 **HMI 114 - Residential Construction I (Course Plan)**

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| Week | **Outcomes** | Format | Hrs | Topic/Content | Readings | Assignment | Assessment | Resources |
| 1,2 | 1 | LectureLab | 46 | ***The carpenter’s workplace; protect self and others***Understand: the process of skill development and the importance competencyExplainGeneral hand tools, safety, scaffold safety, fall arrest trainingPerform Proper set up of scaffolds and ladder, proper use of tools including fall arrest equipment | Chap. 2 pp. 59-71 | Workbook chapter 2, p.11 | p. 72 Test, ques. # 1-11Practical activities | Handouts, calculators, green tag safety boots, safety glasses.Text book ***Modern Carpentry,*** along with accompanying work book.Handouts / training materials for ladders, scaffolds, fall arrest, power tools, elevated platforms |
| 3 | 1, 2, 4 | LectureLab | 23 | ***Preparing construction specific material and cost estimates******Read and understand architectural drawings*** Explain Preparing material lists for specified residential plansPerform Preparing materials for specific residential plansEstimating materials, costsUnderstanding the use of scale in plansIdentify Identify architectural symbols | Chap. 3pp. 73-99 | Workbook chapter 3, p.13 | p. 100 Test, ques. # 1-16Practical activities | As above and residential prints, calculators |
| 4 | 1, 3 | LectureLab | 23 | ***Building materials, with a focus on engineered lumber and its applications***ExplainVarious building materials, engineered lumber and its applications, wood ‘I’ beams, laminated veneer lumber, glue laminated beams, open web tresses.PerformMatching hangars with proper nailing patterns and proper nailing patterns for laminationIdentify Difference between laminated beams and strand beams. | Chap. 1 | Workbook chapter 1, pp. 5 -10 Questions as assigned  | p. 55 Test, selected questionsPractical activities | As above and building material samples, including engineered lumber, hangars and nails. |
| 5,6 | 1,2,5 | LectureLab | 46 | ***Site preparations and building layout***Explain The operation of the builder’s level and level-transitThe basic operation of a laser level systemPerformMeasure and layout angles using levelling equipmentRead the vernier scale and use a plumb lineApplyUse a builder’s level to make a square cornerUse a tape measure to square off a buildingUse a transit and plumb bob for a starting point and locate building linesFind grade levels and elevationsProper use of laser levels and receiver | Chap. 6 pp. 149-166 | Workbook Chapter 6 pp. 29-32 | p. 167 Test, ques. #1-11 | As above and builder’s level, transit, plumb bob, 100’ tape, laser level and receiver. |
| 7,8,9 | 1, 5 | LectureLab | 69 | ***Footings and foundations***Explain Layout lines of the buildingDescribe excavation proceduresFooting requirements and how to build footing formsThe terms concrete cement and aggregateThe building, erecting and use of formsTypes of foundation systemsApplyFooting designForms for footingsconcreteErecting wall formsPlacing concreteIdentify Concrete blocksInsulating foundation wallsICF foundation wall systemsPouring basement floorsSidewalks and drivesPerformEstimating materials  | Chap. 7pp. 169-219 | Workbook chapter 7 pp. 33-39 | pp.220- 221 Test, week 7 Ques. #1-20, week 8Ques. #21-35 Practical activities | As above and provided forming materials, ICF samples |
| 10,11,12 | 1,2,6 | LectureLab | 69 | ***Floor framing***DescribeType of floor framingPlatform framingGirders and beamsSill plates and headersFloor joist and platform finishingOverhangs and projectionsMaterials for sub-flooringIdentify Material sizes including engineered materials, girder and beam size, posts and columnsProcedures for sill and header constructionApply Estimating material and material sizePerformFloor framing and sheathing | Chap. 8 pp. 223-250 | Workbook Chap. 8 pp. 41-47 | Test ques. 1-10Practical activities | As above and samples of engineered lumber, standard lumber and platform materials |
| 13,14 | 1,2,6 | LectureLab | 46 | ***Entrance platforms and stair construction***DescribeConstruction of entrance platforms and stairsIdentify Various types of stairsStair parts and termsPerform Calculate the rise-run ratio, number and size of risers and stairwell lengthApply Prepare sketches of types of stringersLayout stringers for a given stair rise and runSplitting angles for mitre cuts Using stock stair parts | Chap. 7 pp.211-212 and Chap.18, pp.597-615 | Prepare for final test | Practical activities | As above and staircase materials |
| 15 | 1,2,3,4,5,6 | Lecture, lab | 5 | ***Building project completion***Complete term project work and all practical activities |  |  | Practical activities ***Final test*** |  |
| 16 | 1,2,3,4,5,6, | Lecture / lab | 5 | Review; take up and discuss final test / assignments / practical activities / sharing and feedback |  |  |  |  |