

Proposal to modernise the Methodology of Teaching, Assessment/ Examination

Marine Engineering - STCW III/2 CoC			
Competency/ Module: Marine Engineering: Ship Construction and Survey (Management Level)			
Knowledge, understanding and proficiency	Recommendation of working group regarding the outcome and objective.	Rationale	Action required
Outcome1: Analyse flood protection and seaworthiness for different vessel types	Keep	Relevant	None
1.1Freeboards for different vessel types subdivisions and damage stability elements for different vessel types	Keep	Relevant	None
1.2 Subdivisions and damage stability elements for different vessel types	Keep	Relevant	None

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1.3 Structural watertight components and the open deck drainage arrangements for different vessel types	Modernise	We must provide seafarers with a contextualised understanding of the Human Element in the maritime industry, showing how they can put theory into practice in the work they carry out at sea.	Include an understanding of such components as part of a larger system (human-equipment-environment). E.g. You can put all the right equipment there, but if operated incorrectly accidents still happen. Include the risks associated with power operated sliding doors. Include the risks of maintenance operations on watertight bulkheads, including involvement of class and calculations. Include the impact of a loss of vessel buoyancy and stability in the case of watertight doors being left open or leaking during water ingress or internal flooding. The Herald of Free enterprise as a case study.
1.4 Testing for water tightness of doors, hatches, and bulkheads	Keep	Relevant	None
1.5 Drainage system for different ship's spaces and vessels	Keep	Relevant	None
1.6 Methods of roll stabilisation	Keep	Relevant	None
Outcome 2: Analyse ship's structure with reference to fire protection, vibration and noise for different Merchant Navy vessels	Keep	Relevant	None

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2.1 Structural fire protection arrangements	Contextualise	It is important to make sure Cadets clearly understand how the outcome relates to work at sea and it is essential to make sure that this context is given with reference to current and future seagoing technologies and practices.	Include the risks associated with maintenance of these structural arrangements.
2.2 Construction requirements of fire class bulkheads	Keep	Relevant	None
2.3 Sources of vibration within a vessel	Keep	Relevant	None
2.4 Effects of vibration	Modernise	We must provide seafarers with a contextualised understanding of the Human Element in the maritime industry, showing how they can put theory into practice in the work they carry out at sea.	Include the regulations that dictate the levels. Explain why these have been set out, reference COSWP.
2.5 Methods of vibration reduction	Keep	Relevant	None
2.6 Source of noise and its transmission throughout a vessel	Modernise	We must provide seafarers with a contextualised understanding of the Human Element in the maritime industry, showing how they can put theory into practice in the work they carry out at sea.	Include the regulations that dictate the levels. Explain why these have been set out, reference COSWP.
2.7 Reduction of noise transmission	Keep	Relevant	None
Outcome 3: Evaluate load line and dry-docking surveys for Merchant Navy vessels	Contextualise.	It is important to make sure Cadets clearly understand how the outcome relates to work at sea and it is essential to make sure that this context is given with reference to current and future seagoing technologies and practices.	Ensure context provided to understand how the Engineering department is involved in surveys. Involve the Engineering department in the process rather than the Deck department dictating the process.

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3.1 Assignment of freeboard (load line survey)	Keep	Relevant	None
3.2 Factors required to maintain conditions of assignment	Keep	Relevant	None
3.3 Information required for tonnage measurement and the tonnage certificate	Keep	Relevant	None
3.4 Load line survey and analyse and compare dry-docking surveys	Keep	Relevant	None
3.5 The procedure for survey by a Classification Society and Dry-docking	Keep	Relevant	None
Proposal submitted by:	Any other outcomes for this competency, above and beyond STCW which would be needed due to use of modern technology and impact of future fuels onboard:		
	Objective	Reason Why	Action required
Cadet Training & Modernisation Working Group	Include Human Element Factors throughout the syllabus	To provide seafarers with a contextualised understanding of the Human Element in the maritime industry, showing how they can put theory into practice in the work they carry out at sea.	Raise awareness throughout the Cadet's training of the areas in which human element factors will have an impact. Recommendations on where this can be included have been noted throughout the entire syllabus. Not every template has Human Element Factor recommendations but please do add any you feel may have been missed.
Cadet Training & Modernisation Working Group	Include Data Science skills throughout the syllabus	Data Science Skills (Comprehension, Analysis, Presentation, etc...) are already required within much of the syllabus. A further, specific focus on	A specific topic will need to be introduced to improve Cadets' Data Science skills. Practical application of data science skills should be highlighted throughout the syllabus. Not every template has Data

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		these skills needs to be taught where relevant.	Science recommendations but please do add any you feel may have been missed.
Cadet Training & Modernisation Working Group	Ensure all outcomes are contextualised to help Cadets understand what they are learning in relation to what they will experience at sea.	While some outcomes are intrinsically linked to work carried out at sea, some need to be contextualised to show how they apply to work on board. Where this is the case, it is important to make sure Cadets clearly understand how the outcome relates to work at sea and it is essential to make sure that this context is given with reference to current and future seagoing technologies and practices.	Where outcomes do not specifically cover a topic which relates to work carried out at sea, more must be done to contextualise the outcome and make it relevant to the maritime industry, giving specific shipping examples of how the outcome may be applied in a modern shipping context. Not every template has contextualisation recommendations but please do add any you feel may have been missed.