

# COMPUTER ENGINEERING TECHNOLOGY - B.S.

**College of Aeronautics and Engineering**  
 Aeronautics and Technology Building  
 Kent Campus  
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## Description

The Bachelor of Science degree in Computer Engineering Technology provides students with the opportunity to study computer systems and software-hardware interface so that they are capable of analyzing the problems in the computer and networking industry and producing computer engineering, networking and software solutions. The major's curriculum includes materials necessary for students to be eligible for industry certifications (e.g., Cisco, Dell, Juniper Networks) for career advancement.

Computer engineering technologists focus on hardware or software issues. When companies need custom applications and network systems designed, they call the computer engineering technologist. In this age of heavy computer usage, with companies using computers for a large variety of functions, the computer engineering technologist is invaluable in keeping equipment running, updating software, maintaining connectivity and interfacing with users.

Computer engineering technologists typically work for large companies, installing, testing, operating and maintaining the computer network ins. They may also find employment with companies that sell computers, at computer repair stores or at independent emergency repair facilities. Other common work locations include computer and peripheral manufacturing facilities, computer distribution facilities, computer research facilities and educational institutions.

### Fully Offered At:

- Kent Campus

## Accreditation

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

## 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. A general understanding, and a depth of knowledge in core computer engineering concepts, principles and applications.
2. An understanding of recent, current, and upcoming trends and related applications in computer engineering.
3. An acknowledgement of necessary design steps involved in making complex computer systems; and a practical understanding of the skills necessary to analyze existing systems.
4. A practical knowledge of tools and techniques to design innovative solutions from requirements specifications.
5. An understanding of the ethical issues involved with the use of computer engineering related technologies; and a clear desire to strive for the best practices.

## 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 (KCOMP)	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
<b>Total Credit Hours:</b>	<b>36-37</b>

## Program Requirements

### Major Requirements

Code	Title	Credit Hours
<b>Major Requirements (courses count in major GPA)</b>		
TECH 21020	SURVEY OF ELECTRICITY AND ELECTRONICS	3
TECH 21022	SURVEY OF ELECTRICITY AND ELECTRONICS LABORATORY	1
TECH 23010	COMPUTER HARDWARE	3
TECH 26010	INTRODUCTION TO COMPUTER ENGINEERING TECHNOLOGY	3
TECH 26200	PROGRAMMING FOR ENGINEERS I	3
TECH 26301	NETWORKING HARDWARE I	4
TECH 26310 or TECH 33020 or TECH 43320	WEB DESIGN AND DEVELOPMENT COMPUTER HARDWARE II APPLIED EMBEDDED SYSTEMS II	3
TECH 31000	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC) <sup>1</sup>	3
TECH 33222	DIGITAL DESIGN FOR COMPUTER ENGINEERING	3
TECH 33223	ELECTRONIC COMMUNICATION	3
TECH 33320	APPLIED EMBEDDED SYSTEMS I	3
TECH 36200	PROGRAMMING FOR ENGINEERS II	3
TECH 36302	NETWORKING HARDWARE II	3
TECH 36337	INFORMATION TECHNOLOGY SECURITY	3
TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
TECH 43222	COMPUTER HARDWARE ENGINEERING AND ARCHITECTURE	3
TECH 46000	COMPUTER ENGINEERING TECHNOLOGY CAPSTONE (ELR)	3
TECH 46300	NETWORK SECURITY	3
TECH 46312	WIRELESS NETWORK AND TELECOMMUNICATION SYSTEMS	3
TECH 46316	SERVER ADMINISTRATION AND CONFIGURATION I	3
TECH 46350	NETWORK MANAGEMENT AND DESIGN TECHNOLOGY	3
Technology Upper-Division Electives (TECH 30000 or 40000 level)		6

