

Guidelines in Developing Detailed Teaching Syllabus (DTS)

Purpose of a syllabus

The syllabus as a contract: A syllabus should make the rules for the course clear. It should set forth what is expected to happen during the semester, delineate the responsibilities of students and of the instructor, and describe appropriate procedures and course policies.

The syllabus as a permanent record: A syllabus should serve accountability and documentation functions. It should document what was covered in a course, at what level, and for what kind of credit. Such a syllabus contains information useful for evaluation of instructors, courses, and programs, and can thus be useful in course equivalency transfer situations, accreditation procedures, and articulation.

The syllabus as a learning tool: A syllabus should help students become more effective learners in the course. Thus should include ways to contact and communicate with the instructor, resource available in the campus, hints etcetera.

Definition of Terms

For purposes of this guidelines, the following terms are defined:

Syllabus is the Latin for “list”; believe to be originally from the Greek “sittybos” which is a parchment label that gave the title and contents of a document. Today it’s a mandatory document in higher education that serves as a contract between the Instructor and students enrolled in his class.

According to Parkes & Harris (2002), there are three major purposes that a syllabus should serve;
As a contract, a permanent record, and a learning tool

Teaching Facilities refers to where the teaching and learning activities are held such as classroom, swimming pool, workshop, etc.

Equipment refers to the hardware to be used for the delivery of the course including testing equipment, simulation equipment, dummy, etc. It is mandated the equipment and other equipment enumerated in the TLA.

Teaching Aids refers to the software / teaching and learning materials to be used in the delivery of the course such as computer generated slides, exercise sheets, posters, diagrams, charts, and others.

Textbook and References refers to the mandated publications to be used such as IMDG CODE, STCW, and others; textbooks and references used by developer and instructors; and other equivalent textbook and references.

Instructions:

MHEIs are required to develop their own Detailed Teaching Syllabus per course using the template below. It should be noted that the DTS has two (2) major components: I.) Course Information; and II.) Teaching and Learning Activities. The Course Information is the Part I of the DTS template and is specific to each Instructor. While Part II details the timetable, learning activities and other elements and is referred to as the Teaching and Learning Activities. The reason why they are separated is because the MHEI may opt to have the Part II standardized for all faculty members teaching the course in terms of outline and smaller learning (enabling) outcomes.

Prepare the DTS by following the guidelines written in RED preferably font 12 Arial.

<p style="text-align: center;">COLLEGE OF MARITIME COURSES BACHELOR OF SCIENCE IN MARINE ENGINEERING</p>			
<p style="text-align: center;">PART D: DETAILED TEACHING SYLLABUS</p>			
<p>Course Code / Descriptive Title : Aux Mach 2 / AUXILIARY MACHINERY 2</p>			
<p>STCW'7 Competence : A-III/1.F1.C4 Operate main and auxiliary machinery and associated control system A-III/2.F1.C2 Plan and schedule operation A-III/2.F1.C3 Operation, surveillance, performance assessment and maintaining safety of propulsion plant and auxiliary machineries</p>			
<p>Credit Units : 5 Lecture Hour(s): 4 Laboratory Hour(s): 3 Pre-requisite(s): Auxiliary Machinery 1</p>			
<p>Course Description: (State brief description of the course)</p> <p>Course Outcomes: At the end of the course, students should be able to:</p>			
<p>Prepared by:</p>	<p>Reviewed/Validated by: <i>Construct of DTS will be checked in terms of contents, format, English words used, and contents of course specifications</i></p>	<p>Approved by: <i>For implementation (person of authority of the MHEI)</i></p>	<p>Date of Effectivity:</p>

