kent Campus may be administratively referred to one of the seven regional campuses to begin their college coursework. For more information, visit the admissions website for first-year students.

First-Year Students on the Regional Campuses: First-year admission to Kent State's campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Twinsburg Academic Center, is open to anyone with a high school diploma or its equivalent. For more information on admissions, contact the Regional Campuses admissions offices.

International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions) by earning a minimum 525 TOEFL score (71 on the Internet-based version), minimum 75 MELAB score, minimum 6.0 IELTS score or minimum 48 PTE Academic score, or by completing the ELS level 112 Intensive Program. For more information, visit the admissions website for international students.

Transfer Students: Students who have attended any other educational institution after graduating from high school must apply as undergraduate transfer students. For more information, visit the admissions website for transfer students.

Former Students: Former Kent State students or graduates who have not attended another college or university since Kent State may complete the reenrollment or reinstatement form on the University Registrar's website.

Admission policies for undergraduate students may be found in the University Catalog's Academic Policies.

Some programs may require that students meet certain requirements before progressing through the program. For programs with progression requirements, the information is shown on the program's Coursework tab.

Effective for the fall 2025 admission term:

Admission to the Mechanical Engineering Technology major is selective.

New Students: Admission into this major requires a minimum 2.700 unweighted high school GPA. Students who do not meet this requirement will be admitted to the Applied Engineering and Technology Management

concentration of the Applied Engineering major. Students may change their major to Mechanical Engineering Technology after satisfying the below requirements for current students.

Note: Applicants should understand that this is a math-intensive program. Students admitted to the program are expected to demonstrate prerequisite knowledge on a math placement exam (the ALEKS exam) prior to starting their first semester. Students who do not obtain the minimum score required to place into the required math courses are at risk of delaying graduation.

Current Students: Students may change their major to Mechanical Engineering Technology if they meet the following criteria:

- Minimum 2.500 overall Kent State GPA
- Minimum C grade in both ENGR 11001 and ENGR 11002
- Minimum C grade in either MATH 11022 or MATH 12011

Transfer Students: Transfer students must have completed minimum 12 credit hours of college-level coursework with a minimum 2.500 overall GPA for admission to the Mechanical Engineering Technology major. Students with less than 12 credit hours completed will be evaluated based on their high school transcript using the criteria in the above "new student" section.

International Students: All international students must provide proof of English language proficiency (unless they meet specific exceptions to waive) by earning a minimum 71 TOEFL iBT score, minimum 6.0 IELTS score, minimum 47 PTE score or minimum 100 DET score, or by completing the ELS level 112 Intensive English Program. For more information on international admission visit the admissions website for international students.

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
ENGR 11001	INTRODUCTION TO ENGINEERING	2
ENGR 11002	INTRODUCTION TO ENGINEERING LABORATORY	1
ENGR 13586 & ENGR 13587 or MERT 12001	COMPUTER AIDED DESIGN I and COMPUTER AIDED DESIGN I LABORATORY	3
ENGR 20000	PROFESSIONAL DEVELOPMENT IN ENGINEERING	1
ENGR 20002	MATERIALS AND PROCESSES	3
ENGR 23585	COMPUTER AIDED DESIGN II	3
ENGR 30001	APPLIED THERMODYNAMICS	3
ENGR 31000	CULTURAL DYNAMICS TECHNOLOGY (DIVD) (WIC) ¹	3
ENGR 31016	MANUFACTURING TECHNOLOGY	3
ENGR 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
ENGR 33033	HYDRAULICS/PNEUMATICS	3
ENGR 33111 or MERT 22005 & MERT 22007	STATICS AND STRENGTH OF MATERIALS	3-6
ENGR 33334	INDUSTRIAL ROBOTICS	1
ENGR 33335	INDUSTRIAL ROBOTICS LABORATORY	1
ENGR 33364	METALLURGY AND MATERIALS SCIENCE	3
ENGR 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3

