



FORT LEONARD WOOD, MO
NONCOMMISSIONED OFFICERS ACADEMY
SYLLABUS FOR 12H30
ADVANCE LEADER COURSE



CONSTRUCTION EQUIPMENT SUPERVISOR

Purpose:

The 12N30 Horizontal Construction Engineer Course provides Noncommissioned Officers (NCOs) with a background MOS of 12N, 12G, and 12V the knowledge and technical skills required to supervise, inspect, plan horizontal construction projects, lead and train the Soldiers in their squads or sections, and assist in directing engineer missions.

Course Scope:

Students will demonstrate proficiency in Shared Engineer Training, Military Occupational Specialty (MOS) Specific Training, Mandatory Training, and a Situational Training Exercise (STX)

Course Prerequisites:

Soldiers who have successfully completed the Warrior Leader Course (WLC), and who have been promoted to skill level 3 or are eligible for promotion to skill level 3 and meet the requirements in table 10-62N-1 of DA PAM 611-21. Soldiers over 40 years of age must complete a medical screening at their local installation, then hand carry a copy of the medical screening report to the course chief of Engineer ALC.



CONSTRUCTION EQUIPMENT SUPERVISOR



Security Clearance: Unclassified

Course Length–Weeks: 7 **Days:** 1 **Hours:** 298

Class Sizes – **Optimum:** 32 **Min:** 16 **Max:** 32

Module: A / 001 73.5

Title: Shared Engineer Training

Module: B / 001 187.3

Title: MOS 12N30 Specific Training

Module: D / 001 72.0

Title: Situational Training Exercise (STX)

Module: E / 001 26.5

Title: Administrative



CONSTRUCTION EQUIPMENT SUPERVISOR



Module: A / 1

Title: Shared Engineer Training

Purpose: The purpose of this module is designed to provide the Noncommissioned Officer (NCO) with the knowledge and skills required to enhance survivability on the modern day battlefield. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

73.5

Security Clearance: Unclassified

Lesson Title: Urban Breaching Operations

References: FM 3-34.210 Explosives and Demolitions

Lesson Title: Conduct a Road Reconnaissance

References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct a Tunnel Reconnaissance

References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct a Ford Reconnaissance

References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct a Bridge Reconnaissance

References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct an Engineer Reconnaissance

References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct a Route Reconnaissance

References: FM 3-34.170 Engineer Reconnaissance



CONSTRUCTION EQUIPMENT SUPERVISOR



Lesson Title: Prepare a Route Reconnaissance Overlay
References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct a Ford Reconnaissance
References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Conduct a Bridge Reconnaissance
References: FM 3-34.170 Engineer Reconnaissance

Lesson Title: Counter Explosive Hazards
References: FM 3-34.210 Explosives and Demolitions

Lesson Title: Prepare for Improvised Explosive Device Threats Prior to Movement
References: FM 3-34.210 Explosives and Demolitions

Lesson Title: React to an Improvised Explosive Device (IED) Attack
References: FM 3-34.210 Explosives and Demolitions

Lesson Title: Organize a Booby Trap Search Team
References: FM 3-34.210 Explosives and Demolitions

Lesson Title: Organize Military Search Teams
References: FM 3-34.210 Explosives and Demolitions

Lesson Title: Supervise the Installation of a Traffic Control Point (TCP)
References: FM 3-24 Counterinsurgency

Lesson Title: Supervise the Installation of a Traffic Control Point (TCP)
References: FM 3-24 Counterinsurgency



CONSTRUCTION EQUIPMENT SUPERVISOR



Module: B01 / 1

Title: Interpret a Construction Print

Purpose: This module provides instruction on how to identify the types of construction drawings, the components in the format for construction drawings, the road plan station numbers and objects, the road profile elevations, and the cross-sectional cuts and fills. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

10.4

Security Clearance: Unclassified

Lesson Title: Interpret a Construction Print

References: FM 5-233, FM 5-430-00-1, FM 5-430-00-2, TM 5-581B, TM 5-704

Module: B03 / 1

Title: Select Construction Equipment and Production Techniques

Purpose: Select heavy construction equipment and production technique(s) for crane, crawler tractor, motorized scraper, motorized grader, and scoop loader operations. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

14.3

Security Clearance: Unclassified

Lesson Title: Select Construction Equipment and Production Techniques

References: FM 5-434 Earthmoving Operations



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Module: B05 / 1

Title: Direct Drainage Operations

Purpose: Utilize information from a site reconnaissance, identify existing and proposed drainage locations, direct the enhancement of existing construction site drainage, and direct the installation of construction site drainage. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

