

# STABILITY BY DISTANCE - ADVANCED DISTANCE LEARNING

Teaches the practical knowledge and application of a ship's stability. Provided as self-paced study.

Knowledge of a ship's stability is not a process of memorising and blindly applying formula, but of understanding the principle behind the formula and the process of what is actually happening to the vessel's righting and trimming levers as the vessel changes the distribution of weight or buoyancy within its hull. The golden rule throughout this course is therefore: Learn the principle not the formula. Once you understand the principle there will be no need to learn the formula as it will be engraved in your memory forever!

## ENTRY GUIDANCE

It is recommended that participants wishing to undertake Stability by Distance: Advanced have successfully completed [Stability by Distance: Basic](#), or hold a Certificate of Competency as Deck Watchkeeper or Mate/Master <500GT or equivalent, as a minimum.

## DURATION

This course is designed to be self-paced. Participants should aim to complete the course within 12 months of the enrolment date.

## COURSE AIM

The course covers the use of Simpson's Rules relating to a ship's stability, The Inclining Test, Stability Cross Curves, Radius of Gyration, Synchronous rolling and Parametric rolling, IMO Stability Criteria including Wind Heel, List and Large Angles of Stability, Grain Stability, Longitudinal Stability, Damage Stability, Dry Docking and other factors determining a loss of stability.

The purpose of this course is to teach the practical knowledge and application of a ship's stability. The aim is:

1. To provide an understanding as to how the hydrostatics particulars of a ship's hull are derived and to furnish participants with sufficient knowledge for them to calculate their own hydrostatic information should the need arise.
2. To provide some practical knowledge of stability for participants to use in their seagoing or related careers or when dealing with the operational considerations relating to the safety of ships.

## OUTCOME

Participants who satisfactorily complete the course will be issued with an Australian Maritime College Certificate in *Advanced Application of a Ship's Stability and Dynamics*.

## COVID-19 VACCINATION

AMC Search (AMCS) is operating a COVID-Safe campus aligned with the protocols and procedures established by the University of Tasmania. The safety and wellbeing of staff, students and the broader community is an absolute priority for the University of Tasmania.

We strongly encourage everyone to remain up to date with their COVID-19 vaccinations but



**DURATION:** Self-paced

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**COURSE DATES:**

Course Fee | Online | \$1,670

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no longer require our students to be vaccinated to come to our university campuses, facilities or events.

## PAYMENT OPTIONS

Payment methods accepted:

- Register now and pay later (payment required 15 days before the course starts)
- Credit Card (online or via (03) 6324-9850)
- Bank Deposit
- Company sponsorship.

Detailed payment options are available [here](#).

## REGISTRATION TERMS

Face to face courses

Cancellations up to 15 working days prior to the scheduled date will be accepted without penalty. Cancellations less than 15 working days will be subject to 100% cancellation fee.

AMC Search reserves the right to cancel the course 15 working days prior to the scheduled date if insufficient registrations are received. Any fees paid for cancelled courses will be refunded in full.

When making flight bookings please ensure you book on a fully refundable basis.

Online courses

Payment of course fees, or authorisation to invoice from your company, is required before access to the online learning environment is provided. Please note, it will take between 2-4 business days to provide your access to the online course if you have not studied previously with AMC Search, the Australian Maritime College or the University of Tasmania.

## COURSE STRUCTURE AND ASSESSMENT INFORMATION

The Stability by Distance Advanced Course consists of:

- One Basic Knowledge and Principles of Ship's Stability Workbook, broken into 16 Sections.
- Complimentary commentary and online resources through MyLO.
- Assessments including course progress exercises (30% of total grade) and 1 exam (70% of total grade). You must achieve a grade equal to or greater than 70% across all assessment items, and no less than 50% in the progress exercises, to successfully complete the course. You have 12 months to complete the course.

On successfully completing this course you will:

- Be proficient in the use of Simpson's Rules to find areas and volumes within the ship shape and understand how Hydrostatic Data is compiled, including 1st Moment of Areas and volumes and how this information of the ship's underwater form is incorporated.
- Understand how the value of BM changes with differing hull shapes and varying drafts and how the metacentre moves as the vessel heels.
- Know how to conduct an inclining test and calculate the ship's Centre of Gravity.
- Understand Dynamic Stability, methods of calculating a ship's negative righting levers and required corrections.
- Understand how to interpret IMO stability criteria, how to present simplified stability data and how to identify Synchronous Rolling.
- Be familiar with calculating a large angle of list and be able to realise the dangers that result from a reduction of Righting Levers when the ship's Centre of Gravity moves to one side of the centre line.
- Understand the limitations placed on a vessel due to heel caused by wind, together with knowledge of heel caused by a ship turning at speed.
- Improved understanding of the effect on a ship's stability caused by the free surface of a liquid or movement of grain cargo.

- Be able to calculate the 2nd Moment of Area to determine the transverse and longitudinal values of a ship's BM and the Free Surface Moments on a non-rectangular tank.
- Be able to determine a vessel's trim in any water density and the drafts of the vessel at any point along the hull. Including weights to load or discharge to achieve the required trim.
- Understand the effect on the vessel when a compartment becomes bilged and know how to determine the loss of stability and increase of draft for a vessel in a damaged condition.
- Understand how a ship can become unstable when the hull is removed from the water during a dry-docking procedure or during a grounding situation.
- Understand the ship's hydrostatic data should be treated with caution when the ship finds its self in extreme conditions regarding trim and sea state.