

COMPUTER TECHNOLOGY (CTEC)

Computing Essentials

CTEC 101 2 Credits/Units
2 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Introduction to basic skills and problem solving involved with computer hardware, operating systems, and application programs with a special emphasis on conventions and skills universal to a variety of computing settings and skills which promote portability between systems and applications. Provides an overview of key skills in a variety of operating system environments and digital interactive settings. Skills and topics include: essential interactions in major operating system environments, basic hardware components of a personal computer system, an overview of file formats and management with an emphasis on backup and portable document strategies, basic interactions in email and worldwide web including how to document and save web pages, and a survey of the purposes of various types of application programs. [GE]

IT Support

CTEC 104 3 Credits/Units
3 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Communication skills for working in a technical environment. Topics covered: professional ethics and behavior, health and safety issues, and developing a service attitude. [GE, HR]

Information Technology Fundamentals

CTEC 106 5 Credits/Units
5 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Provides foundational skills utilized in information and computer technology and a functional understanding of information technology-related careers. Topics include hardware and software technologies, configuring and setting up workstations, network fundamentals and computer security. Course is based on CompTIA IT Fundamentals certification. [GE]

Powershell Fundamentals

CTEC 111 3 Credits/Units
3 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Provides skills and experience in the Windows PowerShell command line environment for preparation towards careers in computer and information technology related fields. Topics include command line syntax, file system interactions and managing network systems in PowerShell, scripting, functions and using PowerShell with Active Directory. [GE]

Internet Research and Living Online

CTEC 115 3 Credits/Units
3 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Introduction to global networking and the Internet with an emphasis on the basic skills for interacting and utilizing the Internet for research. Topics include strategies for locating, analyzing and evaluating information, as well as network fundamentals, Internet origins, social, legal and ethical issues regarding Internet interactions. [GE]

User Experience Design

CTEC 117 4 Credits/Units
2 hours of lecture / 4 hours of lab

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Investigation into the field of user experience design, web usability and interaction design. Focus on strategies and best practices to better understand how to create successful user experiences. Topics include fundamentals of user centered design, user research, the role of design thinking in user experience design, user testing, information architecture and interface design. Students will design and conduct usability testing. [GE]

Intro to Programming & Problem Solving

CTEC 121 5 Credits/Units
5 hours of lecture

Prerequisite: Eligibility for ENGL& 101 and (PTCS 110 (grade of "C" or higher), or placement into Math Level 50).

Fundamental concepts related to designing and writing computer programs and procedures. Topics include: problem-solving techniques, program design, coding, de-bugging, testing and documentation. Students will use the Python programming language to write simple programs while being exposed to concepts common to all programming. The course serves as an available prerequisite pathway for further studies in programming. [CP, GE, SE]

HTML Fundamentals

CTEC 122 4 Credits/Units
4 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Introduction to website development through the mastery of the fundamentals of HTML, XHTML, and CSS coding for web pages. Intended to give the student the basic skills required to hand-code web pages from scratch. A website will be developed in compliance with current web standards, practices, and usability. Topics include: XHTML, HTML5, CSS, CSS#, web server organization and structure, text editors, images, links, lists, forms, tables, and code validation. [GE, SE]

JavaScript

CTEC 126 5 Credits/Units
5 hours of lecture

Prerequisite: (CTEC 112, CTEC 121 or CSE 121) and CTEC 122 (grades of "C" or higher)

Introduction to the fundamentals and concepts of JavaScript including web scripting with jQuery, AJAX, and related libraries. Student will create dynamic websites and code demonstrating for debugging and testing JavaScript based design and code functionality. [GE]

