

CITC 1321 (formerly INFS 191) - A+ Hardware
3 Credit Hours

Course Description:

This course is an introduction to microcomputer hardware installation, maintenance, repair and troubleshooting. Students will learn the processes and procedures for supporting microcomputer hardware in a business environment. This course is designed to assist the student in taking the CompTIA A+ hardware certification examination

Course Outcomes:

Upon completion of the course, the student will learn:

- That a computer requires both hardware and software to work
- About the many different hardware components inside of and connected to a computer
- About different form factors used for computer cases, motherboards, and power supplies
- How electricity is measured and about electrical components
- How to select a power supply
- How to protect yourself and your equipment against the dangers of electricity
- How to work inside a computer case
- How to troubleshoot electrical problems
- About the different types and features of motherboards
- How firmware on the motherboard controls what happens when you first turn on a PC before the OS is loaded
- How to install, configure, and maintain a motherboard
- About the characteristics and purposes of Intel and AMD processors used for personal computers
- About the methods and devices for keeping a system cool
- How to install and upgrade a processor
- How to solve problems with the processor, the motherboard, overheating, and booting the PC
- About the different kinds of physical memory and how they work
- How to upgrade memory
- How to troubleshoot problems with memory
- About the technologies used inside a hard drive and how data is organized on the drive

- How a computer communicates with a hard drive
- How hard drives can work together in a RAID array
- About floppy drives
- How to select and install a hard drive
- How to solve hard drive problems
- About the general approaches you need to take when installing and supporting I/O devices
- About the types of I/O devices and their characteristics
- How to install input devices, including the mouse, keyboard, barcode reader, fingerprint reader, and touch screen
- How to install and configure several I/O devices, including ports on the motherboard, dual monitors, and expansion cards
- How to troubleshoot I/O devices, including keyboards, pointing devices, and video
- About multimedia adapter cards, including sound cards, TV tuner cards, and video capture cards
- About optical storage technologies, including CD, DVD, and Blu-ray
- About removable storage, including solid-state devices, external hard drives, and tape drives
- How to install multimedia peripherals and input devices
- How to install and configure multimedia and mass storage devices, including optical drives, adapter cards, and external drives
- How to troubleshoot multimedia and mass storage devices
- About operational procedures to keep you, other people, the equipment, and the environment safe
- How to develop a preventive maintenance plan and what to include in it
- How to approach and solve a PC problem
- About hardware devices used for networking
- About the different types of networks
- About the protocols and standards Windows uses for networking
- How to connect a computer to a network
- About special considerations when supporting notebooks that are different from supporting desktop computers
- How to install, configure, optimize, troubleshoot, and repair peripheral devices used with notebooks
- How to troubleshoot, upgrade, and replace internal notebook components
- About printer types and features
- How to install printers and how to share a printer over a local area network
- How to manage print jobs in Windows and how to install printer consumables
- About routine maintenance tasks necessary to support printers
- How to troubleshoot printer problems

Prerequisites and Corequisites:

INFS 1010 or equivalent is required.

Course Topics:

Introducing Hardware
Form Factors, Power Supplies, and Working Inside a Computer
All About Motherboards
Supporting Processors
Upgrading Memory
Supporting Hard Drives
Installing and Supporting I/O Devices
Multimedia Devices and Mass Storage
PC Maintenance and Troubleshooting Strategies
Networking Essentials
Supporting Notebooks
Supporting Printers

Specific Course Requirements:

Basic knowledge of Microsoft Windows is required.

Required Textbooks:

Please visit the [Virtual Bookstore](#) to obtain textbook information for this course. Move your cursor over the "Books" link in the navigation bar and select "Textbooks & Course Materials." Select your Program, Term, Department, and Course; then select "Submit."

Hardware and Software Requirements:

Minimum hardware requirements can be found [here](#).

Minimum software requirements can be found [here](#).

Common applications you might need:

To read a PDF file download the latest version of [Adobe Reader here](#)

Don't have Microsoft Word? Explore an alternative [OpenOffice here](#)

Accessing a PowerPoint file? Download the [PowerPoint Viewer here](#)

Web Resources:

Purdue [OWL Online Writing Lab](#) (for APA, MLA, or Chicago style)

The Writing Center [Online Writer's Handbook](#)

Student Resources:

- Technical support information can be found on the [TN eCampus Help Desk](#) page.
- Smarthinking virtual tutoring is available **FREE** of charge. to access Smarthinking, visit the course homepage and select Smarthinking under Course Resources. You also view [sample sessions](#) to see what Smarthinking offers and how it works.
- Information on other student issues or concerns can be located on the [TN eCampus Student Resources](#) page.

Instructor Information:

Please see "Instructor Information" in the Getting Started Module for instructor contact information, virtual office hours, and other communication information. You can expect to receive a response from the instructor within 24-48 hours unless notified of extenuating circumstances.

Testing Procedures:

Assessment of the course outcome statements is accomplished using exams, projects, and computer simulations

Grading Procedures:

The final grade will be based upon the following: There will be 12 module quizzes worth 100 points each, 11 LabSim modules worth 100 points each, a midterm exam and a final exam worth 250 points each for a total of 2800 points. No scores on exams are dropped. Module Quizzes can be submitted early, but cannot be submitted after the final due date. These due dates are listed in the schedule. Failure to submit the assignments before the due date will result in a grade of zero.

