 **HMI113 - Plumbing I (Course Plan)**

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| Week | **Outcomes** | Format | Hours | Topic/Content | Readings | Assignments | Assessment | Resources |
| 1 | 1, 2 | Lecture | 1 | ***Use of personal protective equipment*** | Instructor handout | Handout | Quiz | Plumbing manual I for all weeks |
|  |  |  |  | Identify  Assess hazardous conditions  Recognize codes, acts and regulations |  |  |  | Code book |
|  |  |  |  | Describe  Compulsory trades as per regulations for plumbers |  |  |  |  |
|  | 1, 3 | Lab | 2 | Perform / Demonstrate  Introduction to shop safety  Intro to operation and storage of tools |  |  | Observation | Standard tool collection |
| 2 | 1 | Lecture | 3+ | ***Ladder / Fall arrest training*** |  |  | Test included | Pre-arranged |
| 3 | 2 | Lecture | 3 | ***Codes, regulations and standards***  Explain  Codes pertaining to plumbing | Code book | Handout | Quiz on codes | Code book, regulations and standards |
|  |  |  |  | Identify  Regulations and standards |  |  |  |  |
| 4 | 4 | Lecture  Lab | 1  2 | ***Pipe and fitting materials, pipe supports and hangers*** | Handout | Handout | Quiz | Various pipes and fittings |
|  |  |  |  | Identify  Steel pipe and fittings  Cast iron soil pipe and fittings  ABS, PVC, cross-linked polyethylene, copper, PEX, composite pipe (plastic, aluminum/plastic), pipes and fittings  Pipe supports and hangers |  |  |  |  |
|  |  |  |  | Explain / Demonstrate  Joining dissimilar materials – proper transition fittings |  |  |  |  |
| 5 | 2, 4 | Lecture | 3 | ***Review / test #1*** |  |  | Test # 1 |  |

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| 6, 7 | 4, 5, 7 | Lecture | 2 | ***Tools and piping methods*** | Handout | handout | Performance accuracy | Various pipes and fittings |
|  |  |  |  | Identify  Measuring tools and instruments  Various plumbing hand / power tools |  |  |  |  |
|  | 4, 5, 10 | Lab | 4 | Apply |  |  |  |  |
|  |  |  |  | Steel pipe, cast iron, copper, poly-metric plastics (PVC, ABS, CPVC), cutting and joining methods |  |  | Pipe joining and cutting  observation |  |
|  |  |  |  | Perform  Build piping projects incorporating different offsets |  |  | Major project assignment |  |
| 8, 9 | 5, 7 | Lecture | 2 | ***Trade calculations-level 1*** | Handout | Handout |  | Various pipes and fittings |
|  |  | Lab | 3 | Apply  Basic math, Linear measurements  Conversion from Imp. to US values |  |  | Quiz | Plumbing manual I section 3 |
|  |  |  |  | Identify /Perform  Calculation of various offsets and square roots |  |  |  |  |
|  |  |  |  | Perform  Various piping arrangements (offsets) – select and apply formulae |  |  | Offset joining accuracy |  |
|  | 2, 7 | Lecture | 1 | ***Review / test #2*** |  |  | Test # 2 |  |
| 10,11 | 6 | Lecture | 2 | ***Trade documentation –level 1*** | Handout | Handout | Quiz | Computers and drafting tables |
|  |  |  |  | Identify  Read and interpret prints  Various drafting instruments  Various projection drawings  Construction drawings |  |  |  | plumbing schematics |
|  |  | Lab | 4 | Apply  Draw various projection drawings, construction drawings |  |  | Drawings will be marked |  |

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| 12 | 6, 8 | Lecture | 1 | ***Drainage systems - introduction*** | Handout |  | Quiz |  |
|  |  | Lab | 2 | Apply  Sizing drainage systems and project work |  |  | Major project | Various pipes and fittings |
| 13 | 6, 9 | Lecture | 3 | ***Venting Systems - introduction*** | Handout |  | Quiz |  |
|  |  |  |  | Apply  Sizing venting systems and project work |  |  | Major project | Various pipes and fittings |
| 14 | 10 | Lecture | 1 | ***Joining methods*** |  |  |  |  |
|  |  | Lab | 2 | Demonstrate  Oxy-acetylene cutting and welding equipment and accessories  Apply  Lay down beads, prepare, tack / weld a butt joint (saddle connection on a drain) |  |  | Observation | Various pipes and fittings |
| 15 | 6, 7, 8, 9 | Lecture | 3 | ***Review / test #3*** |  |  | Test # 3 |  |
| 16 | All | Lecture | 3 | ***Final Review*** |  |  |  |  |