PHP	With	SQL	I	Microsoft	Database	Admin
CTEC 127			5 Credits/Units	CTEC 134		5 Credits/Units
5 hours of lecture				5 hours of lecture		
Prerequisite: (CTEC 112, CTEC 121 or CSE 121) and CTEC 122 (grades of "C" or higher)				Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).		
This course is an introduction to the server-side programming language PHP and its use in creating dynamic web applications, providing students with a functional knowledge of database design, SQL statements, dynamic web applications, and the methods implemented in PHP for manipulating MySQL databases. [GE]				Provides a foundational overview of concepts, practices, and operation as associated with designing, developing and administrating a database. Topics include core database concepts, creating database objects, manipulating data, data storage, and administering a database. Students will have an opportunity to earn the Microsoft Database Administration Fundamentals Microsoft Technology Associate (MTA) certification as a component of the course curriculum. Familiarity with Windows and MS Office highly recommended. [GE]		
Microsoft	Windows	OS	Fundamentals	Microsoft	Software	Development
CTEC 130			3 Credits/Units	CTEC 135		5 Credits/Units
3 hours of lecture				5 hours of lecture		
Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).				Prerequisite: CTEC 121 or CSE 121 (grade of "C" or higher) and eligibility for ENGL 90.		
Fundamental Windows interactions and key skills and issues important in providing support for Windows users. Topics include basic interactions with Windows, system configuration, installing and upgrading systems, managing devices, system maintenance and other support issues. Course is based on the Windows Operating System Microsoft Technology Associate (MTA) Certification, which students will have an opportunity to earn as a component of the course curriculum. [GE]				Fundamental concepts related to developing desktop and web applications with the Microsoft C# programming language including the use of Microsoft SQL relational database management system. Topics covered include: program design, object-oriented and procedural coding, debugging, testing and documentation. Opportunity to earn the Microsoft Software Development Fundamentals Microsoft Technology Associate (MTA) certification as a component of the curriculum. [GE]		
Microsoft	Networking		Fundamentals	Web	Server	Technology
CTEC 131			3 Credits/Units	CTEC 145		5 Credits/Units
3 hours of lecture				5 hours of lecture		
Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).				Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).		
Foundational concepts and skills associated with computer networking. Topics include basics of local area networking and wide area networks, the OSI Model, wired and wireless networks, Internet Protocol/ Transmission Control Protocol (TCP/IP), and network security. Course is based on the Networking Fundamentals Microsoft Technology Associate (MTA) Certification which students will have an opportunity to earn as a part of the course curriculum. [GE]				Foundations of web server technologies with a focus on skills useful for web development. Topics include installation and configuration of Apache, MySQL, and PHP, and best practices in security. Interact with UNIX using basic commands in command line and GUI environments, administrate and maintain web hosting accounts. [GE]		
Microsoft	Windows	Server	Fundamentals	WordPress		I
CTEC 132			4 Credits/Units	CTEC 160		5 Credits/Units
4 hours of lecture				5 hours of lecture		
Prerequisite: NTEC 103 (grade of "C" or higher)				Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).		
Foundational skills associated with Windows server installation, performance management and server maintenance. Topics include roles of servers, active directory and storage. Course is based on the Windows Network Administration Server Microsoft Technology Associate (MTA) Certification, which students will have an opportunity to earn as a component of the course curriculum. [GE]				An overview of the WordPress platform for individuals seeking to create websites for personal or professional use. Basics on WordPress use, installation, content management, and configuration as well as intermediate and more advanced areas such as WordPress Themes, Plugins, and use of advanced settings. Prior web publishing experience not required. Familiarity with web browsers and email is highly recommended. [GE]		
Microsoft	Security		Fundamentals			
CTEC 133			3 Credits/Units			
3 hours of lecture						
Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).						
Introduces concepts and fundamentals of network security. Topics include security layers, operating system security, network security and security software. Course is based on the Security Fundamentals Microsoft Technology Associate (MTA) Certification, which students will have an opportunity to earn as a component of the course curriculum. [GE]						

Business Web Practices
 CTEC 165 4 Credits/Units
 4 hours of lecture

Prerequisite: Eligibility for ENGL 90 (CAP 64, CAP 70, or CAP 74 (grade of "C" or higher), recommending score on placement test, or qualifying HS GPA).

Business Web Practices surveys business standards and professional best practices for professions associated with web content creation, web design, and web development. Topics include distinctions between freelance, contracted and salaried work environments, web production practices in content strategy, project management, workflow and version control, current practices in marketing, web analytics and search engine optimization, and legal and ethical issues. [GE]

Web Content and Social Media
 CTEC 166 5 Credits/Units
 5 hours of lecture

Prerequisite: CTEC 122, CTEC 160 and (ENGL&101 or PTWR 135) (grades of "C" or higher)

Exploration and survey of best practices relating to the creation, curation and promotion of web content. Topics include: audience analysis, interaction design, content strategy and marketing, legal and ethical consideration, social media interactions, web accessibility and professional standards for written communications and design. [GE]

Cooperative Work Experience
 CTEC 199 1-5 Credits/Units
 15 hours of clinical

Supervised work experience in an approved job. Completion of specific learning objectives and employer evaluation. [GE]

Help Desk Technician I
 CTEC 200 3 Credits/Units
 1 hours of lecture / 6 hours of clinical

Prerequisite: CTEC 104 (grade of "C" or higher)
 Technical support work experience for a real world learning environment that supports technology needs for the local community. All areas of customer technology support environments are emphasized including communication, networking, customer tracking, troubleshooting, documentation and customer relations. Activities include help desk service projects and professional development activities. [GE]

Help Desk Technician II
 CTEC 201 3 Credits/Units
 1 hours of lecture / 6 hours of clinical

Prerequisite: CTEC 200 (grade of "C" or higher)
 Continuation of CTEC 200 Help Desk Technician I. Technical support work experience for a real world learning environment that supports technology needs for the local community with opportunities and experience to serve in project supervisory roles. All areas of customer technology support environments are emphasized including communication, networking, customer tracking, troubleshooting, documentation and customer relations. Activities include help desk service projects, professional development activities, meeting attendance and managing a help desk. [GE]

