

I. COURSE DESCRIPTION:

The first of three courses intended to familiarize the student with residential construction, building on skills and knowledge developed in Semester I courses. Topics covered in the course include: workplace safety, building layout, excavation, footings and foundations, drainage tiles, sill plates and floors. Participants will learn through hands-on application of theory taught during the course.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. *Adhere to health and safety, and current construction related legislation and practices.***Potential Elements of the Performance:**

- Demonstrate safe work practices including injury prevention and the use of personal protective equipment
- Use tools and equipment according to specified direction / instructions
- Ladder and scaffold safety
- Fall arrest training
- Power tool safety
- Elevated platform safety
- General hand tool safety

2. *Understand and read residential plans.***Potential Elements of the Performance:**

- Understand all residential symbols
- Read measurements both Imperial and Metric
- Know building codes and specifications

3. *Understand and discriminate various building and construction materials including engineered lumber.***Potential Elements of the Performance:**

- Understand engineered lumber and its applications, including
- Wood I-beams
- Laminated Veneer Lumber (LVL)
- Glue-laminated beams
- Open web trusses
- Laminated-strand lumber

4. Prepare construction specific material lists and cost estimates.Potential Elements of the Performance:

- Read and understand architectural drawings
- Understand the use of scale in architectural drawings
- Identify architectural symbols
- Prepare material lists for specified residential plans
- Estimate costs

5. Layout and prepare footings and foundations.Potential Elements of the Performance:

- Site preparation
- Identify types of form systems for foundations, concrete, insulated concrete form or block (pressure treated)
- Lay out and installing footings and foundations
- Complete basic volume calculations for footing forms
- Determine weights and sizes of footings
- Proper location and securing of footings
- Drainage tile placement
- Damp-proofing below grade

6. Understand and assemble floor framing assemblies.Potential Elements of the Performance:

- Determine sizing for floor framing using span tables
- Understand live and dead loads
- Types of floor framing
- Platform framing
- Girders and beams
- Sill plates, headers and trimmers
- Floor joists, trusses and platform finishing
- Floor sheathing
- Assemble a floor frame
- Entrance platforms and stairs

III. TOPICS:

1. Protect yourself and others
2. Safe and proper use of hand tools, power tools, elevated platforms, ladders and scaffolding
3. Cutting and fitting materials with the proper estimated lengths, widths and thicknesses
4. Understanding and reading residential plans
5. Building materials and cost estimating
6. Footings and foundation systems
7. Floor framing assemblies
8. Entrance platforms and stairs

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

- Handouts, calculators, green tag safety boots, safety glasses at all times in the class / on the work site
- Text book **Modern Carpentry**, Essential Skills for the Building Trades, 11th Edition, 2008, Wagner and Smith, along with accompanying work book

V. EVALUATION PROCESS/GRADING SYSTEM:

Assignments and tests	30%
Practical activities	55%
Attendance	15%

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:Attendance:

Sault College is committed to student success. There is a direct correlation between academic performance and class attendance; therefore, for the benefit of all its constituents, all students are encouraged to attend all of their scheduled learning and evaluation sessions. This implies arriving on time and remaining for the duration of the scheduled session.

VII. COURSE OUTLINE ADDENDUM:

The provisions contained in the addendum located on the portal form part of this course outline.

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 Describe excavation procedures Footing requirements and how to build footing forms The terms concrete cement and aggregate The building, erecting and use of forms Types of foundation systems</p> <p><u>Apply</u></p> <p>Footing design Forms for footings concrete Erecting wall forms Placing concrete</p> <p><u>Identify</u></p> <p>Concrete blocks Insulating foundation walls ICF foundation wall systems Pouring basement floors Sidewalks and drives</p> <p><u>Perform</u></p> <p>Estimating materials</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				Practical activities	

10, 11,1 2	1,2,6	Lecture	6	<i>Floor framing</i> <u>Describe</u> Type of floor framing Platform framing Girders and beams Sill plates and headers Floor joist and platform finishing Overhangs and projections Materials for sub-flooring <u>Identify</u> Material sizes including engineered materials, girder and beam size, posts and columns Procedures for sill and header construction <u>Apply</u> Estimating material and material size <u>Perform</u> Floor framing and sheathing	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	<u>Identify</u> Material sizes including engineered materials, girder and beam size, posts and columns Procedures for sill and header construction <u>Apply</u> Estimating material and material size <u>Perform</u> Floor framing and sheathing			Practical activities	
13,1 4	1,2,6	Lecture	4	<i>Entrance platforms and stair construction</i> <u>Describe</u> Construction of entrance platforms and stairs <u>Identify</u> Various types of stairs Stair parts and terms <u>Perform</u> Calculate the rise-run ratio, number and size of risers and stairwell length <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	Chap. 7 pp.211- 212 and Chap.18, pp.597- 615	Prepare for final test	Practical activities	As above and staircase materials
		Lab	6	<u>Identify</u> Various types of stairs Stair parts and terms <u>Perform</u> Calculate the rise-run ratio, number and size of risers and stairwell length <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				

15	1,2,3,4, 5,6	Lecture, lab	5	<i>Building project completion</i> Complete term project work and all practical activities			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				