

Proposal to modernise the Methodology of Teaching, Assessment/ Examination

Marine Engineering - STCW III/2 CoC			
Competency/ Module: Mechanics (Management Level)			
Knowledge, understanding and proficiency	Recommendation of working group regarding the outcome and objective.	Rationale	Action required
Outcome1 Explain and solve problems relating to centripetal and centrifugal forces involving clutches and governors	Keep	Relevant	None
1.1 Centripetal and centrifugal force	Keep	Relevant	None
1.2 Clutches	Keep	Relevant	None
1.3 Balancing of rotating masses	Keep	Relevant	None
1.4 Governors	Keep	Relevant	None
Outcome 2: Explain and solve problems relating to moments of area and mass	Keep	Relevant	None
2.1 Moments of mass	Keep	Relevant	None
2.2 Moments of area	Keep	Relevant	None
2.3 Centroid of laminas made up of basic shapes	Keep	Relevant	None
Outcome 3: Explain and solve problems relating to forces in engineering frameworks	Keep	Relevant	None

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3.1 Stable, unstable, and neutral equilibrium	Keep	Relevant	None
3.2 Struts and ties	Keep	Relevant	None
3.3 Pin Joints	Keep	Relevant	None
3.4 Reaction forces	Keep	Relevant	None
3.5 Bows Notation	Keep	Relevant	None
Outcome 4: Explain and solve problems relating to the stability of axially loaded columns and stresses found within thin cylinders	Keep	Relevant	None
4.1 Hoop and longitudinal stress in thin cylinders	Keep	Relevant	None
4.2 Direct and shear stress on oblique seams of thin cylinder	Keep	Relevant	None
4.3 Axially loaded columns	Keep	Relevant	None
4.4 Buckling and slenderness ratio	Keep	Relevant	None
4.5 Euler formula	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

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			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 these skills needs to be taught where relevant.	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 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.