Proposal to modernise the Methodology of Teaching, Assessment/ Examination

Nautical - STCW II/2 CoC			
Competency/ Module: Marine Engineering Systems			
Knowledge, understanding and proficiency	**Recommendation of working group regarding the outcome and objective.**	**Rationale**	**Action required**
Outcome 1: Describe the operating principles of marine power plants.	**Keep**	**Relevant**	**None**
1.1 Operating principles of power plants	Keep	Relevant	None
1.2 Factors affecting fuel consumption and accurately perform fuel calculations.	Modernise	This outcome should be modernised to include alternate fuels and dual fuel systems, as used onboard.	Include the factors affecting fuel consumption when using alternate fuels and dual fuel systems.
1.3 Power source and storage (Battery technology) Safety and efficiency	Add	This outcome should be included to reflect current and modern practices onboard.	Add this outcome.
Outcome 2: Describe the function and operation of a vessel's auxiliary machinery	**Contextualise**	**This module should include relevant auxiliary machinery used on current, modern vessels.**	**Include auxiliary machinery currently in use on board modern vessels.**
2.1 Function and operational limitations	Keep	Relevant	None
2.2 Awareness of the relevant regulations	Contextualise	These regulations should be put into the context of how they currently impact day to day operations onboard and how they will impact further in the future.	Include examples of where these regulations impact use of auxiliary machinery onboard.
2.3 Steering and manoeuvring systems	Keep	Relevant	None

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Outcome 3: Define engineering terms and describe the concepts of control systems.	**Modernise**	**We must include modern and future technologies in this outcome to ensure they are understood from the perspective of a Deck Officer.**	**Include energy management systems and reduction of emissions plus green technology** **Include upcoming requirements for engineering control systems.**
3.1 Marine engineering terms	Keep	Relevant	None
3.2 Operation of vessel monitoring and control systems.	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 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	While some outcomes are intrinsically linked to work carried out at sea,	Where outcomes do not specifically cover a topic which relates to work carried out

	Cadets understand what they are learning in relation to what they will experience 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.	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.