

**Course Title: IST 150: PC Tech/Troubleshooting and Repair**

**Course Leader: Karen Weil-Yates**

**Expected Learning Outcomes for Course**

- *Students will be able to assemble, setup, and upgrade personal computer systems and mobiles devices including netbooks and tablets*
- *Students will be able to diagnose, isolate faulty components using critical thinking skills*
- *Students will demonstrate customer service, troubleshooting and preventative maintenance skills*
- *Students will be able to prepare for certification*

**Assessment**

(How do students demonstrate achievement of these outcomes?)

Students are required to

- complete hands-on labs and answer questions that promote Internet research of diagnostic solutions, setups, and upgrades; customer service and critical thinking.
- take two hands-on exams: one, where they identify parts and their characteristics; two, where they diagnose and repair a faulty system
- take the Kaplan Self-Test Essentials Exam Prep for A+ (currently the leading prep exam for certification)
- Students also participate in a computer repair clinic where they can develop and improve their diagnostic and customer service skills.

**Validation**

(What methods are used to validate your assessment?)

All instructors who teach this course must be A+ certified. The textbook is an approved CompTIA A+ text and is published by an industry leader in the information technology field.

This course's assessments were validated at the by advisory committee members as needed. Course content is mapped to A+ 802 (2013) Certification Exam objectives (additional objectives are also included. Students are required to take a nationally approved certification preparation exam for A+. They take the exam at least twice in the semester: The first time is to give the instructor an idea of the student's "starting point"—much like a pre-test. The second exam is the only other "written exam" that is given; it replaces all other multiple choice exams that were associated with the course (there were 4). The student may take this exam as many times as they like throughout the semester, with the instructor recoding the highest score. They have access to the answers in the form of taking the exams in a study mode or by borrowing printouts in a notebook to review the answers and rationale behind those answers (there are over 250 questions). The intentions behind this strategy are to:

- Get them used to the type of questions and the speed/pace at which they make take a true certification exam

#### Course Outcomes Guide #4

- Get students into the habit of preparing for an exam—repetitions help with memory retention
- Get students to set goals and achieve those goals (I am going to get a \_\_\_% on this exam)
- Give students the initiative and encouragement to take the actual certification—the prep that is used sets a higher bar than the actual certification—this if students pass this prep that can pass the certification.

The repair clinic was presented to my cohorts at the 2006 CompTIA Breakaway during informal discussions where we were to share ideas and pedagogy. I was asked to share how our clinic worked and outline procedures. Many of the participants asked if they could take my repair clinic idea and incorporate it into their programs. I also prepared a presentation for AFACCT on the repair clinic and its role in this class. The clinic assists anywhere from 60-90 clients per semester.

#### Results

(What does the data show?)

***Self-Test Practical Essentials Exam*** results are as follows for two sections:

	Self Test #1	Self Test #2	Pass *	Course Pass Rate
Student #1	41	62	Pass	82%
Student #2	47	34		56%
Student #3	55	0		53%
Student #4	55	60	Pass	64%
Student #5	49	0		14%
Student #6	51	76	Pass	88%
Student #7	52	85	Pass	74%
Average	50	45		

If you remove those who did take the exams (5 students; one who did not pass) the averages decreased to 49% and the second increased to 64% %.

#### ***Hands-On Exams and Professional Development***

Students must complete 6 hours in the Computer Repair Clinic run by the ITA for “real world”, hands-on experience for their Professional Development Project. They are required to join the ITA for the semester. During their clinic experience, they are assigned a computer and partner to work with as they learn to troubleshoot and diagnose computer repair problems; they must also attend two ITA events, a soldering workshop and Professional Workshops created by the staff in Job Placement/Internship.. The clinic repairs approximately 60 computers per semester with a wide range of problems, issues and needs. Students must then write a 500 word report on their experience.

	Professional Development	Hands-on Exam 1	Hands-on Exam 2
Average	50%	48%	79%

## Course Outcomes Guide #4

One student walked away from the course. More students are not submitting the Professional Development report.

### **Follow-up**

(How have you used the data to improve student learning?)

Some students tend to postpone taking the second Self-Test or not take it at all. I think I will require students to take the Self-Test more times in the semester.

I have selected a new course cartridge called U-Certify, both the text and many assignments are on-line. Hopefully this will give me more class time to work on identification, troubleshooting and problem-solving exercises.

### **Budget Justification**

(What resources are necessary to improve student learning?) 5-seat site license for A+ Self-Test Certification software; 10 systems per class; safety equipment (anti-static mats and wrist straps); test equipment (multimeters, power supply testers, etc); peripherals; I/O devices; old laptops; demo equipment; sleeve of CDs; networking equipment (NICs, switches, cables); wireless adapters, netbooks, removable hard drives, tablets & replacement screens, soldering equipment, Apple Mac-minis, all-in-ones.