

COURSE OUTLINE

ROOF FRAMING & EXTERIOR FINISHING

Course title

CT123

Dept. & Course No.

I. COURSE DESCRIPTION:

This course covers types of roofs, parts of a roof system, layout terms, rafter sizing and layout, and use of framing square. Roof framing principles and applications, gable hip and intersecting roof designs will be emphasized. It also includes selection and installation of sidings and roof materials, windows, exterior door, cornice work, and other exterior applications.

II. SEMESTER CREDITS: 3

III. CONTACT HOURS PER WEEK: 1 6 7 Lecture Lab Total

IV. PREREQUISITES: CT 112 & CT113

V. STUDENT LEARNING OUTCOME:

Upon completion of this course, students will be able, with 65% accuracy to:

1. Identify types of roofs, discuss their purposes and appearances.
2. Identify roof materials, name roof parts, and discuss their purposes.
3. Interpret roof framing plan and sketch working drawing.

VI. COURSE CONTENT

A. Types of roof

1. Gable
2. Hip
3. Hip & valley
4. Shed
5. Gambrel
6. Mansard
7. Dutch hip
8. Flat

B. Roof Framing

1. Roof parts
2. roof materials
3. Framing Principles

C. Drawing

1. Roof framing plan
2. Symbols
3. Specifications
4. Notes
5. Working drawing
6. Sketches

- | | |
|--|---|
| 4. Layout and cut to size roof framing members. | D. Layout & Cutting |
| | <ol style="list-style-type: none">1. Framing square2. square cutting3. Plumb cutting |
| 5. Construct truss, install roof framing members, and roofing. | E. Roof Construction |
| | <ol style="list-style-type: none">1. Truss assembly2. Transportation3. Set-up4. Erecting5. Bracing6. Roofing |
| 6. Identify and discuss different types of windows and doors. | F. Windows & doors |
| | <ol style="list-style-type: none">1. Window types2. Door types3. Hardware |
| 7. Layout, cut, and construct window and door frames. | G. Window & door frame |
| | <ol style="list-style-type: none">1. Header2. Jamb3. Sill |
| 8. Install doors and windows. | H. Installation |
| | <ol style="list-style-type: none">1. Hinges2. Door knobs3. Louver frames4. Louvers5. Sliding window/door6. Doors7. Hardware |
| 9. Identify and discuss different types of exterior finishing. | I. Exterior finishing |
| | <ol style="list-style-type: none">1. Panel2. Local wood3. Corrugated tin4. Plastering5. Surfacing |

10. Install exterior wall.

J. Method

1. Pre installation
2. Post installation

11. Construct and erect cornice.

K. Types of cornice

1. Boxed cornice
2. Vented cornice

12. Estimate roofing and roof framing materials, material cost, and labor cost.

L. Methods

1. Average base
2. Detail base

VII. MATERIALS AND EQUIPMENT:

1. Hand tools
2. Overhead projector
3. Transparencies
4. Shop equipments
5. Power tools
6. Hand outs
7. TV & VCR
8. Transportation
9. Required Materials

VIII. TEXT AND REFERENCES:

1. TEXT: Instructor's made hand outs
2. REFERENCES:
 - a. Wagner, Willis H. and Smith, Howard B. *Modern Carpentry*. South Holland, Ill: The Goodheart- Wilcox, 1996.
 - b. Curriculum and Instructional Materials Center. *Fundamentals of Carpentry*. Stillwater, OK: Oklahoma Department of Vocational and Technical Education, 1999.

IX. METHOD OF INSTRUCTION:

1. Lecture
2. Discussion
3. Demonstration
4. Laboratory work
5. Field trip (Site observation)

X. METHOD OF EVALUATION:

Lecture presentation is tested on written test. Lab evaluation is based on skill development and knowledge acquisition.

Four criteria is used in evaluating projects and operation performance are:

1. Accuracy
2. Techniques
3. Appearance
4. Completion

The components used in the computation of the final grade are:

1. Participation.....	25%
2. Quizzes/Homework.....	10%
3. Mid – Term and Final Test.....	25%
4. Projects.....	40%
Total.....	100%

The transmutation of percent to letter grade are:

90 – 100.....	A
80 – 89.....	B
70 – 79.....	C
65 – 69.....	D
0 – 64.....	F

TASK LISTING SHEET

CT 123 ROOF FRAMING & EXTERIOR FINISHING

Course No. & Title

CREDITS: 1 2 96
 Lecture Lab Total

Lab Hrs

TASK

TIME

SLO #1

3 hrs.

