ENGINEERING TECHNOLOGY - B.S.

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

Description

The Bachelor of Science degree in Engineering Technology focuses primarily on the applied aspects of science and engineering and prepares graduates for practice in that portion of the technological spectrum closes to product improvement, manufacturing, construction and engineering operational functions.

The Engineering Technology major comprises the following concentrations:

- The **2+2 Integrated Engineering Technology** concentration permits graduates from a variety of associate degree backgrounds to formulate a program of advanced study in upper-division technical courses, chosen with a faculty advisor, to gain additional technical depth or breadth.
- The **Computer Design, Animation and Game Design** concentration gives students the skills and academic knowledge necessary to enter the field of computer animation and the fast-growing field of game design. Drawings and illustrations are brought to life on digital video or film through the effective use of the latest software for capturing and animating hand-drawn or digitally created imagery. In addition, students experience creative possibilities as they explore artistic options and processes through experimental animation and modeling.
- The **Electrical/Electronics** concentration allows seamless articulation with technical associate degrees for students who wish to advance their careers in the electrical/electronic engineering field. Electrical engineers and technologists design, develop, test and supervise the manufacturing of electrical equipment, such as electric motors, radar and navigation systems, communications systems, and power generation equipment. Electronics engineers design and develop electronic equipment, such as broadcast and communications systems-from portable music players to global positioning systems (GPS).
- The **Green and Alternative Energy** concentration refers to energy sources that have no undesired consequences, for example fossil fuels or nuclear energy. Alternative energy sources are renewable and are thought to be "free" energy sources. They all have lower carbon emissions, compared to conventional energy sources. These include biomass energy, wind energy, solar energy, geothermal energy, and hydroelectric energy sources. Combined with the use of recycling, the use of clean alternative energies such as the home use of solar power systems will help ensure man's survival into the 21st century and beyond. By 2050, one-third of the world's energy will need to come from solar, wind, and other renewable resources, according to British Petroleum and Royal Dutch Shell, two of the world's largest oil companies.
- The **Mechanical/Systems** concentration allows seamless articulation with technical associate degrees for students who wish to advance their careers in the mechanical or manufacturing field. Mechanical engineering technology is one of the broadest engineering disciplines. Mechanical engineers and technologists design, develop, build and test mechanical and thermal devices, including tools, engines and machines. Graduates of this program can expect to work mostly in engineering services, research and development, manufacturing industries, and the federal government.

Fully Offered at:

- Kent Campus (Computer Design, Animation and Game Design concentration only)
- Tuscarawas Campus

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.

Freshman Students on the Kent Campus: The freshman admission policy on the Kent Campus is selective. Admission decisions are based upon the following: cumulative grade point average, ACT and/or SAT scores, strength of high school college preparatory curriculum and grade trends. The Admissions Office at the Kent Campus may defer the admission of students who do not meet admissions criteria but who demonstrate areas of promise for successful college study. Deferred applicants may begin their college coursework at one of seven regional campuses of Kent State University. For more information on admissions, including additional requirements for some academic programs, visit the admissions website for new freshmen.

Freshman Students on the Regional Campuses: Kent State campuses at Ashtabula, East Liverpool, Geauga, Salem, Stark, Trumbull and Tuscarawas, as well as the Regional Academic Center in Twinsburg, have open enrollment admission for students who hold a high school diploma, GED or equivalent.

English Language Proficiency Requirements for 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 score, or by completing the ESL level 112 Intensive Program. For more information on international admission, visit the Office of Global Education's admission website.

Transfer, Transitioning and Former Students: For more information about admission criteria for transfer, transitioning and former students, please visit the admissions website.

Program Learning Outcomes

Graduates of this program will be able to:

1. Apply knowledge of mathematics, science and engineering to a various areas of the engineering technology fields.
2. Use modern engineering tools and techniques to design and test systems, components, or processes in response to user requirements particularly in the engineering technology field.
3. Identify, analyze, and solve broadly-defined engineering technology problems.

4. Function effectively as a member or leader on a multi-functional technical team.
5. Apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
6. Understand professional engineering and ethical responsibilities.
7. Understand contemporary issues and the impact of engineering technology solutions in a global/social context and a respect for diversity.
8. Commit to quality, timeliness and continuous improvement.
9. Understand the need for and an ability to engage in self-directed continuing professional development and lifelong learning.

