** HMI201 Plumbing II – Course Plan**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Week | Outcomes | Format | Hrs. | Topic/Content | Readings | Assignments | Assessment | Resources |
| 1 | 1, 2, 3, 4, 5 | Lecture | 3 | ***Review Plumbing I*** (**HMI113**) | Handouts,Plumbing Manual I | Handouts | Quiz | **HMI113** notes, instructor’s handouts and calculators |
| 2 | 6, 9 | Lecture  | 1 | ***Review Ontario Building Code (OBC) Sec. 9*** Identify Type and fitting materials and hangars | OBC section 9 |  | Quiz | Plumbing manuals I and II for all weeksBuilding code book |
|  |  | Lab  | 2 | Explain / Demonstrate Floor joists, wall studs, floor and roof trusses, top and bottom platesWhere floor joists may be drilledBacking plates / protection platesElectrolysis / corrosion factorsTemporary, permanent, waterproof etc. (ICF forms) |  |  |  |  |
| 3 | 4, 6, 9, | Lecture | 2 | ***Drainage terms and definitions*** | Handout | Handout | Quiz |  |
|  |  |  |  | Identify Code for common drainage terms and definitionsUse of OBC that contains drainage termsCommon drainage terms / definitions: include backflow preventers, air breaks / gaps, indirect waste, etc. |  |  |  |  |
|  |  | Lab  | 1 | ApplyCreate a basic drainage plan |  |  | Drainage drawings | AutoCAD |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 4 | 3, 4, 5, 6 | Lecture | 1 | ***Sanitary systems and storm sewers*** | Handout | Handout | Drainage drawings | AutoCAD  |
|  |  |  |  | Explain Terms used for sanitary and storm sewersCombined and semi-combined drain systems and why combined drainage systems have been prohibited |  |  |  |  |
|  |  |  |  | Identify Components of a running hand hold trapThree drain designs, common drains |  |  |  |  |
|  |  | Lab | 2 | Apply Begin project – simulate drain systems i.e. ‘pipe up’ a rough in drainage system; test |  |  | Project - Lab assignment |  |
| 5 |  | Lecture | 3 | ***Review / Test #1*** |  |  | Test #1 |  |
| 6 | 6, 9 | Lecture | 1 | ***Ejectors and sumps***   | Handout | Handout | Questions handout | Water alarm, various sizes of ejector and storm pipes used |
|  |  |  |  | Identify Sewage ejector and storm sumpInstallation requirementsRequirements of equipment selection |  |  |  |  |
|  |  |  |  | Explain Positions of a union, check, shut off valveWhere a sump discharge may be connected |  |  |  |  |
|  |  | Lab  | 2 | Apply - DemonstrationHow an ejector discharge pipe may be connectedRequirements of a sewage ejector ventEjector pit and pumpStorm water pit and pump |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 7 | 1, 2, 3, 4, 5,6,  | Lecture | 1 | ***Venting systems*** | Handout | Handout |  |  |
|  |  |  |  | Explain Branch, wet, vent, circuit, yoke and offset relief vents |  |  |  |  |
|  |  | Lab | 2 | Apply Simulate branch, wet vents, dual and back vents continuous (i.e. ‘pipe up’) |  |  | Continue lab project(see week 4) | Vent piping, cutters and pipe joints |
| 8 | 1, 2, 3, 4, 5, 7 | Lecture  | 1 | ***Water distribution systems and sizing*** | Handout  | Handout  |  | Piping, connectors, valves |
|  |  |  |  | Describe Different ways a valve controls flowFour principal valve typesPurpose of a valveExplain Sizing a system |  |  |  |  |
|  |  | Lab  | 2 | Apply Sizing a system |  |  | Observation |  |
| 9 |  |  |  | ***Review / Test #2*** |  |  | Test #2 |  |
| 10, 11, 12 | 1, 2, 3, 4, 5, 7, 8 | Lecture | 3 | ***Plumbing fixtures, appliances and equipment and installations (3)*** Identify Water closets, urinals, bidets, bathtubs, showers, lavatories, sinks | Handout | Handout  | Assessment of installation, quiz | Water closets, urinals, bidets, bathtubs, showers, lavatories and sinks |
|  |  |  |  | Describe typical problems / deficiencies |  |  |  |  |
|  | 3, 6, 8 | Lab  | 6 | Apply Fixture installations (3 labs) with tests:Water closet, basin, bathtub |  |  | Practical assignments(major) |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 13 | 6, 7, 8, 9 | Lecture | 1 | ***Codes and testing requirements*** | Handout | Handout | Quiz |  |
|  |  |  |  | Explain Purpose of testing plumbing systemsHow a water test may be appliedPurpose of an installation of a test fitting |  |  |  |  |
|  |  |  |  | Identify Related sections - part 7 of Code bookThe various types of testingTools and equipment required to perform a water test |  |  |  |  |
|  |  | Lab  | 2 | Perform A water test in the lab |  |  | Water test assessed | Completed projects(Pipe connections) |
| 14 | 4 | Lecture | 2 | ***Trade calculations***  | Handout | Handout | Calculations handed in | Calculator Plumbing manual I(section 3) |
|  |  |  |  | Explain Area calculations, units of measureFormulas to calculate square and rectangles, circles and trianglesArea of a square, rectangle, circle, trapezoid and triangle both in Imperial and SI units |  |  |  |  |
|  |  |  |  | ***Read and interpret job specifications*** | Handout | Handout | Hand in | Various drawings |
|  |  |  |  | Explain Purpose of specificationsNumbering system used in construction |  |  |  |  |
|  |  |  |  | Identify Appropriate sections of specificationsSpecifications relating to the plumbing system installation |  |  |  |  |
|  |  | Lab  | 1 | Apply Research specifications to read and interpret the job |  |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 15 |  |  |  | ***Review / Test #3*** |  |  | Test # 3 |  |
| 16 |  |  |  | ***Final Review*** ***3*** |  |  |  |  |