SYLLABUS

DATE OF LAST REVIEW: 7/14/2014
CIP CODE: 46.0401
SEMESTER: Departmental Syllabus
COURSE TITLE: Residential Plumbing and Repair
COURSE NUMBER: BPMT0115
CREDIT HOURS: 4
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:

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

COURSE DESCRIPTION: This is the basic course in residential plumbing and repair. The course topics include: Environmental sustainability, plumbing codes, waste piping, drain, waste and vent systems, toilet maintenance, garbage disposals, kitchen sinks, gas hot water tanks, electric hot water tanks, heat pump hot water tanks, gas iron pipe, corrugated stainless steel piping, commercial flush valves, compression fittings, pipe flare, soldering, PEX and press fittings, and sump pumps.

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. Introduction

II. Plumbing Codes
   A. City
   B. State
   C. National

III. Waste Piping/Water Supply systems
   A. DWV Sizes
   B. Water supply Types
   C. Water Supply repairs
   D. Compression fittings
   E. DWV Types
      1. Iron
      2. Plastic

IV. The Drain, Waste, and Vent System
   A. Stacks
   B. Building Drain
   C. Traps
   D. Vents
   E. Re-venting

V. Toilet Maintenance/Install
   A. Operation of the Toilet
   B. Continuously Running Water
   C. Replacing Tank Valve System
   D. Dislodging an Obstruction for the Toilet
   E. Stopping Leaking Bowls
   F. Installation of a new toilet

VI. Bathroom Vanity
   A. Vanity top install
   B. Faucet Install/repair
   C. Drain/P-Trap maintenance and install
   D. DWV Requirements

VII. Hot Water Tanks
   A. Maintenance/Install of Gas Hot Water Tanks
   B. Maintenance/Install of Electric Hot Water Tanks
   C. Maintenance/Install of Heat Pump Hot Water Tanks

VIII. Garbage Disposal Maintenance
   A. Drain Clogs
   B. Blade Jams
   C. Install Mechanical or Electrical
IX. Installing a New Kitchen Sink
   A. Cutout Size
   B. Cutting the counter Top
   C. Mounting the Sink and Faucet
   D. Water Line Vertical Tubes
   E. Riser Tubes
   F. Trim Fasteners
   G. Caulking
   H. Faucet and Drain Fittings

X. Shower/Tub Faucet
   A. Installation of faucets
   B. Repair of Faucets
   C. Cleaning/Clearing debris on shower head
   D. Cleaning/Clearing debris in drains

XI. Water Fountains
   A. Repair/Replace Fountain Bubbler
   B. Repair/Replace push bars and solenoids
   C. Replace Thermostat
   D. Adjust water pressure regulator
   E. Repair/Replace P-Trap and GFCI

XII. Commercial Urinal/Toilet Flush Valves
    A. Repair/Replace Diaphragm
    B. Repair/Replace Flush Handle
    C. Repair/Replace Vacuum Break
    D. Repair/Replace Head Socket
    E. Repair/Replace Main Shut-off Valve
    F. Install new Flush Valve
    G. Install new Urinal/Toilet

EXPECTED LEARNER OUTCOMES:

A. The student will be able to define and explain plumbing codes.
B. The student will be able to define and explain drain, waste, and vent system.
C. The student will be able to define and complete toilet maintenance and install.
D. The student will be able to define and complete water supply line install and repair.
E. The student will be able to define and complete garbage disposal install and repair.
F. The student will be able to define and complete kitchen sink install and repair.
G. The student will be able to define and complete shower or tub install and repair.
H. The student will be able to define and complete commercial flush valve install and repair.
I. The student will be able to define and complete water fountain install and repair.
J. The student will be able to install and repair hot water tanks.
K. The student will be able to thread, install and repair gas iron pipe and CSST pipe,
L. The student will be able to install and repair a bathroom sink, commercial or residential

COURSE COMPETENCIES:

*The student will be able to define and explain plumbing codes.*

1. The student will be able to understand and demonstrate knowledge of national codes.
2. The student will be able to understand and perform a code check.
3. The student will be able to identify and demonstrate knowledge of state codes.
4. The student will be able to understand and demonstrate knowledge of local codes.
5. The student will be able to understand and perform inspections based on code.
6. The student will be able to identify and demonstrate how codes are used.

