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Title: PROFESSIONAL COMPETENCE 1
Status: Definitive
Code: **6103NAU** (128071)
Version Start Date: 01-08-2021

Owning School/Faculty: Engineering
Teaching School/Faculty: Engineering

Team	Leader
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Academic Level: FHEQ6 **Credit Value:** 20 **Total Delivered Hours:** 122
Total Learning Hours: 200 **Private Study:** 78

Delivery Options

Course typically offered: Semester 1

Component	Contact Hours
Lecture	100
Tutorial	20

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Report	AS1	2000 word report	40	
Exam	AS2	Stability Exam	60	2

Aims

To evaluate current academic programmes supporting seafarer training and to prepare students for higher professional Stability qualification.

Learning Outcomes

After completing the module the student should be able to:

- 1 Evaluate academic structures associated with maritime training
- 2 Discuss the national and international standards for seafarer training
- 3 Assess the transverse stability of a vessel
- 4 Assess the longitudinal stability of a vessel

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Report	1	2
Exam	3	4

Outline Syllabus

The students will be able to demonstrate a knowledge of the theories and factors affecting stability at moderate and large angles of heel, as applicable to merchant ship management.

- *Stability information carried on board ship. The inclining experiment.*
- *Application of 'Free Surface Effect'*
- *The effect on vessel's centre of gravity of loading, discharging, weights. Final list. Requirements to bring vessel upright*
- *Curves of righting levers (GZ), using real ship stability information. Determine compliance with 'Intact Stability' requirements of the current loadline regulations*
- *Simplified Stability. Using real ship stability information*
- *Angle of loll and effective GM at angle of loll*
- *Factors affecting a curve of righting levers (GZ)*
- *The effect on the curve of righting levers (GZ) of shift of cargo and wind heeling moments*
- *Use of the current IMO Grain Rules to determine if the vessel complies with the specified stability criteria. Real ship stability information to be used*
- *Stability during drydocking. Using real ship stability information.*
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- *Increase in draught due to list / heel. Angle of heel when turning.*
- *The effect of loading, discharging, shifting weights on trim, draught and stability. Using real ship stability information.*
- *Draught survey*
- *Rolling, pitching, parametric and synchronous rolling*
- *The effect of damage and flooding on stability*
- *Damage stability requirements for passenger vessels and Type A and B vessels*
- *Loadline terminology and definitions for new builds*
- *Conditions of assignment of loadlines*

- *Assignment of special loadlines e.g. 'timber loadlines'*
 - *Requirements and Codes relating to the stability of specialised vessels*
 - *The preparations required for surveys*
- *Legislative Requirements*
understanding of load line marks, entries and reports in respect of freeboard, draft and allowances;

Loading and Unloading of Cargoes

knowledge of the effect on trim and stability, of cargoes and cargo operations on board the vessel concerned

use of stability and trim information, use of stress-calculating equipment, knowledge of loading cargoes and ballasting with respect to stability and hull stress

Seaworthiness of the Ship

preparations for sea prior to sailing with respect to watertight integrity and additional precautions to be taken before the onset of heavy weather

practical knowledge of the particular loadline items affecting seaworthiness

action in event of cargo shift, damage to hull or hatches, loss of cargo overboard or ingress of water into hull

Legislative Requirements

understanding of load line marks, entries and reports in respect of freeboard, draft and allowances

Preparation for MCA oral examination

Training programmes for seagoing personnel and their compliance with national and international requirements.

STCW requirements and potential for change.

MCA and MNTB role in the development of programmes.

Research projects developing future skills requirements and meeting of UK 2050 needs.

Levels of recruitment and correct academic levels for seafarer training.

Learning Activities

Lectures, and tutorials.

Notes

This module is aimed at students progressing to the MCA Chief Mate STCW II/2 CoC and will include preparation for externally set professional examinations.