

# Proposal to modernise the Methodology of Teaching, Assessment/ Examination

ETO - STCW III/6 COC	Name of respondent, organisation, and role:		
Competency/ Module: Electrical Safety			
Knowledge, understanding and proficiency	Recommendation of working group regarding the outcome and objective.	Rationale	Action required
Outcome1: Explain the features of an operational plan for safe working on electrical systems	Keep	Relevant	None
1.1 Dangers of electricity Concepts of Hazard and Risk	Keep	Relevant	None
1.2 Concepts of Hazard and Risk	Keep	Relevant	None
1.3 Features of a Risk Assessment	Keep	Relevant	None
1.4 Awareness of the Responsibilities of personnel under the provision of the Health and Safety at Work etc. Act 1974 and the Electricity at Work Regulations	Modernise	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.	Provide more maritime context to this sub-outcome, referencing COSWOP.
1.5 Awareness of the need for safe isolation procedures	Keep	Relevant	None
1.6 Appreciation of the need for safe working practices	Keep	Relevant	None
1.7 Features of a typical Operational Plan for safe working on an electrical system	Keep	Relevant	None

## Proposal to modernise the Methodology of Teaching, Assessment/ Examination

<b>Outcome 2: Explain the features of electrical distribution and the need for protection and isolation for safe working on 'dead' systems</b>	Keep	Relevant	None
2.1 Distribution system including control equipment, overcurrent protection devices, isolation and switching equipment	Keep	Relevant	None
2.2 Earthing and the earth fault loop path	Keep	Relevant	None
2.3 The use of residual current devices for protection and isolation of the system	Keep	Relevant	None
2.4 Documentation and plans of relevant distribution network	Keep	Relevant	None
2.5 Features of safe isolation and 'Locking Off' procedures	Keep	Relevant	None
2.6 The use of warning notices for 'isolated' and 'non-isolated' sections of the system	Keep	Relevant	None
2.7 The use of test and proving instruments	Keep	Relevant	None
<b>Outcome 3: Demonstrate the features of a permit-to-work system</b>	Keep	Relevant	None
3.1 Purpose of a permit-work system Activities requiring permit-to-work systems of work	Keep	Relevant	None

## Proposal to modernise the Methodology of Teaching, Assessment/ Examination

3.2 Identification of dangers associated with working on high voltage systems. Identification of isolation and earthing points	Keep	Relevant	None
3.3 Safe isolation, proving dead, and earthing procedures	Keep	Relevant	None
3.4 Identification of precautions to minimise risk due to specific work activities	Keep	Relevant	None
3.5 Permit-to-work documentation	Keep	Relevant	None
3.6 Permit-to-work issuing and cancelling procedures	Keep	Relevant	None
<b>Outcome 4: Explain high voltage at operational level in marine electrical practice</b>	Add	This outcome is already included in the Marine Engineering Module “7a. Electro-Technology” and should be included in this module as well.	Add Outcome 4 to this module.
4.1 High voltage marine generators and systems	Add	See Outcome 4 rationale.	See Outcome 4 action.
4.2 High voltage protection devices and circuit protection	Add	See Outcome 4 rationale.	See Outcome 4 action.
4.3 Insulated and earthed neutral distribution systems and earthing requirements	Add	See Outcome 4 rationale.	See Outcome 4 action.
4.4 Safety requirements necessary for HV installations	Add	See Outcome 4 rationale.	See Outcome 4 action.
4.5 Safe working practice and permit to work	Add	See Outcome 4 rationale.	See Outcome 4 action.
<b>Proposal submitted by:</b>	<b>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:</b>		
	<b>Objective</b>	<b>Reason Why</b>	<b>Action required</b>

## Proposal to modernise the Methodology of Teaching, Assessment/ Examination

<p>Cadet Training &amp; Modernisation Working Group</p>	<p>Ensure all outcomes are contextualised to help Cadets understand what they are learning in relation to what they will experience at sea.</p>	<p>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.</p>	<p>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.</p>
<p>Cadet Training &amp; Modernisation Working Group</p>	<p>Include Human Element Factors throughout the syllabus</p>	<p>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.</p>	<p>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.</p>
<p>Cadet Training &amp; Modernisation Working Group</p>	<p>Include Data Science skills throughout the syllabus</p>	<p>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.</p>	<p>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.</p>