DATE OF LAST REVIEW: 07/23/14

CIP CODE: 47.0106

SEMESTER: Departmental Syllabus

COURSE TITLE: Microwave Ovens - Domestic/Commercial

COURSE NUMBER: MAPR0243

CREDIT HOURS: 3

INSTRUCTOR: Departmental Syllabus

OFFICE LOCATION: Departmental Syllabus

OFFICE HOURS: Departmental Syllabus

TELEPHONE: Departmental Syllabus

EMAIL: Departmental Syllabus

KCKCC-issued email accounts are the official means for electronically communicating with our students.

PREREQUISITES: None

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

COURSE DESCRIPTION:
Disassemble and identify components, explain operation, trace circuits, diagnose and repair as needed several makes of microwave ovens. Trace circuits using wiring diagrams and be able to identify, explain the operation, diagnose and repair various and different types of controls. Customer service, repair order write-up, service and parts manual usage, parts ordering and follow through will be discussed and practiced. This course will also teach proper microwave leak prevention and detection, as well as wattage testing. Upon successful completion of this course, the student should be able to utilize, on-line, and parts ordering software. This course will teach invoice accounting, parts labeling, retail price calculation, packaging and parts distribution systems.

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. Domestic Microwave Systems
   A. Microwave Energy
   B. Door Interlock Systems
   C. Wave Guide/Stirrers
   D. Control Circuit boards
   E. Touch Pads
   F. Wattage Calculation
   G. Door systems
   H. Leak Detection/Calibration
   I. General Maintenance

II. Commercial Microwave Systems
   A. Door Interlock Systems
   B. Wave Guide/Stirrers
   C. Control Circuit boards
   D. Touch Pads
   E. Wattage Calculation
   F. Door systems
   G. Leak Detection/Calibration
   H. General Maintenance

III. Introducing Parts Research and Ordering Systems
   A. Parts are critical
   B. Accuracy
   C. Pictorial Diagrams
   D. Names/Numbers can change
   E. On-line Research
   F. Parts Manuals/Microfiche
   G. Inventory Management
   H. Worksheet Parts list
      I. Manuals

IV. Schematics
   A. Domestic Microwaves
   B. Commercial Microwaves

EXPECTED LEARNER OUTCOMES:
A. The student will be able to diagnosis electrical failures of load and power passing devices.
B. The student will be able to measure temperatures.
C. The student will be able to disassemble and reassemble various makes and models of microwaves
D. The student will be able to remove and replace motors, switches, touch pads, and control circuit boards, magnetron tubes.
E. The student will be able to understand microwave energy.
F. The student will be able to diagnose high voltage devices.
G. The student should be able to interpret appliance parts manuals
H. The student should be able to maintain Access database of shop stock parts.
I. The student should be able to navigate on-line web based parts research/ordering software
J. The student should be able to label parts received and distribute replacement parts to live work.
K. The student should be able to interpret parts distributor invoice, and backorder status.

COURSE COMPETENCIES:

The student will be able to diagnose electrical failures of load and power passing devices.
1. The student will be able to diagnose electrical failures of control circuit boards
2. The student will be able to diagnose electrical failures of thermistors
3. The student will be able to diagnose electrical failures of magnetron tube
4. The student will be able to diagnose electrical failures of interlock switches
5. The student will be able to diagnose electrical failures of high voltage components
6. The student will be able to diagnose electrical failures of stirrer and turntable motors.
7. The student will be able to diagnose electrical failures of high voltage diode.
8. The student will be able to diagnose electrical failures of blower motor.

The student will be able to measure temperatures to calculate wattage.
9. The student will be able to measure temperatures to calculate wattage.

The student will be able to disassemble and reassemble various makes and models of microwaves.
10. The student will be able to disassemble and reassemble space saver microwave oven.
11. The student will be able to disassemble and reassemble countertop microwave oven.
12. The student will be able to disassemble and reassemble common cavity microwave oven.
13. The student will be able to disassemble and reassemble commercial microwave oven

The student will be able to remove and replace motors, switches, touch pads, and control circuit boards, magnetron tubes.
14. The student will be able to remove and replace blower motor.
15. The student will be able to remove and replace switch.
16. The student will be able to remove and replace touch pad.
17. The student will be able to remove and replace control circuit board.
18. The student will be able to remove and replace magnetron tube.
The student will be able to understand microwave energy.

19. The student will be able to explain how microwave energy heats.

20. The student will be able to explain how door chock systems prevent microwave leakage.

The student will be able to diagnose high voltage devices.

21. The student will be able to record ohms values of H.V. transformer, H.V. diode, H.V. capacitor, and magnetron tube accurately.

The student should be able to interpret appliance parts manuals

22. The student should be able to identify specific parts and components as provided by a mechanical drawing.

23. The student should be able to accurately determine part numbers by drawing reference number.

The student should be able to maintain Access database of shop stock parts.

24. The student should be able to utilize Microsoft Access program to add to and expend Shop parts inventory.

The student should be able to navigate on-line web based parts research/ordering software

25. The student should be able to acquire part numbers utilizing On-line assets provided via the internet.

The student should be able to label parts received and distribute replacement parts to live work.

26. The student should be able to label parts received and distribute replacement parts to live work

The student should be able to interpret parts distributor invoice, and backorder status.

27. The student should be able to report part status accurately bases on invoice information.

28. The student should be able to identify dealer vs. retail pricing

The student should be able to calculate prices based on markup percentages.

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.