Introduction to Managed Information Systems
 CTEC 205 5 Credits/Units
 5 hours of lecture

Prerequisite: ENGL& 101 or PTWR 135 (grade of "C" or higher)
 Overview of the role of management information systems in business by supporting a wide range of organizational functions from routine organizational transactions to managerial strategic decision making. Emphasis is on terminology associated with IT and hands-on lab work utilizing common business and IT applications. Familiarity and prior experience with Microsoft Excel spreadsheets and Access databases is highly recommended. [GE]

CompTIA A+ Fundamentals
 CTEC 213 4 Credits/Units
 4 hours of lecture

Prerequisite: CTEC 106 (grade of "C" or higher) and eligibility for ENGL 99
 Covers the skills required to install, configure and troubleshoot PC operating systems and networking software for desktop computers and mobile devices. Course is based on outcomes and objectives related to the CompTIA A+ certifications. [GE][PNP]

CompTIA A+ Operating Systems & Networking
 CTEC 214 4 Credits/Units
 4 hours of lecture

Prerequisite: CTEC 106 (grade of "C" or higher) and eligibility for ENGL 99
 Covers the skills required to install, configure and troubleshoot PC operating systems and networking software for desktop computers and mobile devices. Course is based on outcomes and objectives related to the CompTIA A+ certification. [GE][PNP]

PHP With SQL II
 CTEC 227 5 Credits/Units
 5 hours of lecture

Prerequisite: CTEC 127 (grade of "C" or higher)
 A continuation of the CTEC 127, PHP I course, extending PHP skills with object-oriented programming, API management, PHP security, AJAX integration, and version control. Current best practices in the commercial web industry will be emphasized. [GE]

CompTIA Security+
 CTEC 233 5 Credits/Units
 5 hours of lecture

Prerequisite: CTEC 131 (grade of "C" or higher) and eligibility for ENGL 99
 Covers the essential principles for network security and risk management. Topics include cloud security, expansion of Virtualization and how to secure it, mobile device security and analysis of metrics obtained from monitoring and tracking tools. Course is based on, and is intended for, students to prepare for the CompTIA Security+ certification. [GE]

CompTIA Cybersecurity
 CTEC 235 5 Credits/Units
 5 hours of lecture

Prerequisite: CTEC 233 (grade of "C" or higher) and eligibility for ENGL 99
 Covers critical knowledge and skills that are required to prevent, detect and combat cybersecurity threats. Covers tools such as packet sniffers, intrusion detection systems (IDS) and security information and event management (SIEM) systems. The class is based on the CompTIA Cybersecurity Analyst (CSA+) certification. [GE]

Web and Interface Design I
CTEC 270 4 Credits/Units

2 hours of lecture / 4 hours of lab

Prerequisite: CTEC 122 (grade of "C" or higher)

Fundamentals of web design and site development. Students learn web authoring standards, tools and techniques to conceive, design, produce and publish web sites. Topics include client and marketing analysis, information architecture, conceptual and visual design, workflow and team process, coding, content integration and website testing. [GE]

Web and Interface Design II
CTEC 271 4 Credits/Units

2 hours of lecture / 4 hours of lab

Prerequisite: CTEC 270 (grade of "C" or higher)

Further study in web design and site development. Focus on web authoring trends and strategic methodology to better understand how to extend website functionality and value. Topics include strategies such as cross platform and browser compatibility, content management, search engine optimization, site statistics, accessibility, project management and maintenance planning. [GE]

Emerging Technologies
CTEC 275 5 Credits/Units

5 hours of lecture

Prerequisite: CSE 121 or CTEC 121 (grade of "C" or higher).

Overview of robotics, artificial intelligence and 3D printing. Topics: interactive review of statistics, machine learning, artificial intelligence, review of the Python programming, security in robotics, and big data analysis. Apply programming skills for robotic devices, Artificial Intelligence and machine learning services. Develop 3D models that will be generated on 3D printers. [GE]

Selected Topics
CTEC 280 1-6 Credits/Units

6 hours of lecture

Varying topics. May be repeated for credit. [GE]

Special Projects
CTEC 290 1-5 Credits/Units

5 hours of lecture

Opportunity to plan, organize, and complete special projects approved by the department. [GE]

Web Skills Portfolio
CTEC 293 5 Credits/Units

15 hours of clinical

Capstone projects and activities for Web Development AAT. Create a website and an online presence that will demonstrate proficiency in various skill sets of web development. Develop resume and professional branding, perform job research, develop job search strategies, and make contacts with potential employers. [GE]

Capstone Experience
CTEC 295 3 Credits/Units

3 hours of lecture

Capstone experience for CTEC degree and certificate, to assess and refine final skill set. Focus on developing and engaging in learning experiences to demonstrate and expand workplace skills and abilities. Development of employment-package resources and job-acquisition strategies. [GE]