*The student will be able to define and explain drain, waste, and vent system.*

7. The student will be able to understand and demonstrate why stacks are necessary.
8. The student will be able to understand and perform cleanouts on traps and drains.
9. The student will be able to identify and demonstrate how to re-vent a system.
10. The student will be able to understand and demonstrate how to install a stack.
11. The student will be able to understand and perform how to install a trap.
12. The student will be able to identify and demonstrate plumbing drain, waste, and vent fittings.

*The student will be able to define and complete toilet maintenance and install.*

13. The student will be able to understand and demonstrate the operation of a toilet.
14. The student will be able to understand and perform a tank valve test.
15. The student will be able to identify and demonstrate how to install/repair a toilet.
16. The student will be able to understand and demonstrate how to replace shut off valve.
17. The student will be able to understand and perform a new flapper install.
18. The student will be able to identify and demonstrate proper tightening of toilet bolts.

*The student will be able to define and complete water supply line install and repair.*

19. The student will be able to install and repair copper or PEX supply lines.
20. The student will be able to identify all fittings for copper or PEX.
21. The student will be able to create a schematic for all supply lines.

*The student will be able to define and complete garbage disposal install and repair.*

22. The student will be able to understand and demonstrate how to clear drain clogs.
23. The student will be able to understand and perform an electricity power check on a garbage disposal.
24. The student will be able to identify and demonstrate how to un-jam blades.
25. The student will be able to understand and demonstrate how to use the re-set feature.
26. The student will be able to understand and perform a garbage disposal install repair.
27. The student will be able to identify and demonstrate knowledge of garbage disposal wiring.
28. The student will be able to define and complete kitchen sink install and repair.

The student will be able to remove and replace the sink completely.
29. The student will be able to remove and install a new faucet.
30. The student will be able to mark and cut-out countertop.
31. The student will be able to repair and create new supply risers.
32. The student will be able to repair and install p-trap and drain assembly.
33. The student will be able to seal and clean the sink after repair or install.

The student will be able to define and complete shower or tub install and repair
34. The student will be able to install or repair faucets.
35. The student will be able to clean and clear drains and shower heads.

The student will be able to define and complete commercial flush valve install and repair.
36. The student will be able to repair the flush handle, vacuum break, and diaphragm.
37. The student will be able to repair the head socket.
38. The student will be able to repair or replace the main shut-off valve.
39. The student will be able to install a new flush valve.

The student will be able to define and complete water fountain install and repair.
40. The student will be able to repair/replace fountain bubbler.
41. The student will be able to repair/replace push bar and solenoids.
42. The student will be able to replace the thermostat.
43. The student will be able to adjust water pressure and regulator.
44. The student will be able to repair/replace p-trap and GFCI receptacle.

The student will be able to define and complete hot water tanks.
45. The student will be able to install or repair a gas hot water tank.
46. The student will be able to install or repair an electric hot water tank.
47. The student will be able to install a heat pump hot water tank.

The student will be able to thread and install black iron pipe, and CSST pipe.
48. The student will be able to cut and thread black iron pipe.
49. The student will be able to cut and thread black iron pipe to fittings.
50. The student will be able to identify different black iron pipe fittings.
51. The student will be able to cut and assemble CSST pipe.
52. The student will be able to install CSST pipe.
53. The student will be able to properly ground CSST and black iron pipe.
54. The student will be able to identify CSST pipe fittings.

The student will be able to install and repair a bathroom sink, commercial or residential.
55. The student will be able to install a new vanity top.
56. The student will be able to install and repair a faucet.
57. The student will be able to install and repair a p-trap and tailpiece.
58. The student will be able to install and repair shut off valves.

ASSESSMENT OF LEARNER OUTCOMES: Student progress is evaluated by means that include, but are not limited to, exams, written assignments, and class participation, hands-on lab settings, and field settings. Student grades will be dependent on an average between all
outcomes and is totally subjective to instructor evaluation of the student’s competent ability to complete the competencies, and complete them to a means that is acceptable in a professional environment or work site.

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 at: 288-7670.