Additional Requirements (courses do not count in major GPA)		
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
ENG 20002	INTRODUCTION TO TECHNICAL WRITING	3
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
MATH 11022	TRIGONOMETRY (KMCR)	3
MGMT 24056	BUSINESS ANALYTICS I	3
MGMT 24163	PRINCIPLES OF MANAGEMENT	3
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Composition		
Kent Core Humanities and Fine Arts (minimum one course from each)		
Kent Core Social Sciences (must be from two disciplines)		
General Electives (total credit hours depends on earning 120 credit hours, including 39 upper-division credit hours)		
Minimum Total Credit Hours:		120

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

## 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
MATH 11022	TRIGONOMETRY (KMCR)	3
TECH 26010	INTRODUCTION TO COMPUTER ENGINEERING TECHNOLOGY	3
UC 10097	DESTINATION KENT STATE: FIRST YEAR EXPERIENCE	1
Kent Core Requirement		3
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		16
Semester Two		Credits
COMM 15000	INTRODUCTION TO HUMAN COMMUNICATION (KADL)	3
MATH 11012	INTUITIVE CALCULUS (KMCR)	3
PHY 13001	GENERAL COLLEGE PHYSICS I (KBS)	4
PHY 13021	GENERAL COLLEGE PHYSICS LABORATORY I (KBS) (KLAB)	1
Kent Core Requirement		3
Kent Core Requirement		3
Credit Hours		17
Semester Three		Credits
ENG 20002	INTRODUCTION TO TECHNICAL WRITING	3

PHY 13002	GENERAL COLLEGE PHYSICS II (KBS)	4
PHY 13022	GENERAL COLLEGE PHYSICS LABORATORY II (KBS) (KLAB)	1
TECH 23010	COMPUTER HARDWARE	3
TECH 26200	PROGRAMMING FOR ENGINEERS I	3
	Credit Hours	14
<b>Semester Four</b>		
MGMT 24163	PRINCIPLES OF MANAGEMENT	3
TECH 21020	SURVEY OF ELECTRICITY AND ELECTRONICS	3
TECH 21022	SURVEY OF ELECTRICITY AND ELECTRONICS LABORATORY	1
TECH 36200	PROGRAMMING FOR ENGINEERS II	3
	Kent Core Requirement	3
	Kent Core Requirement	3
	Credit Hours	16
<b>Semester Five</b>		
TECH 26301	NETWORKING HARDWARE I	4
TECH 33222	DIGITAL DESIGN FOR COMPUTER ENGINEERING	3
TECH 33223	ELECTRONIC COMMUNICATION	3
TECH 36620	PROJECT MANAGEMENT IN ENGINEERING AND TECHNOLOGY	3
	Technology (TECH) Upper-Division Electives (30000 or 40000 level)	3
	Credit Hours	16
<b>Semester Six</b>		
MGMT 24056	BUSINESS ANALYTICS I	3
TECH 31000	CULTURAL DYNAMICS OF TECHNOLOGY (DIVD) (WIC)	3
TECH 33320	APPLIED EMBEDDED SYSTEMS I	3
TECH 36302	NETWORKING HARDWARE II	3
TECH 36337	INFORMATION TECHNOLOGY SECURITY	3
	Credit Hours	15
<b>Semester Seven</b>		
TECH 26310	WEB DESIGN AND DEVELOPMENT	3
or	or COMPUTER HARDWARE II	
TECH 33020	or APPLIED EMBEDDED SYSTEMS II	
or		
TECH 43320		
TECH 46300	NETWORK SECURITY	3
TECH 46316	SERVER ADMINISTRATION AND CONFIGURATION I	3
TECH 46350	NETWORK MANAGEMENT AND DESIGN TECHNOLOGY	3
	Technology Upper-Division Electives (TECH 30000 or 40000 level)	3
	Credit Hours	15
<b>Semester Eight</b>		
TECH 43222	COMPUTER HARDWARE ENGINEERING AND ARCHITECTURE	3
TECH 46000	COMPUTER ENGINEERING TECHNOLOGY CAPSTONE (ELR)	3
TECH 46312	WIRELESS NETWORK AND TELECOMMUNICATION SYSTEMS	3
	General Elective	2
	Credit Hours	11
	Minimum Total Credit Hours:	120