ENGR 43550	COMPUTER-AIDED MANUFACTURING	3
ENGR 43580	COMPUTER-AIDED MACHINE DESIGN	3
ENGR 43899	APPLIED ENGINEERING CAPSTONE (ELR)	3
ENGR 47200	SYSTEMS ENGINEERING	3
Engineering (ENGR) Electives		6
Electrical Circuits Electives, choose from the following:		4-7
EERT 12000 & EERT 12001	ELECTRIC CIRCUITS I and ELECTRIC CIRCUITS II	
ENGR 21020 & ENGR 21022	SURVEY OF ELECTRICITY AND ELECTRONICS and SURVEY OF ELECTRICITY AND ELECTRONICS LABORATORY	
Programming Elective, choose from the following:		3-4
CS 13001	COMPUTER SCIENCE I: PROGRAMMING AND PROBLEM SOLVING	
CS 13011 & CS 13012	COMPUTER SCIENCE IA: PROCEDURAL PROGRAMMING and COMPUTER SCIENCE IB: OBJECT ORIENTED PROGRAMMING	
ENGR 26220 & ENGR 26222	PROGRAMMING FOR ENGINEERS and PROGRAMMING FOR ENGINEERS LABORATORY	
Additional Requirements (courses do not count in major GPA)		
ACCT 23020	INTRODUCTION TO FINANCIAL ACCOUNTING	3
CHEM 10050	FUNDAMENTALS OF CHEMISTRY (KBS)	3
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
ENG 20002	INTRODUCTION TO TECHNICAL WRITING	3
PHY 13001 & PHY 13021 or PHY 23101	GENERAL COLLEGE PHYSICS I (KBS) and GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB) ²	5
PHY 13002 & PHY 13022 or PHY 23102	GENERAL COLLEGE PHYSICS II (KBS) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB) ²	5
UC 10001	FLASHES 101	1
Mathematics Electives, choose from the following:		6-8
MATH 11022 & MATH 12002	TRIGONOMETRY (KMCR) and ANALYTIC GEOMETRY AND CALCULUS I (KMCR)	
MATH 12011 & MATH 12012	CALCULUS WITH PRECALCULUS I (KMCR) and CALCULUS WITH PRECALCULUS II (KMCR)	
Kent Core Composition		6
Kent Core Humanities and Fine Arts (minimum one course from each)		9
Kent Core Social Sciences (must be from two disciplines) (cannot be ECON)		3
General Electives (total credit hours depends on earning 120 credit hours, including 39 upper-division credit hours)		6
Minimum Total Credit Hours:		120

¹ A minimum C grade must be earned to fulfill the writing-intensive requirement.

² Students who desire to change their major to Aerospace Engineering or Mechatronics Engineering should take PHY 23101 and PHY 23102. Failing to do so may result in having to retake physics to complete their degree.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.250	2.000

Roadmap

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
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
ENGR 13586 & ENGR 13587 or MERT 12001	COMPUTER AIDED DESIGN I and COMPUTER AIDED DESIGN I LABORATORY or COMPUTER-AIDED DESIGN	3
UC 10001	FLASHES 101	1
Mathematics Elective		3
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		16
Semester Two		Credits
ENGR 11001	INTRODUCTION TO ENGINEERING	2
ENGR 11002	INTRODUCTION TO ENGINEERING LABORATORY	1
ENGR 23585	COMPUTER AIDED DESIGN II	3
PHY 13001 & PHY 13021 or PHY 23101	GENERAL COLLEGE PHYSICS I (KBS) and GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB) or GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)	5
Mathematics Elective		3-5
Credit Hours		14
Semester Three		Credits
ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
ENGR 20000	PROFESSIONAL DEVELOPMENT IN ENGINEERING	1
ENGR 20002	MATERIALS AND PROCESSES	3
PHY 13002 & PHY 13022 or PHY 23102	GENERAL COLLEGE PHYSICS II (KBS) and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB) or GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)	5
Kent Core Requirement		3
Credit Hours		15
Semester Four		Credits
ACCT 23020	INTRODUCTION TO FINANCIAL ACCOUNTING	3
CHEM 10050	FUNDAMENTALS OF CHEMISTRY (KBS)	3
ENG 20002	INTRODUCTION TO TECHNICAL WRITING	3
Electrical Circuits Electives		4-7
Kent Core Requirement		3
Credit Hours		16
Semester Five		Credits
ENGR 30001	APPLIED THERMODYNAMICS	3
ENGR 33031	PROGRAMMABLE LOGIC CONTROLLERS	3
ENGR 33111	STATICS AND STRENGTH OF MATERIALS or STATICS <i>and</i> STRENGTH OF MATERIALS	3-6
MERT 22005 <i>and</i> MERT 22007		

