MECHATRONICS ENGINEERING TECHNOLOGY - B.S.

About This Program
Kent State’s Bachelor of Science degree in Mechatronics Engineering Technology is perfect for the person who enjoys hands-on approaches to problem solving that require knowledge of the integration between mechanical, electrical and computer systems. It prepares you for a career in designing, building, troubleshooting and operating advanced mechatronics systems. With hands-on experience, industry-standard tools and experienced faculty, you’ll gain the practical skills and knowledge needed to succeed in industry. Read more...

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

Examples of Possible Careers and Salaries*

Electro-mechanical and mechatronics technologists and technicians
- 3.0% about as fast as the average
- 14,600 number of jobs
- $59,800 potential earnings

Electrical and electronic engineering technologists and technicians
- 1.5% slower than the average
- 125,800 number of jobs
- $67,550 potential earnings

Mechanical engineering technologists and technicians
- 3.1% about as fast as the average
- 43,500 number of jobs
- $58,230 potential earnings

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. 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.

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 Coursework tab.

Program Requirements
Major Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 11000</td>
<td>INTRODUCTION TO ENGINEERING</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 13585</td>
<td>COMPUTER AIDED ENGINEERING GRAPHICS</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 15300</td>
<td>INTRODUCTION TO ENGINEERING ANALYSIS USING MATLAB®</td>
<td>2</td>
</tr>
</tbody>
</table>
ENGR 15301  INTRODUCTION TO ENGINEERING ANALYSIS USING MATLAB® LAB  1
ENGR 20000  PROFESSIONAL DEVELOPMENT IN ENGINEERING  1
ENGR 20002  MATERIALS AND PROCESSES  3
ENGR 23585  ADVANCED COMPUTER AIDED DESIGN  3
ENGR 27210  INTRODUCTION TO SUSTAINABILITY  3
ENGR 31000  CULTURAL DYNAMICS TECHNOLOGY (DIVD) (WIC)  3
ENGR 33031  PROGRAMMABLE LOGIC CONTROLLERS  3
ENGR 33032  PROGRAMMABLE LOGIC CONTROLLERS II  3
ENGR 33033  HYDRAULICS/PNEUMATICS  3
ENGR 33041  CONTROL SYSTEMS  3
ENGR 33111  STATICS AND STRENGTH OF MATERIALS  3-6
or MERT 22005
& MERT 22007
ENGR 33222  DIGITAL DESIGN FOR COMPUTER ENGINEERING  3
ENGR 33333  INDUSTRIAL ROBOTICS  3
ENGR 33700  QUALITY TECHNIQUES  3
ENGR 35550  LAW AND ETHICS FOR ENGINEERS  3
ENGR 43030  MECHATRONS  3
ENGR 43080  INDUSTRIAL AND ENVIRONMENTAL SAFETY  3
ENGR 43099  MECHATRONS CAPSTONE (ELR) (WIC)  3
ENGR 43580  COMPUTER-AIDED MACHINE DESIGN  3
ENGR 47200  SYSTEMS ENGINEERING  3

Electricity and Electronics Electives, choose from the following: 4-7
EERT 12000  ELECTRIC CIRCUITS I & EERT 12001
and ELECTRIC CIRCUITS II
ENGR 21020  SURVEY OF ELECTRICITY AND ELECTRONICS & ENGR 21022
and SURVEY OF ELECTRICITY AND ELECTRONICS LABORATORY

Programming Elective(s), 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  PROGRAMMING FOR ENGINEERS & ENGR 26222
and PROGRAMMING FOR ENGINEERS LABORATORY

Technical Elective, choose from the following: 3
Any Aeronautics (AERN) course
Any College of Aeronautics and Engineering (CAE) course
Any Design Innovation (Di) course
Any Engineering (ENGR) course

Additional Requirements (courses do not count in major GPA)
COMM 15000  INTRODUCTION TO HUMAN COMMUNICATION (KADL)  3
ECON 22060  PRINCIPLES OF MICROECONOMICS (KSS)  3
PHY 13001
& PHY 13021  GENERAL COLLEGE PHYSICS I (KBS)
and GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)  2
or PHY 23101  GENERAL UNIVERSITY PHYSICS I (KBS) (KLAB)  5
PHY 13002
& PHY 13022  GENERAL COLLEGE PHYSICS II (KBS)
and GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)  2
or PHY 23102  GENERAL UNIVERSITY PHYSICS II (KBS) (KLAB)  5
UC 10001  FLASHERS 101  1

Mathematics Electives, choose from the following: 3 6-8
MATH 11022
& MATH 12002  TRIGNOMETRY (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 course)  3
General Electives (total credit hours depends on earning 120 credits hour, including 39 upper-division credit hours)  5

Minimum Total Credit Hours: 120

1 A minimum C grade must be earned to fulfill the writing-intensive requirement.
2 Students who wish to change their major to Mechatronics Engineering must take PHY 23101 and PHY 23102. Failing to do so will result in additional coursework.
3 Applicants to this program 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 fail to obtain the minimum score required to place into MATH 12002 are at risk of delaying graduation.

Graduation Requirements
Minimum Major GPA 2.250
Minimum Overall GPA 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.

<table>
<thead>
<tr>
<th>Semester One</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMM 15000</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 20000</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 27210</td>
<td>1</td>
</tr>
<tr>
<td>PHY 13001</td>
<td>5</td>
</tr>
<tr>
<td>or PHY 23101</td>
<td>5</td>
</tr>
<tr>
<td>PHY 13002</td>
<td>5</td>
</tr>
<tr>
<td>or PHY 23102</td>
<td>5</td>
</tr>
<tr>
<td>UC 10001</td>
<td>1</td>
</tr>
<tr>
<td>Mathematics Elective</td>
<td>3-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester Two</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ENGR 11000</td>
<td>3</td>
</tr>
<tr>
<td>ENGR 15300</td>
<td>2</td>
</tr>
<tr>
<td>ENGR 15301</td>
<td>1</td>
</tr>
<tr>
<td>! PHY 13001</td>
<td>5</td>
</tr>
<tr>
<td>or PHY 23101</td>
<td>5</td>
</tr>
<tr>
<td>Mathematics Elective</td>
<td>3-5</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester Three</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ECON 22060</td>
<td>3</td>
</tr>
<tr>
<td>PRINCIPLES OF MICROECONOMICS (KSS)</td>
<td>3</td>
</tr>
</tbody>
</table>
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.
generations to reduce labor costs, increase precision and accuracy and provide quality and safety for workers.

Graduates from the mechatronics engineering technology program manage and support the design, operation and analysis of mechanical and electrical devices connected with automated systems, robots and computer-integrated manufacturing. They can work in any company that develops, designs or manufactures and markets these devices. Opportunities exist in manufacturing sales as well as research.

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

Information on the program’s education objectives and student enrollment and graduation data can be found on the college website.

Students may apply early to the Master of Engineering Technology degree (Mechanical Engineering Technology concentration) and double count 9 credit hours of graduate courses toward both degree programs. See the Combined Bachelor’s/Master’s Degree Program policy in the University Catalog for more information.