**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 take CompTIA 901 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)
- take CompTIA 901 exam

**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+ 901 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.  This year for the purposes of a DLLR grant students were also required to take the CompTIA exam before the end of the course. The CompTIA exam was recorded as an assignment and worth 5% of the grade; just for taking the exam (Pass/Fail) students were given 100% for the assignment. Those that passed the exam were given 100% for their final (10% of the grade) instead of taking the Transcender the second time.
- Get them used to the type of questions and the speed/pace at which they make take a true certification exam

- 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.
- Give students the experience of taking a certification exam.

**Results**
(What does the data show?)
***Transcender Exam (901)*** results are as follows for the year (3 sections), displayed as Averages:

| Trans 1 2017 | Trans 1 2016 | Inc/Dec | Trans 2 2017 | Trans 2 2016 | Inc/Dec |
|---|---|---|---|---|---|
| 45.3% | 46.6% | -1.3% | 71.6% | 51.1% | 20.5% |

Trans 1 is treated as a pre-test; the difference/decrease is due to 2 students that failed the course and did not take the exams, but were not considered walk-aways in 2017

Trans 2 shows a 20.5% increase for 2017—I spent more time reviewing test taking strategies and using sample questions and solutions. These assessments map to the third & fourth Outcomes.

***Hands-On Exams***

This year there was only one Hands-On Identification exam. The average for the year was 74% (previously it was 76%). I found that I was spending too much time in identification and had to decrease the amount of time spent due to losing a week for the certification exam.

The second Hands-On Exam is troubleshooting: repairing a compromised system and documenting the process; techniques and safety are also included in the exam. There was an decrease from the previous year; again class time was lost due to the certification exam (students were given a class period to take the exam). Both exam maps to the first 3 Outcomes.

| 2018 Hands-on Exam 1 | 2017 Hand-on Exam 1 | Inc/Dec | 2018 Hands-on Exam 2 | 2017 Hands-on Exam 2 | Inc/Dec |
|---|---|---|---|---|---|
| 74% | 76% | 2% | 81.9% | 87.9% | -6.0% |

CompTIA 901 certification results

|  | # Students Enrolled | # Students Taking Cert | # Passing |
|---|---|---|---|
| Fall | 7 | 7 | 3 |
| Spring | 10 | 6 | 3 |

This assessment maps to the last Outcome.
**Follow-up**
(How have you used the data to improve student learning?)

The Certification Exam will not be a requirement for the course. During the second semester, many students opted not to take the cert exam, planning to take it later in the year after they had more tie to study. (Many of my students had multiple exams to take—some 3 or 4).

I will continue to use Transcender as an assessment tool—it does help students to prepare for the exam.

I will continue with the on-line text; it has interactive labs that seem to be effective. I will also continue to require that theses labs and On-line worksheets that I call Ps&Qs (Podcasts & Questions) be done before we begin working on the chapter topic Hands-On Projects (HOPs)— this spring students were not permitted to work on HOPS until those were completed; they sat in the front of the room and completed the assignments while the rest of the class worked in the cage. It only had to happen once (for the most part)—they came prepared to work. It showed in their scores.

I am re-evaluating/rewriting HOPs (Hands-On Projects) (where necessary) to increase critical thinking and troubleshooting skills.

**Budget Justification**
(What resources are necessary to improve student learning?) 10-seat site license for A+ Transcender 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.