1. Through field trips, Sketch (3) three most common Types of roofs in Koror.

SLO #3

3 hrs.

1. Draw a complete working drawing sketch that includes all required specifications & notes.

SLO #4

10 hrs.

1. Layout rafter(common/hip) cut, bottom cord, braces, and post with Rafter square, and cut to size.

SLO #5

21 hrs.

1. Assemble Truss Parts, fasten as required, and prepare for transport.
2. Set-up job site scaffolding for truss installation
3. Transport truss to the site in the order of installation
4. Install trusses and braces as required.
5. Install purlin as shown in the working drawing and prepare for roofing.
6. Install roofing and ridge cap.

SLO #7

6 hrs

1. Calculate and layout 4' or 5' louver type window frame and Cut to size.
2. Calculate and layout ext. door frame and cut to size.
3. Assemble windows and doors frames squared and braced.

SLO #8**12 hrs.**

1. Install louver frame and louver glasses.
2. Install ext. door and door knobs.
3. Observe sliding door and window installation at local construction site, list the steps/techniques applied, and report to class.
4. Visit local hardware store and compile a list of available doors & windows hardware. Acquire copy installation manual for reference.

SLO #9**3 hrs.**

1. Visit several local construction sites that are installing ext. wall and identify the materials, observe the installation process, and report to class.

SLO #10**14 hrs.**

1. Install Exterior wall paneling using acx. Plywood using both pre/post installation method.

SLO #11**14 hrs.**

1. Complete cornice construction of the assigned project install ventilation as designed.

SLO #12**10 hrs.**

1. Estimate roof framing and roofing materials based on the drawing, acquire prices from several local hardware stores, compare prices and complete bill of materials.
2. Estimate labor cost using average based method and detail based method. Acquire prices from local construction firms and compare for reasonable and affordable rate to use.
3. Submit the total cost estimate plus markup rate.

TOTAL LAB HOURS: 96 hrs

**Course Level Achievement
Form A**
(Used for shop courses as well as other program courses)
CT 123 ROOF FRAMING & EXTERIOR FINISHING

Student's Name (print): _____
Instructor's Name (Print): _____

Semester/Year: _____

Directions: Evaluate the student using the rating scale below and encircle the appropriate number to indicate the degree of competency. The numerical ratings of 5, 4, 3, 2, and 1 are not intended to represent the traditional school grading system of A, B, C, D, and F. the descriptions opposite the numbers will determine the level of student performance for each of the competencies listed below.

- Rating Scale:**
- 5 Excellent
 - 4 Above average
 - 3 Average
 - 2 Below average
 - 1 Unacceptable

COMPETENCY	RATING
1. Interpret roof framing plan and exterior detail.	5 4 3 2 1
2. Select and installs roof frames.	5 4 3 2 1
3. Select and install roofing materials.	5 4 3 2 1
4. Select and install exterior wall sidings and cornice coverings.	5 4 3 2 1
5. Select and install exterior door and windows.	5 4 3 2 1
6. Apply exterior finishing.	5 4 3 2 1

I certify that the student has completed all the competencies in this program and has achieved ratings as shown under each respective competency.

Instructor's signature

Date

COMPETENCY # 1 Interpret roof framing plan and exterior detail.

5. Interpret, dimensions, material sizes and type, specifications, notes, and installation and finishing requirement provided in the roof framing plan and exterior detail drawing with 90 –100% accuracy.
4. Interpret, dimensions, material sizes and type, specifications, notes, and installation and finishing requirement provided in the roof framing plan and exterior detail drawing with 80 –89% accuracy.
3. Interpret, dimensions, material sizes and type, specifications, notes, and installation and finishing requirement provided in the roof framing plan and exterior detail drawing with 70 –79% accuracy.
2. Interpret, dimensions, material sizes and type, specifications, notes, and installation and finishing requirement provided in the roof framing plan and exterior detail drawing with 65 –69% accuracy.
1. Interpret, dimensions, material sizes and type, specifications, notes, and installation and finishing requirement provided in the roof framing plan and exterior detail drawing with below 65% accuracy.

