** HMI201 Plumbing II – Course Plan**

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| 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 weeks  Building code book |
|  |  | Lab | 2 | Explain / Demonstrate  Floor joists, wall studs, floor and roof trusses, top and bottom plates  Where floor joists may be drilled  Backing plates / protection plates  Electrolysis / corrosion factors  Temporary, 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 definitions  Use of OBC that contains drainage terms  Common drainage terms / definitions: include backflow preventers, air breaks / gaps, indirect waste, etc. |  |  |  |  |
|  |  | Lab | 1 | Apply  Create a basic drainage plan |  |  | Drainage drawings | AutoCAD |

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| 4 | 3, 4, 5, 6 | Lecture | 1 | ***Sanitary systems and storm sewers*** | Handout | Handout | Drainage drawings | AutoCAD |
|  |  |  |  | Explain  Terms used for sanitary and storm sewers  Combined and semi-combined drain systems and why combined drainage systems have been prohibited |  |  |  |  |
|  |  |  |  | Identify  Components of a running hand hold trap  Three 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 sump  Installation requirements  Requirements of equipment selection |  |  |  |  |
|  |  |  |  | Explain  Positions of a union, check, shut off valve  Where a sump discharge may be connected |  |  |  |  |
|  |  | Lab | 2 | Apply - Demonstration  How an ejector discharge pipe may be connected  Requirements of a sewage ejector vent  Ejector pit and pump  Storm water pit and pump |  |  |  |  |

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| 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 flow  Four principal valve types  Purpose of a valve  Explain  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) |  |

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| 13 | 6, 7, 8, 9 | Lecture | 1 | ***Codes and testing requirements*** | Handout | Handout | Quiz |  |
|  |  |  |  | Explain  Purpose of testing plumbing systems  How a water test may be applied  Purpose of an installation of a test fitting |  |  |  |  |
|  |  |  |  | Identify  Related sections - part 7 of Code book  The various types of testing  Tools 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 measure  Formulas to calculate square and rectangles, circles and triangles  Area 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 specifications  Numbering system used in construction |  |  |  |  |
|  |  |  |  | Identify  Appropriate sections of specifications  Specifications relating to the plumbing system installation |  |  |  |  |
|  |  | Lab | 1 | Apply  Research specifications to read and interpret the job |  |  |  |  |

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