

**STATE UNIVERSITY OF NEW YORK  
COLLEGE OF TECHNOLOGY  
CANTON, NEW YORK**



**MASTER SYLLABUS**

**COURSE NUMBER – COURSE NAME  
CONS 112 – Wood Structures**

**Created by: J. Reilly**

**Updated by: A. Reiter**

**Canino School of Engineering Technology**

**Department: Civil and environmental Technology**

**Semester/Year: Fall 2018**

A. TITLE: Wood Structures

B. COURSE NUMBER: CONS 112

C. CREDIT HOURS: (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

# Credit Hours: 3

# Lecture Hours: 2 per week

# Lab Hours: 3 per week

Other: per week

Course Length: 15 Weeks

D. WRITING INTENSIVE COURSE: Yes  No

E. GER CATEGORY: None:  Yes: GER  
*If course satisfies more than one:* GER

F. SEMESTER(S) OFFERED: Fall  Spring  Fall & Spring

G. COURSE DESCRIPTION:

The study of construction materials, practices, equipment and terminology used in buildings requiring wood framing. Lectures and laboratory periods develop theory and practice in layout and assembly of wood framing of floors, walls, roofs and trusses, and siding materials.

Construction of a 2-stall garage and/or small storage shed will serve as an application of wood framing and exterior finish fundamentals. Students will perform an individual research project with a written report. One or more field trips will be arranged.

H. PRE-REQUISITES: None  Yes  If yes, list below:

CO-REQUISITES: None  Yes  If yes, list below:

**I. STUDENT LEARNING OUTCOMES: (see key below)**

By the end of this course, the student will be able to:

<u>Course Student Learning Outcome</u> <u>[SLO]</u>	<u>Program Student Learning Outcome</u> <u>[PSLO]</u>	<u>GER</u> <i>[If Applicable]</i>	<u>ISLO &amp; SUBSETS</u>	
a. Demonstrate the development of an effective vocabulary of terms related to the trade			5-Ind, Prof, Disc, Know Skills 1-Comm Skills ISLO	Subsets O Subsets Subsets
b. Describe the production and important properties of lumber and wood products			5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
c. Describe the process and theory of residential framing and finish.			5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
d. Recognize and discuss options available in insulation, siding and roofing			1-Comm Skills 2-Crit Think ISLO	Subsets CA Subsets Subsets
e. Perform essential mathematical calculations associated with residential construction. Layout floor, wall, and roof plates in preparation for assembly			5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets
f. Employ hammer, drill, saws, square, and tape effectively in building a small wood structure.			5-Ind, Prof, Disc, Know Skills ISLO ISLO	Subsets Subsets Subsets Subsets

g. Acquire information on wood-framed light construction topics using the internet and well known industry journals and prepare well-written summaries			1-Comm Skills 1-Comm Skills 2-Crit Think	W O CA Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

<b>KEY</b>	<b><u>Institutional Student Learning Outcomes [ISLO 1 – 5]</u></b>
<b>ISLO #</b>	<b>ISLO &amp; Subsets</b>
<b>1</b>	<b>Communication Skills</b> Oral [O], Written [W]
<b>2</b>	<b>Critical Thinking</b> <i>Critical Analysis [CA] , Inquiry &amp; Analysis [IA] , Problem Solving [PS]</i>
<b>3</b>	<b>Foundational Skills</b> <i>Information Management [IM], Quantitative Lit./Reasoning [QTR]</i>
<b>4</b>	<b>Social Responsibility</b> <i>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</i>
<b>5</b>	<b>Industry, Professional, Discipline Specific Knowledge and Skills</b>

\*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes  No

If YES, select one or more of the following categories:

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Classroom/Lab | <input type="checkbox"/> Civic Engagement              |
| <input type="checkbox"/> Internship               | <input type="checkbox"/> Creative Works/Senior Project |
| <input type="checkbox"/> Clinical Placement       | <input type="checkbox"/> Research                      |
| <input type="checkbox"/> Practicum                | <input type="checkbox"/> Entrepreneurship              |
| <input type="checkbox"/> Service Learning         | (program, class, project)                              |
| <input type="checkbox"/> Community Service        |  |

K. **TEXTS:**

CARPENTRY, 4th Ed. Floyd Vogt, Delmar Publishing

L. **REFERENCES:**

The Journal of Light Construction (JLC)  
New York State Residential Building Code

M. **EQUIPMENT:** None  Needed: Taape measure and safety glasses

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

- Unit Tests and comprehensive final exam
- Class assignments
- Term project (written and oral)
- Lab Participation
- Field Trips

P. **DETAILED COURSE OUTLINE:**

I. Wood

1. Trees

a) Hardwood/Softwood

b) Growth

2. Lumber

a) Harvest to manufacture -

b) Sizes -

c) Classifications -

3. Wood Products -

a) Panel products -

b) Engineered Lumber products -

c) Pressure Treated lumber -

4. Fasteners

- II. **Light Frame Construction**
  - 1. **History**
  - 2. **Platform Frame v Balloon Frame**
  - 3. **Foundations - Overview**
  - a) **Footing and wall**
  - b) **Drainage**
  - c) **Slab on grade**
  - 4. **Building the Frame**
    - a) **The platform**
    - b) **The walls**
    - c) **The roof**

- III. **Exterior Finishes**
  - 1. **Roofing**
  - 2. **Windows**
  - 3. **Doors**
  - 4. **Siding**
  - 5. **Painting**
  - 6. **Finish Grading and Landscaping**

- IV. **Interior Finish (as time allows)**
  - 1. **Flooring**
  - 2. **Wall Finish**
  - 3. **Tile**
  - 4. **Stairway Design and Finish**
  - 5. **Kitchen Design**
  - 6. **Bath and Utility Areas**

Q. **LABORATORY OUTLINE:** None  Yes

The lab is divided into two categories: training and practical work. Lab exercises vary each year depending on the projects that have been arranged for students to build. Typically, students construct several storage buildings which offer different siding and roofing finishes.

**Training Labs**

- 1. **Introduction: Lab Safety & Unit Conversions**
- 2. **Equipment use - Build a Sawhorse**
- 3. **Stud wall layout instruction**
- 4. **Joist selection**
- 5. **Constructing a pattern rafter**
- 6. **Field Trips: Truss Manufacturer, Pressure treating facility, Lumber Mill**

Typical Building Construction Projects include storage building, garage or home addition

- 1. **platform**
- 2. **Layout wall plates, cut studs, build headers, assemble walls (2 weeks)**
- 3. **Erect walls, square/plumb structure**
- 4. **Cut rafters, assemble roof frame**
- 5. **Attach roof sheathing**
- 6. **Trim rafter tails, attach fascia, build fly rafters, place felt paper and drip edge**

**7. Shingle the roof**

**8. Vinyl siding**