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.

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.	
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
Writing-Intensive Course (WIC)	1 course
Students must earn a minimum C grade in the course.	
Upper-Division Requirement	39 (or 42)
Students must successfully complete 39 upper-division (numbered 30000 to 49999) credit hours to graduate. Students in a B.A. and/or B.S. degree in the College of Arts and Sciences must complete 42 upper-division credit hours.	
Total Credit Hour Requirement	120
Some bachelor's degrees require students to complete more than 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**

Program Requirements

Major Requirements

Code	Title	Credit Hours
Major Requirements (courses count in major GPA)		
CS 10051	INTRODUCTION TO COMPUTER SCIENCE (KMCR)	3-4
or EERT 32003	TECHNICAL COMPUTING	
or IT 20001	C++ PROGRAMMING	
or IT 20011	JAVA PROGRAMMING	
EERT 21010	ENGINEERING AND PROFESSIONAL ETHICS	3
or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS	
ENG 20002	INTRODUCTION TO TECHNICAL WRITING	3
or OTEC 26638	BUSINESS COMMUNICATIONS	
TAS 47900	TECHNICAL AND APPLIED STUDIES CAPSTONE (ELR) (min C grade)	3
TECH 31000	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) [2]	2-3
or TECH 33092	COOPERATIVE EDUCATION - PROFESSIONAL DEVELOPMENT (ELR) (WIC)	
TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
Additional Requirements (courses do not count in major GPA)		
ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
OTEC 26636	PROJECT MANAGEMENT FOR ADMINISTRATIVE PROFESSIONALS	1
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Composition		6
Kent Core Humanities and Fine Arts		9
Kent Core Social Sciences		3
General Electives (total credit hours depends on earning 120 credit hours, including 39 upper-division credit hours)		3
Concentrations		
Choose from the following:		71
2+2 Integrated Engineering Technology		
Computer Design, Animation and Game Design		
Electrical/Electronics		
Green and Alternative Energy		
Mechanical/Systems		
Minimum Total Credit Hours:		120

1 It is recommended that students in the 2+2 Integrated Engineering Technology concentration, Electrical/Electronics concentration, Green and Alternative Energy concentration and in the Mechanical/Systems concentration take EERT 32003.

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

2+2 Integrated Engineering Technology Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
GAE 42003	LEAN MANUFACTURING, SIX SIGMA AND OPERATIONS TECHNOLOGY	3
TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
Concentration Electives, choose from the following:		15
Electrical/Electronic Engineering Technology (EERT) Upper-Division Electives (30000 or 40000 level)		
Green and Alternative Energy (GAE) Uppper-Division Electives (30000 or 40000 level)		
Mechanical Engineering Technology (MERT) Upper-Division Electives (30000 or 40000 level)		
Modeling, Animation and Game Creation (MAGC) Upper-Division Electives (30000 or 40000 level)		
Technology (TECH) Upper-Division Electives (30000 or 40000 level)		
Additional Requirements (courses do not count in major GPA)		
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
Kent Core Basic Sciences		6-7
Applied Electives, choose from the following: [1]		27
ACTT 11000	ACCOUNTING I: FINANCIAL	
BMRT 11000	INTRODUCTION TO BUSINESS	
BMRT 11009	INTRODUCTION TO MANAGEMENT TECHNOLOGY	
BMRT 21011	FUNDAMENTALS OF FINANCIAL MANAGEMENT	
BMRT 21050	FUNDAMENTALS OF MARKETING TECHNOLOGY	
IT 20011	JAVA PROGRAMMING	
IT 21010	WORKGROUP PRODUCTIVITY SOFTWARE	
IT 21092	COMPUTER PRACTICUM (ELR)	
IT 21095	SPECIAL TOPICS IN COMPUTER TECHNOLOGY	
OTEC 26638	BUSINESS COMMUNICATIONS	
PHY 12201	TECHNICAL PHYSICS I (KBS) (KLAB)	
PHY 12202	TECHNICAL PHYSICS II (KBS) (KLAB)	
Electrical/Electronic Engineering Technology (EERT) Courses		
Green and Alternate Energy (GAE) Courses		
Mechanical Engineering Technology (MERT) Courses		
Modeling, Animation and Game Creation (MAGC) Courses		
Physics (PHY) Courses approved by program director		
General Electives		14
Minimum Total Credit Hours:		71

[1] Applied electives should be chosen from an approved associate degree or a declared minor or individualized specialization selected in consultation with an advisor. Students who have earned an associate degree will have 34 credits of technical coursework articulate to the bachelor's degree program and will not have to take the electives for a minor or individualized specialization.

