MDK 250 - STABILITY FOR THE ENGINEER

Course Description

Principles, terms, and procedures used in the determination of transverse, longitudinal, and damage stability of ships. Investigation of the physical laws affecting a floating body. Effects of cargo operation, free surface, fuel consumption, and flooding on vessel stability. Scrutiny of case studies involving both partial or total loss of stability. STCW.

Credit Hours

1

Contact Hours

1

Lecture Hours

1

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.

Course Learning Outcomes

Knowledge:

- Describe the basic concepts of stability.
- Solve vertical stability problems.
- Solve loading trim problems.
- Perform damaged ship calculations.
- Describe the fundamentals of watertight integrity.

Application:

- Perform stability calculations.
- Perform righting moment and righting arm calculations.
- Perform the calculation of metacentric height.

Integration:

- Complete an inclining experiment using the following: stability computers, stability tables, and practical stability and trim considerations.

Human Dimension:

- Interact with others as part of a shipboard team.
- View themselves as licensed officers with a responsibility to handle fuel.

Caring - Civic Learning:

- Describe the importance of handling fuel, and water in an ethical manner.
- Recognize the need to ensure watertight integrity for the safety of the vessel, its crew, and the marine environment.

Learning How to Learn:

- Demonstrate the STCW Code Knowledge, Understanding and Proficiencies (KUPs) Officer in Charge of an Engineering Watch: 11.1A.