

# MDK 242 - SHIP STABILITY

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## Course Description

A study of the principles of stability; righting moment and righting arm; calculation of metacentric height; inclining experiment; stability computers and tables; practical stability and trim considerations. 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.

## Course Learning Outcomes

### Knowledge:

- Describe the basics concepts of stability.
- Solve vertical stability problems.
- Solve loading trim problems.
- Perform damaged ship calculations.

### 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.
- See themselves as cargo officers as well as navigational professionals.

### Caring - Civic Learning:

- Recognize their ethical responsibilities as experts in all aspects of stability.
- Recognize the relationship between safely loading a vessel ensuring stability and maximizing the cargo capacity of a vessel.

### Learning How to Learn:

- Demonstrate the STCW Code Knowledge, Understanding and Proficiencies (KUPs) Officer in Charge of a Navigation Watch: 13.1, 13.2, 13.3.