Computer Design, Animation and Game Design Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
CCI 46001	RESPONSIVE WEB DESIGN	3
or TECH 33010	COMPUTER HARDWARE FOR ANIMATION	
or TECH 34002	ADVANCED COMPUTER-AIDED DESIGN II	
EERT 22018	PC/NETWORK ENGINEERING AND TROUBLESHOOTING	1-3
or MAGC 33095	SPECIAL TOPICS IN MODELING, ANIMATION AND GAME CREATION	
or TECH 33016	PC/NETWORK ENGINEERING AND TROUBLESHOOTING	
or TECH 33095	SPECIAL TOPICS: APPLIED SCIENCE AND TECHNOLOGY	
MAGC 34000	CHARACTER ANIMATION	3
MAGC 34001	ANIMATION PROJECT	3
MAGC 34003	ANIMATION THEORY	3
MAGC 34005	ENVIRONMENTAL GAME DESIGN	3
MAGC 43000	INTERACTIVE GAME DESIGN	3
MAGC 43001	ANIMATION PRODUCTION AND VFX	3
MAGC 43002	GRAPHICS DESIGN TECHNOLOGY	3
Additional Requirements (courses do not count in major GPA)		
ARTS 14001	DRAWING II	3
Kent Core Art History (ARTH)		3
Kent Core Basic Sciences [1]		6-7
Applied Electives, choose from the following: [2]		34
ARTS 14000	DRAWING I	
MERT 12000	ENGINEERING DRAWING	
MERT 12001	COMPUTER-AIDED DESIGN	
TECH 33095	SPECIAL TOPICS: APPLIED SCIENCE AND TECHNOLOGY	
Modeling, Animation and Game Creation (MAGC) Courses		
Other courses approved by program director		
Minimum Total Credit Hours:		71

[1] Students in this concentration are recommended to take PHY 21040 and PHY 21041to fulfill the Kent Core Basic Sciences.

[2] Applied courses should be chosen from an approved associate degree or a declared minor or individualized specialization selected in consultation with an advisor. Students who have earned an associate degree will have 34 credits of technical coursework articulate to the bachelor's degree program and will not have to take the electives for a minor or individualized specialization.

Electrical/Electronics Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
TECH 31020	AUTOMATED MANUFACTURING	3
or TECH 43700	COMPUTER INTEGRATED MANUFACTURING	
TECH 33363	MATERIALS SCIENCE AND TECHNOLOGY	3
TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
Concentration Electives, choose from the following:		12
EERT 32005	INSTRUMENTATION	
GAE 42002	ENERGY MANAGEMENT SYSTEMS	
GAE 42003	LEAN MANUFACTURING, SIX SIGMA AND OPERATIONS TECHNOLOGY	
TECH 31032	POWER TECHNOLOGY	
TECH 33016	PC/NETWORK ENGINEERING AND TROUBLESHOOTING	
TECH 33031	PROGRAMMABLE LOGIC CONTROLLERS	
TECH 33223	ELECTRONIC COMMUNICATION	
TECH 33225	INDUSTRIAL CONTROL SYSTEMS	
TECH 33700	QUALITY TECHNIQUES	

TECH 43220	ELECTRICAL MACHINERY	
Additional Requirements (courses do not count in major GPA)		
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
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)	
Applied Electives, choose from the following: [1]		27
MERT 12000	ENGINEERING DRAWING	
TECH 33095	SPECIAL TOPICS: APPLIED SCIENCE AND TECHNOLOGY	
Electrical/Electronic and Related Technologies (EERT) courses		
Other courses approved by program director		
General Electives		12-13
Minimum Total Credit Hours:		71

[1] Applied courses should be chosen from an approved associate degree or a declared minor or individualized specialization selected in consultation with an advisor. Students who have earned an associate degree will have 34 credits of technical coursework articulate to the bachelor's degree program and will not have to take the electives for a minor or individualized specialization.

