SYLLABUS

DATE OF LAST REVIEW: 02/2013
CIP CODE: 47.0104
SEMESTER: Departmental Syllabus
COURSE TITLE: Computer Assembly and Troubleshooting for PC Technicians
COURSE NUMBER: CRTE0104
CREDIT HOURS: 3
INSTRUCTOR: Departmental Syllabus
OFFICE LOCATION: Departmental Syllabus
OFFICE HOURS: Departmental Syllabus
TELEPHONE: Departmental Syllabus
EMAIL: KCKCC issued email accounts are the official means for electronically communicating with our students.

PREREQUISITE(S): CRTE0102 Introduction to Personal Computing, Safety and Tool Usage for PC Technicians.

REQUIRED TEXT AND MATERIALS:
Please check with the KCKCC bookstore, http://www.kckccbookstore.com/, for the required texts for your particular class.

COURSE DESCRIPTION:
In this class we will learn how to properly open cases. Power Supply Installation. Motherboard installation. Attachment of devices to the motherboard. Install internal drives. Install drives in external bays. Install adapter cards. Connect all internal cabling. Re-attachment of side panels and connect external cables to the computer. Booting the computer for the first time. Using preventive maintenance as a regular and systematic inspection, cleaning, and replacement of worn parts, materials, and systems. Utilizing Preventive maintenance as a means to prevent failure of parts, materials, and systems by ensuring that they are in good working order. Troubleshooting as a systematic approach to locating the cause of a fault in a computer system. How a good preventive maintenance program can help minimize failures. How Preventative maintenance and systematic troubleshooting can save an organization
time and money. Students will be introduced to a systematic method of solving a problem. Students will learn to utilize flowcharts to help solve difficult problems.

METHOD OF INSTRUCTION: A variety of instructional methods may be used depending on content area. These include but are not limited to: lecture, multimedia, cooperative/collaborative learning, labs and demonstrations, projects and presentations, speeches, debates, and panels, conferencing, performances, and learning experiences outside the classroom. Methodology will be selected to best meet student needs.

COURSE OUTLINE:
I. Opening the Case
II. Install the power supply
III. Attaching the components to the motherboard and installing the motherboard
   A. Installing a CPU and a heat sink/fan assembly
   B. Installing ram
   C. Installing a motherboard
IV. Installing internal drives
   A. Installing a Parallel Drive
   B. Installing a SATA Drive
V. Installing drives in external bays
   A. Install an optical drive
   B. Install a floppy drive
VI. Installing adapter cards
   A. Install the NIC
   B. Install the wireless NIC
   C. Install the video adapter card
VII. Connect all internal cables
   A. Connect the power cables
   B. Connect the data cables
VIII. Re-attach the side panels and connect external cables to the computer
    A. Re-attach the side panels to the case
    B. Connect external cables to the computer
IX. Boot the computer for the first time
   A. Identify beep codes
   B. Describe BIOS setup
X. Explain the purpose of preventive maintenance
XI. Identifying the steps of the troubleshooting process
   A. Explain the purpose of data protection
   B. Gather data from the customer
   C. Verify the obvious issues
   D. Try quick solutions first
   E. Gather data from the computer
   F. Evaluate the problem and implement the solution
   G. Close with the customer

EXPECTED LEARNER OUTCOMES:
A. The learner will be able to demonstrate how to properly open a case.
B. The learner will be able to demonstrate how to properly install a power supply.
C. The learner will be able to demonstrate how to properly attach components to a motherboard.
D. The learner will be able to demonstrate how to properly install a motherboard in a case.
E. The learner will be able to demonstrate how to properly install internal drives in a case.
F. The learner will be able to demonstrate how to install drives in external bays.
G. The learner will be able to explain how to properly install an adapter card.
H. The learner will be able to demonstrate how to connect all internal cables.
I. The learner will be able to reassemble the case and attach external cabling.
J. The learner will be able to identify the steps of the troubleshooting process.
K. The learner will be able to explain the purpose of preventive maintenance.
L. The learner will be able to explain the computer boot process.

COURSE COMPETENCIES:
Upon successful completion of this course:

1. The learner will be able to demonstrate the proper methods of opening PC cases.
2. The learner will be able to properly install a new power supply in a computer case.
3. The learner will be able to demonstrate the ability to properly attach a CPU & Heatsink/Fan to a motherboard.
4. The learner will be able to demonstrate the ability to properly install ram on a motherboard.
5. The learner will be able to demonstrate the ability to properly install an assembled motherboard in a case.
6. The learner will be able to demonstrate the ability to properly install a parallel hard drive in a case.
7. The learner will be able to demonstrate the ability to properly install a SATA hard drive in a case.
8. The learner will be able to demonstrate the ability to install a cd rom in an external bay.
9. The learner will be able to demonstrate the ability to install an optical drive in a case.
10. The learner will be able to demonstrate the ability to install a floppy drive in a case.

The learner will be able to explain how to properly install an adapter card.
8. The learner will be able to demonstrate the ability to properly install a NIC card
9. The learner will be able to demonstrate the ability to properly install a wireless network card.
10. The learner will be able to demonstrate the ability to properly install a video card.

*The learner will be able to demonstrate how to connect all internal cables.*

11. The learner will be able to demonstrate the ability to properly connect the power cables.
12. The learner will be able to demonstrate the ability to properly connect the data cables.

*The learner will be able to reassemble the case and attach external cabling.*

13. The learner will be able to demonstrate the ability to properly reassemble the computer case.
14. The learner will be able to demonstrate the ability to properly reattach the external cabling.

*The learner will be able to explain the computer boot process.*

15. The learner will be able to demonstrate the ability to properly identify errors by their beep code.
16. The learner will be able to demonstrate the ability to properly enter the BIOS.
17. The learner will be able to demonstrate the ability to properly setup the BIOS.

*The learner will be able to explain the purpose of preventive maintenance.*

18. The learner will be able to demonstrate the ability to perform preventive maintenance on a PC.

*The learner will be able to identify the steps of the troubleshooting process.*

19. The learner will be able to demonstrate the ability to gather data from the customer.
20. The learner will be able to demonstrate the ability to verify the obvious issues.
21. The learner will be able to demonstrate the ability to try quick solutions first.
22. The learner will be able to demonstrate the ability to gather data from the computer.
23. The learner will be able to demonstrate the ability to evaluate the problem and implement a solution.
24. The learner will be able to demonstrate the ability to close with the customer.

**ASSESSMENT OF LEARNER OUTCOMES:**
Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation.

**SPECIAL NOTES:**
This syllabus is subject to change at the discretion of the instructor. Material included is intended to provide an outline of the course and rules that the instructor will adhere to in evaluating the student’s progress. However, this syllabus is not intended to be a legal contract. Questions regarding the syllabus are welcome any time.

Kansas City Kansas Community College is committed to an appreciation of diversity with respect for the differences among the diverse groups comprising our students, faculty, and staff that is free of bigotry and discrimination. Kansas City Kansas Community College is committed
to providing a multicultural education and environment that reflects and respects diversity and that seeks to increase understanding.

Kansas City Kansas Community College offers equal educational opportunity to all students as well as serving as an equal opportunity employer for all personnel. Various laws, including Title IX of the Educational Amendments of 1972, require the college’s policy on non-discrimination be administered without regard to race, color, age, sex, religion, national origin, physical handicap, or veteran status and that such policy be made known.

Kansas City Kansas Community College complies with the Americans with Disabilities Act. If you need accommodations due to a documented disability, please contact the Director of the Academic Resource Center in Rm. 3354 or call (913) 288-7670.