ENGR 47200	SYSTEMS ENGINEERING	3
Programming Elective		3-4
Credit Hours		15
Semester Six		Credits
ENGR 31000	CULTURAL DYNAMICS TECHNOLOGY (DIVD) (WIC)	3
ENGR 33033	HYDRAULICS/PNEUMATICS	3
ENGR 33364	METALLURGY AND MATERIALS SCIENCE	3
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		15
Semester Seven		Credits
ENGR 31016	MANUFACTURING TECHNOLOGY	3
ENGR 43550	COMPUTER-AIDED MANUFACTURING	3
ENGR 43580	COMPUTER-AIDED MACHINE DESIGN	3
Engineering (ENGR) Elective		3
General Elective		3
Credit Hours		15
Semester Eight		Credits
ENGR 33334	INDUSTRIAL ROBOTICS	1
ENGR 33335	INDUSTRIAL ROBOTICS LABORATORY	1
ENGR 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
ENGR 43899	APPLIED ENGINEERING CAPSTONE (ELR)	3
Engineering (ENGR) Elective		3
General Elective		3
Credit Hours		14
Minimum Total Credit Hours:		120

University Requirements

All students in a bachelor's 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.

Flashes 101 (UC 10001)	1 credit hour
Course is not required for students with 30+ transfer credits (excluding College Credit Plus) or age 21+ at time of admission.	
Diversity Domestic/Global (DIVD/DIVG)	2 courses
Students must successfully complete one domestic and one global course, of which one must be from the Kent Core.	
Experiential Learning Requirement (ELR)	varies
Students must successfully complete one course or approved experience.	
Kent Core (see table below)	36-37 credit hours
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 credit hours
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate.	
Total Credit Hour Requirement	120 credit hours

Kent Core Requirements

Kent Core Composition (KCMP)	6
Kent Core Mathematics and Critical Reasoning (KMCR)	3
Kent Core Humanities and Fine Arts (KHUM/KFA) (min one course each)	9
Kent Core Social Sciences (KSS) (must be from two disciplines)	6
Kent Core Basic Sciences (KBS/KLAB) (must include one laboratory)	6-7
Kent Core Additional (KADL)	6
Total Credit Hours:	36-37

degree programs. See the Combined Bachelor's/Master's Degree Program policy in the University Catalog for more information.

Program Learning Outcomes

Graduates of this program will be able to:

1. Apply knowledge, techniques, skills and modern tools of mathematics, science, engineering and technology to solve broadly defined engineering problems appropriate to the discipline.
2. Design systems, components or processes meeting specified needs for broadly defined engineering problems appropriate to the discipline.
3. Apply written, oral and graphical communication in broadly defined technical and non-technical environments, and an ability to identify and use appropriate technical literature.
4. Conduct standard tests, measurements and experiments and analyze and interpret the results to improve processes.
5. Function effectively as a member as well as a leader on technical teams.

The educational objectives of the program are the following:

1. Drive positive societal change while working in the areas of mechanical, robotic systems, hydraulics, pneumatics and automation, including other engineering technology fields in a manner that promotes excellence, integrity and success.
2. Practice forward-thinking through continued education by way of professional development, graduate education and other continued self-motivated learning.
3. Successfully navigate the ever-changing trajectory of the world, practicing compassion as you strive to meet your personal and professional goals.

Full Description

The Bachelor of Science degree in Mechanical Engineering Technology prepares graduates with knowledge across engineering technology disciplines for professional careers in mechanical, robotic systems, hydraulics, pneumatics, automation and other related fields that provide solutions to broadly defined challenges. The program teaches design, operation, installation, maintenance and analysis of machinery. This is an engineering technology degree that focuses on hands-on applications and not a traditional mechanical engineering degree. The program prepares students to become technical professionals in current and emerging fields using mechanical and computer-aided engineering. Students learn to develop innovative solutions to problems encountered in manufacturing.

Applicants to this program should understand that this is a math-intensive program.

Students may apply early to the Master of Engineering Technology degree and double count 9 credit hours of graduate courses toward both