



HMI 114 - Residential Construction I (Course Plan)

Week	Outcomes	Format	Hrs	Topic/Content	Readings	Assignment	Assessment	Resources
1,2	1	Lecture Lab	4 6	<p><i>The carpenter's workplace; protect self and others</i> <u>Understand:</u> the process of skill development and the importance competency <u>Explain</u> General hand tools, safety, scaffold safety, fall arrest training <u>Perform</u> Proper set up of scaffolds and ladder, proper use of tools including fall arrest equipment</p>	Chap. 2 pp. 59-71	Workbook chapter 2, p.11	p. 72 Test, ques. # 1-11 Practical activities	Handouts, calculators, green tag safety boots, safety glasses. Text book <i>Modern Carpentry</i> , along with accompanying work book. Handouts / training materials for ladders, scaffolds, fall arrest, power tools, elevated platforms
3	1, 2, 4	Lecture Lab	2 3	<p><i>Preparing construction specific material and cost estimates</i> <i>Read and understand architectural drawings</i> <u>Explain</u> Preparing material lists for specified residential plans <u>Perform</u> Preparing materials for specific residential plans Estimating materials, costs Understanding the use of scale in plans <u>Identify</u> Identify architectural symbols</p>	Chap. 3 pp. 73-99	Workbook chapter 3, p.13	p. 100 Test, ques. # 1-16 Practical activities	As above and residential prints, calculators

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4	1, 3	Lecture	2	<p>Building materials, with a focus on engineered lumber and its applications</p> <p><u>Explain</u> Various building materials, engineered lumber and its applications, wood 'I' beams, laminated veneer lumber, glue laminated beams, open web tresses.</p>	Chap. 1	Workbook chapter 1, pp. 5 -10 Questions as assigned	p. 55 Test, selected questions	As above and building material samples, including engineered lumber, hangars and nails.
		Lab	3	<p><u>Perform</u> Matching hangars with proper nailing patterns and proper nailing patterns for lamination</p> <p><u>Identify</u> Difference between laminated beams and strand beams.</p>			Practical activities	
5,6	1,2,5	Lecture	4	<p>Site preparations and building layout</p> <p><u>Explain</u> The operation of the builder's level and level-transit The basic operation of a laser level system</p>	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.
		Lab	6	<p><u>Perform</u> Measure and layout angles using levelling equipment Read the vernier scale and use a plumb line</p> <p><u>Apply</u> Use a builder's level to make a square corner Use a tape measure to square off a building Use a transit and plumb bob for a starting point and locate building lines Find grade levels and elevations Proper use of laser levels and receiver</p>				

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7,8,9	1, 5	Lecture	6	<p><i>Footings and foundations</i></p> <p><u>Explain</u></p> <p>Layout lines of the building</p> <p>Describe excavation procedures</p> <p>Footing requirements and how to build footing forms</p> <p>The terms concrete cement and aggregate</p> <p>The building, erecting and use of forms</p> <p>Types of foundation systems</p>	Chap. 7 pp. 169-219	Workbook chapter 7 pp. 33-39	pp.220- 221 Test, week 7 Ques. #1-20, week 8 Ques. #21-35	As above and provided forming materials, ICF samples
		Lab	9	<p><u>Apply</u></p> <p>Footing design</p> <p>Forms for footings concrete</p> <p>Erecting wall forms</p> <p>Placing concrete</p> <p><u>Identify</u></p> <p>Concrete blocks</p> <p>Insulating foundation walls</p> <p>ICF foundation wall systems</p> <p>Pouring basement floors</p> <p>Sidewalks and drives</p> <p><u>Perform</u></p> <p>Estimating materials</p>			Practical activities	
10, 11,12	1,2,6	Lecture	6	<p><i>Floor framing</i></p> <p><u>Describe</u></p> <p>Type of floor framing</p> <p>Platform framing</p> <p>Girders and beams</p> <p>Sill plates and headers</p> <p>Floor joist and platform finishing</p> <p>Overhangs and projections</p> <p>Materials for sub-flooring</p>	Chap. 8 pp. 223-250	Workbook Chap. 8 pp. 41-47	Test ques. 1-10	As above and samples of engineered lumber, standard lumber and platform materials
		Lab	9	<p><u>Identify</u></p> <p>Material sizes including engineered materials, girder and beam size, posts and columns</p> <p>Procedures for sill and header construction</p> <p><u>Apply</u></p> <p>Estimating material and material size</p> <p><u>Perform</u></p> <p>Floor framing and sheathing</p>			Practical activities	

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13,14	1,2,6	Lecture Lab	4 6	<p><i>Entrance platforms and stair construction</i></p> <p><u>Describe</u> Construction of entrance platforms and stairs</p> <p><u>Identify</u> Various types of stairs Stair parts and terms</p> <p><u>Perform</u> Calculate the rise-run ratio, number and size of risers and stairwell length</p> <p><u>Apply</u> Prepare sketches of types of stringers Layout stringers for a given stair rise and run Splitting angles for mitre cuts Using stock stair parts</p>	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	<p><i>Building project completion</i></p> <p>Complete term project work and all practical activities</p>			Practical activities <i>Final test</i>	
16	1,2,3,4,5,6,	Lecture / lab	5	Review; take up and discuss final test / assignments / practical activities / sharing and feedback				