Green and Alternative Energy Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
GAE 32000	FUEL CELL TECHNOLOGY	3
GAE 42004	ADVANCED FUEL CELL TECHNOLOGY	3
TECH 33363	MATERIALS SCIENCE AND TECHNOLOGY	3
TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
Concentration Electives, choose from the following:		12
EERT 32005	INSTRUMENTATION	
GAE 42002	ENERGY MANAGEMENT SYSTEMS	
or TECH 42100	TRAINING TOPICS IN TECHNOLOGY	
GAE 42003	LEAN MANUFACTURING, SIX SIGMA AND OPERATIONS TECHNOLOGY	
MERT 42000	THERMODYNAMICS FOR ENGINEERING TECHNOLOGY	
TECH 31020	AUTOMATED MANUFACTURING	
TECH 31032	POWER TECHNOLOGY	
Additional Requirements (courses do not count in major GPA)		
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
Physics Elective A, choose from the following:		3-5
PHY 12201 & PHY 12202	TECHNICAL PHYSICS I (KBS) (KLAB) and TECHNICAL PHYSICS II (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)	
Applied Electives, choose from the following: [1]		27
Electrical/Electronic and Related Technologies (EERT) Courses		
Green and Alternate Energy (GAE) Courses		
Mechanical Engineering and Related Technologies (MERT) Courses		
Other courses approved by program director		
General Elective		10
Minimum Total Credit Hours:		71

[1] Applied courses should be chosen from an approved associate degree or a declared minor or individualized specialization selected in consultation with an advisor. Students who have earned an associate degree will have 34 credits of technical coursework articulate to the bachelor's degree program and will not have to take the electives for a minor or individualized specialization.

Mechanical/Systems Concentration Requirements

Code	Title	Credit Hours
Concentration Requirements (courses count in major GPA)		
MERT 32004	MACHINE DESIGN	3
or TECH 33870	FACILITY DESIGN AND MATERIAL HANDLING	
TECH 31020	AUTOMATED MANUFACTURING	3
or TECH 43700	COMPUTER INTEGRATED MANUFACTURING	
TECH 33363	MATERIALS SCIENCE AND TECHNOLOGY	3
TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
Mechanical/Systems Concentration Electives, choose from the following:		15
EERT 32005	INSTRUMENTATION	
GAE 32000	FUEL CELL TECHNOLOGY	
GAE 42002	ENERGY MANAGEMENT SYSTEMS	
GAE 42003	LEAN MANUFACTURING, SIX SIGMA AND OPERATIONS TECHNOLOGY	
MERT 34002	ADVANCED SOLID MODELING	
MERT 42000	THERMODYNAMICS FOR ENGINEERING TECHNOLOGY	
TECH 31032	POWER TECHNOLOGY	
TECH 32101	POLYMERS I	
TECH 33016	PC/NETWORK ENGINEERING AND TROUBLESHOOTING	
TECH 33031	PROGRAMMABLE LOGIC CONTROLLERS	
TECH 33225	INDUSTRIAL CONTROL SYSTEMS	
TECH 33700	QUALITY TECHNIQUES	
TECH 43220	ELECTRICAL MACHINERY	
TECH 43550	COMPUTER-AIDED MANUFACTURING	
Additional Requirements (courses do not count in major GPA)		
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
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)	
Applied Electives, choose from the following: [1]		27
EERT 22014	MICROPROCESSORS AND ROBOTICS	
Mechanical Engineering and Related Technologies (MERT) Courses		
General Electives		7
Minimum Total Credit Hours:		71

[1] Applied courses should be chosen from an approved associate degree or a declared minor or individualized specialization selected in consultation with an advisor. Students who have earned an associate degree will have 34 credits of technical coursework articulate to the bachelor's degree program and will not have to take the electives for a minor or individualized specialization.

