CRN115 PC Hardware Fundamentals Syllabus

Course Information

Credits: 4
Campus: Washburn Institute of Technology
Address: 5724 SW Huntoon
City/State/Zip: Topeka, Kansas 66604
Office Fax: 785-273-7080

Description
PC Hardware Fundamentals provides an introduction to the computer hardware skills needed to help meet the requirement for entry-level information and communication technology professionals. The curriculum covers the fundamentals of PC hardware technology, networking, laptop, and printer, operational procedures, and also provides an introduction to advanced concepts in ever growing Computer Technology.

Students who complete this course will be able to describe the internal components of a computer, assemble a computer system, install an operating system, and troubleshoot using system tools and diagnostic software. Hands-on labs help students develop critical thinking and complex problem-solving skills.

Textbooks
none

Student Learning Outcomes:
A. Communicate effectively
B. Integrate technology
C. Learn effectively
D. Demonstrate cooperative teamwork skills
E. Apply safety in the workplace
F. Think critically and creatively
G. Demonstrate responsible work ethics

Competencies

1.0 PC Hardware
1.1 Configure and apply BIOS settings.
1.2 Differentiate between motherboard components, their purposes, and properties.
1.3 Compare and contrast RAM types and features.
1.4 Install and configure expansion cards.
1.5 Install and configure storage devices and use appropriate media.
1.6 Differentiate among various CPU types and features and select the appropriate cooling method.
1.7 Compare and contrast various connection interfaces and explain their purpose.
1.8 Install an appropriate power supply based on a given scenario.
1.9 Evaluate and select appropriate components for a custom configuration, to meet customer specifications or needs.
1.10 Given a scenario, evaluate types and features of display devices.
1.11 Identify connector types and associated cables.
1.12 Install and configure various peripheral devices.

2.0 Networking
2.1 Identify types of network cables and connectors.
2.2 Categorize characteristics of connectors and cabling.
2.3 Explain properties and characteristics of TCP/IP.
2.4 Explain common TCP and UDP ports, protocols, and their purpose.
2.5 Compare and contrast wireless networking standards and encryption types.
2.6 Install, configure, and deploy a SOHO wireless/wired router using appropriate settings.
2.7 Compare and contrast Internet connection types and features.
2.8 Identify various types of networks.
2.9 Compare and contrast network devices, their functions, and features.
2.10 Given a scenario, use appropriate networking tools.

3.0 Laptops
3.1 Install and configure laptop hardware and components.
3.2 Compare and contrast the components within the display of a laptop.
3.3 Compare and contrast laptop features.

4.0 Printers
4.1 Explain the differences between the various printer types and summarize the associated imaging process.
4.2 Given a scenario, install, and configure printers.
4.3 Given a scenario, perform printer maintenance.

5.0 Operational Procedures
5.1 Given a scenario, use appropriate safety procedures.
5.2 Explain environmental impacts and the purpose of environmental controls.
5.3 Given a scenario, demonstrate proper communication and professionalism.
5.4 Explain the fundamentals of dealing with prohibited content/activity.

Guidelines for Success

Assessment Plan
Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution’s technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

Grading Rationale and Grading Scale
Grading Criteria
90% or above A
80% - 89% B
70% - 79% C
60% - 69% D
Below 60% F

Students must have a cumulative 2.0 (on a scale of 4.0) grade point average (GPA) after the first year's courses in order to return for the second year. Students must have a cumulative 2.0 (on a scale of 4.0) grade point average after the second year in order to graduate.
Grading Rationale:
Course evaluation will be based on performance on quizzes, tests, projects, lab assignments, papers, presentations, and weekly performance. Tests and quizzes will be in short answer, true or false, matching or multiple choice form, and will cover material from lectures, reading assignments, textbooks, labs, and projects. Unexcused absences from tests will result in a score of zero for the test. Instructors must be notified in advance if a student will not be present when a test is given.

Pop Quizzes: There may be one or more pop quizzes per week. There is no make-up for missed pop quizzes.

Lab Assignments: Several labs will be given each week which need to be finished by the specified due date. Late lab procedures will be penalized at a rate of 20% per day. There is no make-up for missed projects. Any disk submitted for grading that contains a virus will receive a zero for the project. Any damaged disk submitted for grading will also receive a zero for that project. Lab projects will be graded on accuracy, professionalism, style, and completeness.

Course Projects: Course projects must be completed on or before the due date and time. Late course projects will be penalized at a rate of 20% per day. There is no make-up for missed course projects. Any disk submitted for grading that contains a virus will receive a zero for that project. Lab projects will be graded on accuracy, professionalism, style, and completeness.

Final Projects: Each course will contain a final project. Details for the final project will be provided well in advance of the due date. Any disk submitted for grading that contains a virus will receive a zero for the project. Any damaged disk submitted for grading will also receive a zero for that project. Lab projects will be graded on accuracy, professionalism, style, and completeness.

Attendance
Attendance is a key part of success in the program and attendance hours cannot be made up. However, there are times when a student will have to be absent. It is their responsibility to notify the instructor of any absences. The hours that you were not in class cannot be replaced. You will miss valuable information shared either by your instructor or with other students. Many times you will miss "one-shot" opportunities for lessons, labs, or quizzes which cannot be made-up. Students are responsible for obtaining the work that can be made-up. As outlined in the student handbook several types of absences are "no-charge". The Director of Student Services will determine whether absences should be treated as such. No-charge absences do not count against your attendance record.

Dress Code:
All students will be expected to wear properly fitting apparel suitable to this area of work, often known as "business casual". All dress code policies of Washburn Tech will be followed with the following enhancements for this program: (1) All students will wear slacks while in class. Blue jeans are not appropriate for this program. (2) All shirts must have a collar and will be buttoned and tucked in. (3) Sandals and open shoes are not appropriate.
Disability
The Special Support Services (SSS) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities MUST register and provide documentation with the office to be eligible for services. New requests for accommodations should be submitted two months or more prior to the date services should begin; however, contact the SSS Office as soon as a need may arise. Depending on the accommodation request, four to eight week lead time may be needed for timely and effective provision of services. SSS coordinates and assist in arranging services it deems appropriate of eligible students on a case-by-case basis.

If you are a student with a disability that may substantially limit your ability to participate in this class and believe you will need accommodations, it is your responsibility to contact:

Special Support Services Coordinator
Phone: 785-228-6356
E-Mail: ssscoordinator@washburn.edu