CENTER FOR INNOVATIVE TECHNOLOGIES
MASTER COURSE DOCUMENT

CSA 111 Computer Repair 1

Course Description: A course on theory and operation of computer systems. Topics include: operating systems, interface of operating systems and hardware, CPU structures and evolution, bus structures, memory, data storage, input/output devices, motherboard structures, number systems, and USB/IEEE 1392 data transmission.

Prerequisites(s): AFL 085 and AFM 090, or appropriate placement test scores

Co-requisite(s): None

Lecture Hours: 2	Lab Hours: 3	Credit Hours: 3
Lab Fee: 105	Supplemental Fee: 0	Purpose:
☐ Transfer Assurance Guide Course (TAG)	☐ Transfer Module Course (TM)	
Course Format: Lecture/Lab	Grading: A/B/C/D/F/I	
Delivery Method: □ Web	□ Hybrid	☒ Classroom
Semesters Offered: □ Fall	☒ Spring	□ Summer

Course Primary Text:

Title: Upgrading and Repairing Pcs	Edition: Twentieth
Author(s): Meuller	
Publisher: Que	

Supplemental Materials:

Lab computers and peripheral devices

Course Outcomes:

1	The student will be able to apply knowledge, skills, and abilities in basic theory, operation, and fault diagnosis of personal computer systems.
2	The student will be able to apply knowledge, skills, and abilities in basic theory, operation, and fault diagnosis of peripheral devices.
3	The student will demonstrate the ability to communicate technical information.
4	The student will demonstrate a commitment to quality, timeliness, and continuous improvement.

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Course Topics:

Week 1	Development of the PC, PC components and features
Week 2	Overview of Disk operating system commands: system, file, directory, disk, autoexec.bat and config.sys commands
Week 3	Understanding Data: What are information and data, bits, nibbles, bytes, number systems, binary, hex, octal, BCD, ASCII, conversions
Week 4	Microprocessors: Understanding CPU's, major and minor improvements, processor architecture, Intel devices, AMD devices, other CPU's
Week 5	Exam
Week 6	Memory: Basics of semiconductor memory, ram, rom, proms, flash, expansion (capacity and word length), overview of standard PC memory arrays
Week 7	Bus Structures: What is a bus and why is it needed, standard busses (address, data, control), bus contention, overview of current industry standard expansion bus structures (ISA, PCI, PCIe AGP), other bus structures
Week 8	System boards and architecture that surrounds the CPU: System board architecture, form factors, chipsets, system clock
Week 9	Data transmission: How is data transmitted and received, serial data transmission, parallel data transmission, serial vs. parallel "which is better"' serial and parallel ports, USB, USB 2, USB 3 and IEEE 1394 FireWire, others
Week 10	Exam
Week 11	Input/Output devices: Review of input/output devices and how they interface with the PC, keyboard, mouse, etc…
Week 12	Power supplies: Primary function, Form factor, Connections, Ratings, specifications, Power protection, troubleshooting
Week 13	Bios: Basics, System bios, UEFI , Configuration, CMOS setup, Upgrading
Week 14	Flash and Removable storage: Devices, High capacity magnetic storage, Floppy drive interface, Tape drives
Week 15	Exam

Methods of Evaluation/Assessment:

Exams	85.00%
Lab Assignments	10.00%
Attendance	5.00%

Course Keeper: Jeff Vetter Date Completed: March 31, 2019