Graduation Requirements

Minimum Major GPA	Minimum Overall GPA
2.000	2.000

- Students may declare more than one concentration in the Engineering Technology major, provided that there are minimum 18 credit hours of upper-division coursework in the subsequent concentration. These credit hours must be in one of the Engineering Technology disciplines of EERT, MERT, CDAG, GAE or TECH. Students must also complete all of the other concentration requirements specific to each concentration, in addition to differentiating their major elective courses across the two concentrations. Students who declare the 2+2 Integrated Engineering Technology concentration may not elect any other concentration. Likewise, students who elect any of the other Engineering Technology concentrations may not elect the 2+2 Integrated Engineering Technology concentration.
- Students electing a dual concentration must meet with an advisor to plan an individualized plan of study that meets these requirements before the dual concentration option will be approved for that student. Any changes made to the program of study also must be approved by an advisor, or the student may not be allowed to graduate with this option.

Roadmaps

- 2+2 Integrated Engineering Technology Concentration
- Computer Design, Animation, and Game Design Concentration
- Electrical/Electronics Concentration
- Green and Alternative Energy Concentration
- Mechanical/Systems Concentration

2+2 INTEGRATED ENGINEERING TECHNOLOGY 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**
	EERT 21010 or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
	UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Applied Electives		8
	Kent Core Requirement		3
		Credit Hours	15
	Semester Two		
	MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
	Applied Electives		7
	Kent Core Requirement		3
		Credit Hours	13
	Semester Three		
	MATH 11012	INTUITIVE CALCULUS (KMCR)	3
	Applied Electives		6
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	15
	Semester Four		
	ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
	MATH 11022	TRIGONOMETRY (KMCR)	3
	Applied Electives		6
	Kent Core Requirement		3
		Credit Hours	15
	Semester Five		
	CS 10051 or EERT 32003 or IT 20001 or IT 20011	INTRODUCTION TO COMPUTER SCIENCE (KMCR) or TECHNICAL COMPUTING or C++ PROGRAMMING or JAVA PROGRAMMING	3-4
	GAE 42003	LEAN MANUFACTURING, SIX SIGMA AND OPERATIONS TECHNOLOGY	3
	Concentration Electives		3
	Kent Core Requirement		3
	Kent Core Requirement		3
	General Electives		3
		Credit Hours	18
	Semester Six		
	OTEC 26636	PROJECT MANAGEMENT FOR ADMINISTRATIVE PROFESSIONALS	1
!	TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
	Concentration Electives		3
	Kent Core Requirement		3
	General Electives		7
		Credit Hours	17
	Semester Seven		
	ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
	TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
	Concentration Elective		3
	General Elective		3
		Credit Hours	12
	Semester Eight		
!	TAS 47900	TECHNICAL AND APPLIED STUDIES CAPSTONE (ELR)	3
!	TECH 31000 or TECH 33092	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) or COOPERATIVE EDUCATION - PROFESSIONAL DEVELOPMENT (ELR) (WIC)	2-3
	Concentration Electives		6
	General Elective		4
		Credit Hours	15
		Minimum Total Credit Hours:	120