6.8

Lesson Title: Direct Drainage Operations

References: FM 5-410, FM 5-430-00-1, FM 5-434, TM 5-704

Module: B07 / 1

Title: Direct Soils Stabilization Operations

Purpose: This module provides instruction on how to determine the correct soil stabilization operations involving on and off-site blending including lime, cement, and fly ash stabilization techniques. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

11.2

Security Clearance: Unclassified

Lesson Title: Direct Soils Stabilization Operations

References: FM 5-410 and FM 5-434 Earthmoving Operations



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Module: B09 / 1

Title: Determine Construction Equipment Production Estimates

Purpose: This module provides instruction on how to calculate production estimates for the Crawler Tractor, Motorized Scraper, Motorized Grader, Scoop Loader, Compaction Equipment, and the Hydraulic Excavator. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

29.5

Security Clearance: Unclassified

Lesson Title: Determine Construction Equipment Production Estimates

References: FM 5-434 Earthmoving Operations

Module: B11 / 1

Title: Interpret a Critical Path Method (CPM)

Purpose: Interpret the logic diagram and early start schedule data without error. Calculate the total interfering and free float. The Module concludes with a written test.

Remarks: None

Hours

17.7

Security Clearance: Unclassified

Lesson Title: Interpret a Critical Path Method (CPM)

References: FM 5-412



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Module: B13 / 1

Title: Plan Surface Treatment Operations

Purpose: This module provides instruction on how to calculate a surface treatment production estimate to the nearest hundredth. The Module concludes with a written test.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

9.3

Security Clearance: Unclassified

Lesson Title: Plan Surface Treatment Operations

References: FM 5-436 and FM 5-434 Earthmoving Operations

Module: B17/ 1

Title: Employ Crane Safety

Purpose: This module provides instruction on how Determine the correct information on a critical lift form. The Module concludes with a written test.

Remarks: None

Hours

6.8

Security Clearance: Unclassified

Lesson Title: Employ Crane Safety

References: FM 5-125 and TM 5-3810-307-10



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Module: B15 / 1

Title: Operate Microsoft Project

Purpose: This module provides instruction on the basic capabilities of Microsoft Project.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

1

Security Clearance: Unclassified

Lesson Title: Operate Microsoft Project

References: Terramodel Manuals

Module: B16 / 1

Title: Integrate Theater Construction Management System (TCMS)

Purpose: This module provides instruction on how to use TCMS to prepare Microsoft Project documents in support of construction planning.

Remarks: None

Hours

1

Security Clearance: Unclassified

Lesson Title: Integrate Theater Construction Management System (TCMS)

References: TCMS student handout



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Module: B19 / 1

Title: Direct Equipment Operations Using the Laserplane Leveling System

Purpose: This module provides instruction on how to Direct the assembly of the LLS Transmitter, and Calibrate the LLS within ± 5 degrees, and Construction Equipment operations using the LLS.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

14.3

Security Clearance: Unclassified

Lesson Title: Direct Equipment Operations Using the Laserplane Leveling System

References: TM 5-6675-329-13&P, TM 5-6675-348-13&P and GTA 05-02-023

Module: D / 1

Title: Situational Training Exercise (STX)

Purpose: This module provides the students to incorporate everything they have learned throughout the course. In addition, it is the culminating event that allows for students to work on their tactical leadership skills to include their technical skills as well. The Module concludes with a performance evaluation on leadership in a tactical environment.

Remarks: None

Hours

72

Security Clearance: Unclassified



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Module: E / 1

Title: Administrative

Purpose: The purpose of this module is to get Soldiers in processed, settled in and making sure all required administrative documents are completed and all necessary references, training aids are issued to each student.

Remarks: None

Technique(s) of Delivery:

Small Group Instruction (SGI) (SG)

Hours

26.5

Security Clearance: Unclassified



CONSTRUCTION EQUIPMENT SUPERVISOR Written Examinations

Reconnaissance

Interpret a Construction Print

**Select Construction Equipment and
Production Techniques**

Direct Drainage Operations

Direct Soils Stabilization

**Construction Equipment Production
Estimates**

Interpret a Critical Path Method

Plan Surface Treatment Operations

Employ Crane Safety

Evaluations

APFT

PRT Instruction

Operational Environment Brief

Student Led Discussion

Oral Engineer History Brief

In Ranks Inspection

Garrison Leadership

Tactical Leadership

APA Essay

Memorandum for Record

Formal Memorandum