Grade Item	Points Each	Total
12 Module Quizzes	100	1200
11 Lab Sim Modules	100	1100
Mid-Term Exam	250	250
Final Exam	250	250
	Total Points for the Course	2800

Grading Scale:

Point Range	Letter Grade
2520-2800 points	A
2240-2519 points	B

1960-2239 points	C
1680-1959 points	D
0-1679 points	F

Assignments and Projects:

LabSim Modules can be submitted early, but cannot be submitted after the final due date. These due dates are listed in the schedule. Failure to submit the assignments before the due date will result in a grade of zero. Late assignments will not be accepted.

Class Participation:

Students must participate in all interactive aspects of the course. Students are expected to communicate with other students and participate actively in all aspects on the course. Students must check the course email and discussion frequently for announcements, and students must actively participate in threaded discussion events to communicate with other students.

Discussions will be current events at the time that the module is being used. The discussion participation will not be graded.

Late Policy:

Students are expected to complete the assignments or take the required quizzes/exams prior to or on the date posted.

Course Ground Rules:

The following two statements (1., 2.) were derived from the TBR System-wide Student Rules document, released January 2012:

RULES OF THE TENNESSEE BOARD OF REGENTS STATE UNIVERSITY AND COMMUNITY COLLEGE SYSTEM OF TENNESSEE SYSTEMWIDE STUDENT RULES CHAPTER 0240-02-03 STUDENT CONDUCT AND DISCIPLINARY SANCTIONS

[Read the document in its entirety here.](#)

1. Standards of Conduct:

- Students are required to adhere to the same professional, legal and ethical standards of conduct online as on campus. In addition, students should conform to generally accepted standards of "netiquette" while sending e-mail, posting comments to the discussion board, and while participating in other means of communicating online. Specifically, students should refrain from inappropriate and/or offensive language, comments and actions.

2. [Review the TN eCampus Academic Integrity/Academic Honesty Policy:](#)

- In their academic activities, students are expected to maintain high standards of honesty and integrity. Academic dishonesty is prohibited.

Such conduct includes, but is not limited to:

- an attempt by one or more students to use unauthorized information in the taking of an exam
- to submit as one's own work, themes, reports, drawings, laboratory notes, computer programs, or other products prepared by another person,
- or to knowingly assist another student in obtaining or using unauthorized materials.

Plagiarism, cheating, and other forms of academic dishonesty are prohibited.

Students guilty of academic misconduct, either directly or indirectly through participation or assistance, are subject to disciplinary action through the regular procedures of the student's home institution. Refer to the student handbook provided by your home institution to review the student conduct policy.

In addition to other possible disciplinary sanctions that may be imposed, the instructor has the authority to assign an "F" or zero for an activity or to assign an "F" for the course.

Other Course Rules:

Students are expected to:

- Participate in all aspects of the course
- Communicate with other students
- Learn how to navigate in Brightspace
- Keep abreast of course announcements
- Use the assigned course management (Brightspace) email address rather than a personal email address
- Address technical problems immediately:
 - [Contact Technical Support](#)
 - [View Term Calendar here](#)
- Observe course netiquette at all times.

Guidelines for Communications:

Email:

- Always include a subject line.
- Remember without facial expressions some comments may be taken the wrong way. Be careful in wording your emails. Use of emoticons might be helpful in some cases.
- Use standard fonts.
- Do not send large attachments without permission.
- Special formatting such as centering, audio messages, tables, html, etc. should be avoided unless necessary to complete an assignment or other communication.
- Respect the privacy of other class members

Discussions:

- Review the discussion threads thoroughly before entering the discussion. Be a lurker then a discussant.
- Try to maintain threads by using the "Reply" button rather starting a new topic.
- Do not make insulting or inflammatory statements to other members of the discussion

group. Be respectful of other's ideas.

- Be patient and read the comments of other group members thoroughly before entering your remarks.
- Be cooperative with group leaders in completing assigned tasks.
- Be positive and constructive in group discussions.
- Respond in a thoughtful and timely manner.

Library:

The [Tennessee Virtual Library](#) is available to all students enrolled in TN eCampus programs and courses. Links to library materials (such as electronic journals, databases, interlibrary loans, digital reserves, dictionaries, encyclopedias, maps, and librarian support) and Internet resources needed by learners to complete online assignments and as background reading will be included within the course modules. To access the Virtual Library, go to the course homepage and select the **Virtual Library** link under Course Resources.

Students with Disabilities:

Qualified students with disabilities will be provided reasonable and necessary academic accommodations if determined eligible by the appropriate disability services staff at their home institution. Prior to granting disability accommodations in this course, the instructor must receive written verification of a student's eligibility for specific accommodations from the disability services staff at the home institution. It is the student's responsibility to initiate contact with their home institution's disability services staff and to follow the established procedures for having the accommodation notice sent to the instructor.

Syllabus Changes:

The instructor reserves the right to make changes as necessary to this syllabus. If changes are necessitated during the term of the course, the instructor will immediately notify students of such changes both by individual email communication and posting both notification and nature of change(s) on the course bulletin board.

Disclaimer

The information contained in this syllabus is for general information purposes only. While we

endeavor to keep this information up-to-date and accurate, there may be some discrepancies between this syllabus and the one found in your online course. The syllabus of record is the one found in your online course. Please make sure you read the syllabus in your course at the beginning of the semester. Questions regarding course content should be directed to your instructor.