Computer Design, Animation and Game Design 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**
	CS 10051 or EERT 32003 or IT 20001 or IT 20011	INTRODUCTION TO COMPUTER SCIENCE (KMCR) or TECHNICAL COMPUTING or C++ PROGRAMMING or JAVA PROGRAMMING	3-4
	MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	3
	UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Applied Electives		9
		Credit Hours	16
	Semester Two		
	ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
	Applied Electives		7
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	16
	Semester Three		
	EERT 21010 or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
	Applied Electives		6
	Kent Core Requirement		3
	Kent Core Requirement		3
		Credit Hours	15
	Semester Four		
	Kent Core Requirement		3
	Applied Electives		12
		Credit Hours	15
	Semester Five		
	CCI 46001 or TECH 33010 or TECH 34002	RESPONSIVE WEB DESIGN or COMPUTER HARDWARE FOR ANIMATION or ADVANCED COMPUTER-AIDED DESIGN II	3
	MAGC 34000	CHARACTER ANIMATION	3
	MAGC 34003	ANIMATION THEORY	3
	MATH 11022	TRIGONOMETRY (KMCR)	3
	Kent Core Requirement		3
		Credit Hours	15
	Semester Six		
	ARTS 14001	DRAWING II	3
	MAGC 34001	ANIMATION PROJECT	3
	MAGC 34005	ENVIRONMENTAL GAME DESIGN	3
	MAGC 43002	GRAPHICS DESIGN TECHNOLOGY	3
	Kent Core Requirement		3
		Credit Hours	15
	Semester Seven		
	ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
	MAGC 43000	INTERACTIVE GAME DESIGN	3
	MAGC 43001	ANIMATION PRODUCTION AND VFX	3
!	TECH 31000 or TECH 33092	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) or COOPERATIVE EDUCATION - PROFESSIONAL DEVELOPMENT (ELR) (WIC)	2-3
	Kent Core Requirement		3
		Credit Hours	14
	Semester Eight		
	EERT 22018 or MAGC 33095 or TECH 33016 or TECH 33095	PC/NETWORK ENGINEERING AND TROUBLESHOOTING or SPECIAL TOPICS IN MODELING, ANIMATION AND GAME CREATION or PC/NETWORK ENGINEERING AND TROUBLESHOOTING or SPECIAL TOPICS: APPLIED SCIENCE AND TECHNOLOGY	1-3
	OTEC 26636	PROJECT MANAGEMENT FOR ADMINISTRATIVE PROFESSIONALS	1
!	TAS 47900	TECHNICAL AND APPLIED STUDIES CAPSTONE (ELR)	3
!	TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
	Kent Core Art History (ARTH) Elective		3
	General Elective		3
		Credit Hours	14
		Minimum Total Credit Hours:	120

Electrical/Electronics Engineering Technology 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
	UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Applied Electives		7
	Kent Core Requirement		3
		Credit Hours	14
	Semester Two		
	ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
	MATH 11012	INTUITIVE CALCULUS (KMCR)	3
	MATH 11022	TRIGONOMETRY (KMCR)	3
	Applied Electives		4
	Kent Core Requirement		3
		Credit Hours	16
	Semester Three		
	Physics Elective A		3-5
	Applied Electives		10
	Kent Core Requirement		3
		Credit Hours	16
	Semester Four		
	Physics Elective B		3-5
	Applied Electives		6
	Kent Core Requirement		3
		Credit Hours	13
	Semester Five		
	CS 10051 or EERT 32003 or IT 20001 or IT 20011	INTRODUCTION TO COMPUTER SCIENCE (KMCR) or TECHNICAL COMPUTING or C++ PROGRAMMING or JAVA PROGRAMMING	3-4
	ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
	OTEC 26636	PROJECT MANAGEMENT FOR ADMINISTRATIVE PROFESSIONALS	1
!	TECH 31020 or TECH 43700	AUTOMATED MANUFACTURING or COMPUTER INTEGRATED MANUFACTURING	3
	Concentration Elective		3
		Credit Hours	13
	Semester Six		
!	TECH 33363	MATERIALS SCIENCE AND TECHNOLOGY	3
!	TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
	Concentration Elective		3
	Kent Core Requirement		3
	General Elective		3
		Credit Hours	15
	Semester Seven		
	EERT 21010 or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
	Concentration Elective		3
	Kent Core Requirement		3
	General Elective		7
		Credit Hours	16
	Semester Eight		
!	TAS 47900	TECHNICAL AND APPLIED STUDIES CAPSTONE (ELR)	3
!	TECH 31000 or TECH 33092	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) or COOPERATIVE EDUCATION - PROFESSIONAL DEVELOPMENT (ELR) (WIC)	2-3
!	TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
	Concentration Elective		3
	General Elective		5-6
		Credit Hours	17
		Minimum Total Credit Hours:	120

