

# MNG 104 - ENGINE SYSTEMS GRAPHICS

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## Learning How to Learn:

- Create and interpret technical drawings.
- Contrast the technical drawing to the actual installation.

## Course Description

The course will acquaint the student to the proper use of measuring systems and drafting equipment. The course will introduce the techniques used in the production of multi-view projection, orthographic representation, auxiliary views, section views, and dimensioning. The student will be familiar with the correct (ANSI) symbols used in piping, electrical, and fluid power schematics. The student will be exposed in the use of CAD to produce the listed topics. STCW.

## Credit Hours

3

## Contact Hours

3

## Lecture Hours

3

## Required Prerequisites

All prerequisites for all GLMA courses are satisfied by following the approved Course Sequence Guide and any deviation from this guide needs to be approved by the cadet's adviser.

## Corequisites

MNG 110

## Course Learning Outcomes

### Knowledge:

- Learn the demonstrate the use of drafting equipment.
- Identify alphabet of lines used in engineering drafting.
- Identify the basic elements of engineering drawings.
- Identify the basic elements of piping schematics.
- Identify the basic elements of electrical schematics.
- Identify the basic elements of fluid power schematics.
- Interpret orthographic projection and section views.
- Interpret pictorial drawings (isometric).

### Application:

- Construct drawings, diagrams, and schematics that represent shipboard systems and equipment.

### Integration:

- Use geometric construction to solve layout problems.
- Trace out engineering systems onboard a merchant vessel or the Training Ship State of Michigan.
- Demonstrate the use of computer software to produce drawings and schematics applicable to a merchant vessel engine room.

### Human Dimension:

- Visualize a three dimensional world that is rendered through two dimensional drawings.

### Caring - Civic Learning:

- Describe the connection between drawings and engineering systems that are critically important to ship safety and operation.