



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 Basic Leader Course (BLC), 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.



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**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



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**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

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**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



# CONSTRUCTION EQUIPMENT SUPERVISOR



**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



# CONSTRUCTION EQUIPMENT SUPERVISOR



**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



# CONSTRUCTION EQUIPMENT SUPERVISOR



**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





# CONSTRUCTION EQUIPMENT SUPERVISOR



**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



# CONSTRUCTION EQUIPMENT SUPERVISOR



**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  $\pm 5$  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



# CONSTRUCTION EQUIPMENT SUPERVISOR



**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**

**Operational Environment Brief**

**Student-Led Discussions**

**Leadership Skills**

**Contribution to Group Work**

**Research Ability**