Green and Alternative Energy 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
	UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Applied Electives		7
	Kent Core Requirement		3
		Credit Hours	14
	Semester Two		
	MATH 11012	INTUITIVE CALCULUS (KMCR)	3
	MATH 11022	TRIGONOMETRY (KMCR)	3
	Applied Electives		6
	Kent Core Requirement		3
		Credit Hours	15
	Semester Three		
	EERT 21010 or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
	Physics Elective A		3-5
	Applied Electives		6
	Kent Core Requirement		3
		Credit Hours	15
	Semester Four		
	ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
	Physics Elective B		3-5
	Applied Electives		8
		Credit Hours	15
	Semester Five		
	CS 10051 or EERT 32003 or IT 20001 or IT 20011	INTRODUCTION TO COMPUTER SCIENCE (KMCR) or TECHNICAL COMPUTING or C++ PROGRAMMING or JAVA PROGRAMMING	3-4
	ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
!	GAE 32000	FUEL CELL TECHNOLOGY	3
	OTEC 26636	PROJECT MANAGEMENT FOR ADMINISTRATIVE PROFESSIONALS	1
	Concentration Elective		3
		Credit Hours	13
	Semester Six		
!	TECH 33363	MATERIALS SCIENCE AND TECHNOLOGY	3
!	TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
	Concentration Elective		3
	Kent Core Requirement		3
	General Elective		6
		Credit Hours	18
	Semester Seven		
!	GAE 42004	ADVANCED FUEL CELL TECHNOLOGY	3
	Concentration Elective		3
	Kent Core Requirement		3
	General Elective		7-8
		Credit Hours	16
	Semester Eight		
!	TAS 47900	TECHNICAL AND APPLIED STUDIES CAPSTONE (ELR)	3
!	TECH 31000 or TECH 33092	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) or COOPERATIVE EDUCATION - PROFESSIONAL DEVELOPMENT (ELR) (WIC)	2-3
!	TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
	Concentration Elective		3
	Kent Core Elective		3
		Credit Hours	14
		Minimum Total Credit Hours:	120

Mechanical/Systems 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
	UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
	Applied Electives		7
	Kent Core Requirement		3
		Credit Hours	14
	Semester Two		
	MATH 11012	INTUITIVE CALCULUS (KMCR)	3
	MATH 11022	TRIGONOMETRY (KMCR)	3
	Applied Electives		6
	Kent Core Requirement		3
		Credit Hours	15
	Semester Three		
	ENG 20002 or OTEC 26638	INTRODUCTION TO TECHNICAL WRITING or BUSINESS COMMUNICATIONS	3
	Physics Elective A		3-5
	Applied Electives		9
		Credit Hours	15
	Semester Four		
	EERT 21010 or TECH 31010	ENGINEERING AND PROFESSIONAL ETHICS or ENGINEERING AND PROFESSIONAL ETHICS	3
	Physics Elective B		3-5
	Applied Electives		5
	Kent Core Requirement		3
		Credit Hours	15
	Semester Five		
	CS 10051 or EERT 32003 or IT 20001 or IT 20011	INTRODUCTION TO COMPUTER SCIENCE (KMCR) or TECHNICAL COMPUTING or C++ PROGRAMMING or JAVA PROGRAMMING	3-4
	ECON 22060	PRINCIPLES OF MICROECONOMICS (KSS)	3
	OTEC 26636	PROJECT MANAGEMENT FOR ADMINISTRATIVE PROFESSIONALS	1
!	TECH 31020 or TECH 43700	AUTOMATED MANUFACTURING or COMPUTER INTEGRATED MANUFACTURING	3
	Concentration Elective		3
		Credit Hours	13
	Semester Six		
!	TECH 33363	MATERIALS SCIENCE AND TECHNOLOGY	3
!	TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
	Concentration Electives		6
	Kent Core Requirment		3
		Credit Hours	15
	Semester Seven		
	MERT 32004 or TECH 33870	MACHINE DESIGN or FACILITY DESIGN AND MATERIAL HANDLING	3
	Concentration Electives		6
	Kent Core Requirement		3
	General Elective		4
		Credit Hours	16
	Semester Eight		
!	TAS 47900	TECHNICAL AND APPLIED STUDIES CAPSTONE (ELR)	3
!	TECH 31000 or TECH 33092	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) or COOPERATIVE EDUCATION - PROFESSIONAL DEVELOPMENT (ELR) (WIC)	2-3
	TECH 43080	INDUSTRIAL AND ENVIRONMENTAL SAFETY	3
	Kent Core Requirement		3
	General Elective		6
		Credit Hours	17
		Minimum Total Credit Hours:	120