

COURSE OUTLINE

CONSTRUCTION MANAGEMENT
COURSE TITLE

CT 212
DEPT. & COURSE NO.

I. COURSE DESCRIPTION

This course concentrates on the procedures and methods that are used by the construction contractor during the construction and post-construction phases of a project. Construction today involves much more than the physical erection of projects. It is essential for a contractor to systematically plan, organize, manage, control, and document jobsite activities.

II. SEMESTER CREDITS 3

III. CONTACT HOURS PER WEEK	<u> 3 </u>	<u> 0 </u>	<u> 3 </u>
	LECTURE	LAB	TOTAL

IV. PREREQUISITES: CT122, CT123, CT124 & BA 110

V. PERFORMANCE OBJECTIVES:

VI. COURSE CONTENT

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

1. Describe construction management environment

A. Construction Management

1. History
2. Industry cost effectiveness
3. Definitions
4. Goals
5. Philosophy
6. Planning, organizing, & control
7. Manager's job description
8. Project size

2. Explain bidding process and prepare proposals and contracts

B. Bids, Proposals, and Contracts

1. Construction execution approach
2. Contractor selection process
3. Developing construction proposals
4. Construction contracting
5. Contract negotiations
6. Contract technical terms
7. Contract commercial terms
8. Contract administration

3. Explain the terms and concepts of project planning and initiation

4. Practice, Compare, and evaluates selected method of construction scheduling

5. Practice selected methods of effective estimating, budgeting, and cost control

6. Describe and evaluate project organization

C. Project Planning and Initiation

1. Planning definitions
2. Planning philosophy
3. Types of planning
4. Planning questions
5. Master plan
6. Execution Formats
7. Contractor's role
8. Major field activities
9. Project initiation

D. Construction Scheduling

1. Scheduling approach
2. The owner's approach
3. Developing the construction schedule
4. Scheduling system
5. Basic network diagram
6. Logic diagram
7. System selection
8. Cost and schedule control

E. Estimating, Budgeting, and Cost Control

1. Cost estimating
2. Estimating methods
3. Estimating tools
4. Direct and indirect cost
5. Project budgeting
6. Budgeting escalation and contingency
7. Project cash flow plan

F. Project Organization

1. Overview
2. Structure
3. Organization chart
4. Project team
5. Mobilization
6. Procedures

7. Explain and evaluate the process of project control

- G. Project Control
1. Process
 2. Money plan
 3. Typical cost-control
 4. Material cost
 5. Cashflow control
 6. Schedule control
 7. Monitoring
 8. Equipment and material control
 9. Quality control
 10. Operating the control

8. Explain the step-by-step process of executing a construction project

- H. Construction Project Execution
1. Project execution
 2. Kickoff meeting
 3. Starting management program
 4. Implementing project organization
 5. Execution phase
 6. Interface
 7. Safety and security
 8. Completion phase
 9. Closeout procedures

9. Evaluate construction safety and health

- I. Safety and Health
1. How effective is the construction safety today?
 2. Who are the main players in construction safety?

10. Analyze human factors in construction management

- J. Human Factors
1. Qualities of a successful manager
 2. Human relations
 3. Leadership
 4. Common sense
 5. Keeping your cool
 6. Negotiating ability
 7. Patience
 8. Personal human factors

- VIII. Equipment and Materials
 - A. Computer
 - B. Transportation
 - C. Digital camera
 - D. Classroom Project materials

IX. Text and References:

- A. Text:
Ridge, George J. Total Construction Management. Burr Ridge, IL: McGraw-Hill, 1994.
- B. Reference:
Curriculum and Instructional Materials Center. Fundamentals of Construction: Industry Orientation. Stillwater, OK: Oklahoma Department of Vocational and Technical Education, 1999.

X. Methods of Instruction:

- A. Lecture
- B. Discussion
- C. Demonstration
- D. Laboratory
- E. Field trips

XI. Methods 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

Palau Community College
CT 212 Construction Management
Course Learning Outcomes

During the course experience, the course learning outcomes (CLOs) will be assessed through the use of signature assignments. A rating scale will be used to determine the students' proficiency level of each CLO using specifically aligned assignments. The numerical ratings of 3, 2, and 1 are not intended to represent the traditional school grading system of A, B, C, D, and F. The descriptions associated with each of the numbers focus on the level of student performance of each of the course learning outcomes listed below:

Rating Scale:

4	Exceeds Expectations
3	Meets Expectations
2	Developing
1	Below Expectations

CLO 1: Prepare a schedule for a proposal/bid for the construction of a house in Palau.

Numerical Value	
4	Prepare documents for invitations to bid, issue invitations, prepare proposals/bids, receive proposals/bids, closing off of proposals/bids, opening of proposals/bids, evaluation of proposals/bids, selection of contractor, contract negotiation/formation, contract awarded, project start with 85% - 100% accuracy.
3	Perform the task mention above with 75%-84% accuracy.
2	Perform the tasks mention above with 65%-74% accuracy.
1	Perform the tasks mention above with 0 – 64% accuracy

CLO 2: Develop a building construction schedule for a three bedroom house.

Numerical Value	
4	Determine scope of work of the project, determine project phases of a project, determine basic activities of each phase, determine human resources level, determine elapse time for activity, determine scheduling budget, determine sophistication of user organizations, select appropriate scheduling system, calculate early and late start date, calculate earliest completion time, and determine the critical path with 85% -100% accuracy.
3	Perform the task mention above with 75%-84% accuracy.
2	Perform the tasks mention above with 65%-74% accuracy.
1	Perform the tasks mention above with 0 – 64% accuracy

CLO 3: Prepare estimates for a three bedroom house.

Numerical Value	
4	Recognize the proper method of estimating for a given situation, prepare approximate estimate for a simple project, prepare outline for preparing detailed estimate, create labor and materials take off, price labor and materials, calculate cost, add others costs, and calculate total coast with 85%-100% accuracy.
3	Perform the task mention above with 75%-84% accuracy.
2	Perform the tasks mention above with 65%-74% accuracy.
1	Perform the tasks mention above with 0 – 64% accuracy

CLO 4: Assuming NDBP finance for the project, prepare contract documents for a three bedroom house.

Numerical Value	
4	Review and compile documents included in the contract documents, review standard NDBP construction contract clauses, review scope and phases of works, schedule, payment terms, change order procedure, quality control, guarantee and warranties, liabilities and insurance, and customize and complete standard NDBP construction contract document ready for signatures by owner and contractor with 85% -100% accuracy.
3	Perform the task mention above with 75%-84% accuracy.
2	Perform the tasks mention above with 65%-74% accuracy.
1	Perform the tasks mention above with 0 – 64% accuracy

CLO 5: Evaluate construction health and safety on a construction site.

Numerical Value	
4	Inspect and recognize potential hazards on a construction site, recognize potential hazards of inappropriate attire, recognize correct procedures for performing tasks (i.e. lifting and carrying), recognize correct use of hand and power tools, recognize correct use of personal protective equipment, recognize correct use and storage of hazardous materials, investigate on site first aid equipment, personnel and procedures, investigate on site accident log/records, and recommend procedures to eliminate or mitigate severity of recognized hazards with 85%-100% accuracy.
3	Perform the task mention above with 75%-84% accuracy.
2	Perform the tasks mention above with 65%-74% accuracy.
1	Perform the tasks mention above with 0 – 64% accuracy