A+ HARDWARE & SOFTWARE
CITC 1320

Combined Lecture/Lab Hours: 4.0
Credit Hours: 3.0
Revised: Fall 2016

Catalog Course Description
This course covers installation, maintenance, repair, troubleshooting and connectivity of computers and networks. Topics include the internal components of a computer, installing an operating system, troubleshooting using systems tools and diagnostic software, connecting to a network, implementing security best practices on a workstation, and peripheral setup and troubleshooting. This course integrates virtual learning tools to supplement classroom learning and to provide an interactive "hands-on" experience. The course follows the current Computing Technology Industry Association (CompTIA) A+ (Core Hardware) exam certification criteria guidelines.

Prerequisite(s)
None

Co-requisite(s)
None

Textbooks(s) and Other Course Materials
Required

Basic computer service hand tool kit including a personal static wrist strap.

Optional
- A+ Certification Exam Guide, (latest edition for 901 and 902 exams), Michael Myers
- Upgrading and Repairing PCs, (latest edition), Scott Mueller
- Various PC service guides and other product manuals as required.
- LabSim Bundle for CompTIA 220-901 (or latest version) and 220-902 (or latest version) Exams, TestOut Corporation. An Academic Discount is available with a code available from your instructor.
## WEEK/UNIT/TOPIC BASIS

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
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<tbody>
<tr>
<td>1-2</td>
<td>Pc Hardware Introduction; Safety; Preventive Maintenance</td>
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<tr>
<td>2-3</td>
<td>Satisfying Customer Needs</td>
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<td>2-4</td>
<td>Basic Computer Mathematics; Electricity; Electronics; PC Power Supplies; “Form Factors”; Windows Part 1</td>
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<tr>
<td>5-6</td>
<td>PC Busses (Internal, Expansion); Motherboards; Windows Part 2</td>
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<td>6-7</td>
<td>Microprocessors; Windows Part 3</td>
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<tr>
<td>7-8</td>
<td>Memory Technologies and Systems (RAM, ROM, Etc.); Windows Part 4</td>
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<tr>
<td>8-9</td>
<td>Magnetic Storage Devices (Disks, Etc.); SCSI Devices; Windows Part 5</td>
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<tr>
<td>9-10</td>
<td>I/O Devices (Sound, Video, USB, IEEE 1394, Parallel, PS/2, Etc.) Using Windows “Device Manager”; Windows Part 6</td>
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<tr>
<td>10-11</td>
<td>Multimedia Devices; Optical Storage Devices (CD, DVD, BD Etc.); Tape Drives; Digital Cameras; MIDI Devices; Windows Part 7</td>
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<tr>
<td>12-13</td>
<td>Portable Pcs (Laptops, Notebooks, Etc., PCMCIA Devices, Bluetooth, Cellular and WiFi; Special Memory for Portable Devices; Windows Part 8</td>
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<tr>
<td>13-14</td>
<td>Supporting Printers; Windows Part 9</td>
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<tr>
<td>13-14</td>
<td>Networking Pcs; Windows Part 10</td>
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<tr>
<td>14</td>
<td>Diagnosing and Troubleshooting System Problems; Windows Part 11</td>
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<tr>
<td>15</td>
<td>Final Projects/Exam</td>
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## COURSE GOALS

Note: Roman numerals after course objectives reference goals of the Computer Information Technology program.

The course will:

A. Guide students to develop a working understanding of the terminology, hardware devices, and system software (device drivers, etc.) associated with personal computers (PCs). II, III, VIII, IX, X

B. Expand student knowledge and skills of diagnosing and troubleshooting PCs. II, III, V, VIII, IX, X

C. Enhance student knowledge and skills of installing, configuring, and upgrading PC components and software. II, III, IV, V, VIII, X

## EXPECTED STUDENT LEARNING OUTCOMES

Note: Capital letters after Expected Student Learning Outcomes reference the course goals listed below.

Students will:
1. Identify, install, configure, and troubleshoot hardware components to support computing needs. (A,B,C)
2. Identify, install, configure, and troubleshoot software components to support computing needs. (A,B,C)
3. Identify, install, configure, and troubleshoot necessary components for local area networks. (A,B,C)

EVALUATION

Testing Procedures: 50% of grade
There will be a minimum of four (4) tests.

Laboratory Expectations: 45% of grade
Lab attendance is required. Assignments must be completed and submitted before the assigned deadline. Laboratory will be a combination of homework, due at the beginning of the class, and lab assignments, due at the end of the lab.

Field Work
N/A

Other Evaluation Methods: 5% of grade
Students will be required to work together in teams and must present on different projects

Grading Scale

<table>
<thead>
<tr>
<th>Grade</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>A</td>
<td>93 – 100</td>
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<tr>
<td>B+</td>
<td>88 – 92</td>
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<tr>
<td>B</td>
<td>83 – 87</td>
</tr>
<tr>
<td>C+</td>
<td>78 – 82</td>
</tr>
<tr>
<td>C</td>
<td>73 – 77</td>
</tr>
<tr>
<td>D</td>
<td>65 – 72</td>
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<tr>
<td>F</td>
<td>Below 65</td>
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POLICIES

Attendance Policy
Pellissippi State expects students to attend all scheduled instructional activities. As a minimum, students in all courses (excluding distance learning courses) must be present for at least 75 percent of their scheduled class and laboratory meetings in order to receive credit for the course. Individual departments/programs/disciplines, with the approval of the vice president of Academic Affairs, may have requirements that are more stringent. In very specific circumstances, an appeal of the policy may be addressed to the head of the department in which the course was taken. If further action is warranted, the appeal may be addressed to the vice president of Academic Affairs.
Academic Dishonesty

Academic misconduct committed either directly or indirectly by an individual or group is subject to disciplinary action. Prohibited activities include but are not limited to the following practices:

- Cheating, including but not limited to unauthorized assistance from material, people, or devices when taking a test, quiz, or examination; writing papers or reports; solving problems; or completing academic assignments.
- Plagiarism, including but not limited to paraphrasing, summarizing, or directly quoting published or unpublished work of another person, including online or computerized services, without proper documentation of the original source.
- Purchasing or otherwise obtaining prewritten essays, research papers, or materials prepared by another person or agency that sells term papers or other academic materials to be presented as one’s own work.
- Taking an exam for another student.
- Providing others with information and/or answers regarding exams, quizzes, homework or other classroom assignments unless explicitly authorized by the instructor.

Any of the above occurring within the Web or distance learning environment.

Please see the Pellissippi State Policies and Procedures Manual, Policy 04:02:00 Academic/Classroom Conduct and Disciplinary Sanctions for the complete policy.

Accommodations for Disabilities

Students that need accommodations because of a disability, have emergency medical information to share, or need special arrangements in case the building must be evacuated should inform the instructor immediately, privately after class or in her or his office. Students must present a current accommodation plan from a staff member in Disability Services (DS) in order to receive accommodations in this course. Disability Services may be contacted by sending email to disabilityservices@pstcc.edu, or by visiting Alexander 130. More information is available at PSCC Disability Services. (www.pstcc.edu/sswd/)