COMPETENCY # 2 Select and installs roof frames.

5. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select install roof frames according to plan with 90-100% accuracy.
4. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select install roof frames according to plan with 80 – 89% accuracy.
3. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select install roof frames according to plan with 70 – 79% accuracy.
2. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select install roof frames according to plan with 65 – 69% accuracy.
1. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select install roof frames according to plan with below 65% accuracy.

COMPETENCY # 3 Select and install roofing materials.

5. Demonstrate required skills including roofing selection, roofing estimation, roofing measurement and layout, roofing preparation and set-up, and installation method to properly install roofing materials according to plan with 90 – 100% accuracy.
4. Demonstrate required skills including roofing selection, roofing estimation, roofing measurement and layout, roofing preparation and set-up, and installation methods to properly select and install roofing materials according to plan with 80 – 89% accuracy.

3. Demonstrate required skills including roofing selection, roofing estimation, roofing measurement and layout, roofing preparation and set-up, and installation method to properly install roofing materials according to plan with 70 – 79% accuracy.
2. Demonstrate required skills including roofing selection, roofing estimation, roofing measurement and layout, roofing preparation and set-up, and installation method to properly install roofing materials according to plan with 65 – 69% accuracy.
1. Demonstrate required skills including roofing selection, roofing estimation, roofing measurement and layout, roofing preparation and set-up, and installation method to properly install roofing materials according to plan with below 65% accuracy.

COMPETENCY # 4 Select and install exterior wall sidings and cornice coverings.

5. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select and install exterior wall sidings and cornice coverings according to plan with 90 – 100% accuracy.
4. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select and install exterior wall sidings and cornice coverings according to plan with 80 – 89% accuracy.
3. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select and install exterior wall sidings and cornice coverings according to plan with 70 – 79% accuracy.
2. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select and install exterior wall sidings and cornice coverings according to plan with 65 – 69% accuracy.
1. Demonstrate ability to perform all of the skills - materials identification and selection, layout, cutting, and fastening, set-up and installation - required to properly select and install exterior wall sidings and cornice coverings according to plan with below 65% accuracy.

COMPETENCY # 5 Select and install exterior door and windows.

5. Demonstrate ability to perform all of the skills - exterior doors and windows selections, hardware installations, door and window installation preparation and set-up, and installation - required to properly install exterior doors and windows according to plan with 90 – 100% accuracy.
4. Demonstrate ability to perform all of the skills - exterior doors and windows selections, hardware installations, door and window installation preparation and set-up, and installation - required to properly install exterior doors and windows according to plan with 80 – 89% accuracy.

3. Demonstrate ability to perform all of the skills - exterior doors and windows selections, hardware installations, door and window installation preparation and set-up, and installation - required to properly install exterior doors and windows according to plan with 70 – 79% accuracy.
2. Demonstrate ability to perform all of the skills - exterior doors and windows selections, hardware installations, door and window installation preparation and set-up, and installation - required to properly install exterior doors and windows according to plan with 65 – 69% accuracy.
1. Demonstrate ability to perform all of the skills - exterior doors and windows selections, hardware installations, door and window installation preparation and set-up, and installation - required to properly install exterior doors and windows according to plan with below 65% accuracy.

COMPETENCY # 6 Apply exterior finishing.

5. Demonstrate ability to perform all of the skills - exterior finishing materials and supplies selection, installation preparation and set-up, and installation and finishing – required to properly apply exterior finishing according to plan with 90 – 100% accuracy.
4. Demonstrate ability to perform all of the skills - exterior finishing materials and supplies selection, installation preparation and set-up, and installation and finishing – required to properly apply exterior finishing according to plan with 80 – 89% accuracy.
3. Demonstrate ability to perform all of the skills - exterior finishing materials and supplies selection, installation preparation and set-up, and installation and finishing – required to properly apply exterior finishing according to plan with 70 – 79% accuracy.
2. Demonstrate ability to perform all of the skills - exterior finishing materials and supplies selection, installation preparation and set-up, and installation and finishing – required to properly apply exterior finishing according to plan with 65 – 69% accuracy.
1. Demonstrate ability to perform all of the skills - exterior finishing materials and supplies selection, installation preparation and set-up, and installation and finishing – required to properly apply exterior finishing according to plan with below 65% accuracy.