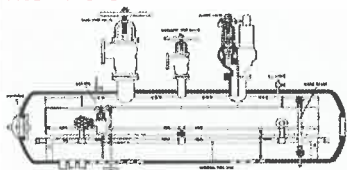

REVISION HISTORY



REV.NO.	DATE	REVISION DETAILS	
		FROM	TO

I. Course Information

Document	Part I: Detailed Teaching Syllabus (DTS)
Course Code	Encode here the Course Code as found in the latest Policies Standard and Guidelines published by CHED-MARINA Example: Aux Mach 1
Course Descriptive Title	Encode here the Course Descriptive Title as found in the latest Policies Standard and Guidelines published by CHED-MARINA Example: Auxiliary Machinery 1 - Lecture
Course Credit & Hours	Encode here the Course Credit and Contact Hours as found in the latest Policies Standard and Guidelines published by CHED-MARINA, or as approved by CHED (for MHEI who submitted amended curriculum) Example: 3 units – 54 contact hours
Description and coverage	<p>Encode here course information i.e. description and coverage including program outcomes as per latest PSG address by the course.</p> <p>The first paragraph should identify the course spiral nomenclature in terms of Fundamental (underpinning), Introductory, Enabling, Demonstrative and or Capstone course. Also include here are the other courses that addresses the same KUP's to acquire the Competence.</p> <p>Example:</p> <p>This is an introductory course on pumps and fluid transfer competence; building on Pascal, Bernoulli and other physical laws, the learner progresses to affinity laws including but not limited to Darcy-Weisbach equation to calculate pressure loss, pump performance and power. Dynamic and positive displacement pump operation principles, net positive suction head (NPSH), NPSH Required and available are the main focus as well as interpretation of the pump performance curve. As a minimum the learner must be capable of solving college algebra equations but he will be more capable with calculus.</p> <p>The physical elements of the pumps as well as monitoring aspect and mechanical drive are address by enabling courses; the acquired competence is demonstrated in Engineering</p>

	Systems or in Maintenance and Repair and Watch-keeping. The course partly addresses elements of Program Outcomes 10.1 b.d., 10.2.a.c.d, 10.3.2., and 10.4.a.
Program Outcomes addressed	Encode here Program Outcomes tackled in the course
STCW Competence Address by the course	Encode here the STCW Competence address by the course Example: A-III/1. F1.C4 Operate main and auxiliary machinery and associated control systems
STCW KUP Address by the course	Encode here the STCW Competence KUP address by the course Example: KUP1.6: Basic construction and operation principles of machinery systems namely (.a) various pumps(.b)compressor
Course Outcomes	Encode here the course outcomes as prescribed under PSG as published by CHED-MARINA or the CHED approved Course Outcomes for MHEI who modified their curriculum. Example: At the end of the course, the student will be able to; Explain the basic construction and operation principles of (.a) various pumps, (.b) air compressor Solve head, volumetric flow rate, shaft speed and power of pumps using affinity equations. Calculate head losses for a given specifications.
References	Encode here the titles of the reference material align or assign to the course, under CMO 40 a minimum of 5 current references per course is required. Example: STCW Convention of 1978 as amended Pump System Analysis and Sizing, 5th Edition Pump Characteristics and Applications 3rd Edition Alfa Laval Pump Handbook 2nd Edition Sulzer Centrifugal Pump Handbook 3rd Edition
Instructional Materials Handouts	Encode here the materials and handouts that will be used in the course delivery. Example: Syllabus (for distribution at the beginning of the course)

Videos (if any)	<p>Pump curve Exercise sheets Power point presentations Video of various pumps in operation</p>
Facility & Equipment	<p>Encode here the facility (other than the regular classroom) and equipment that may be used in course delivery. Example: Audio Visual room Define facility and equipment required when online and face-to-face</p>
<p>Teaching and Learning Activities Discuss how the instructor intends to teach the course or how the learner will acquire KSA elements within the course</p>	<p>Encode here how the instructor intends to teach the course or how the learner will acquire knowledge, skill and attitude (KSA) elements within the course. Note that the entry here depends on individual instructor teaching style, thus differ from instructor to instructor.</p> <p>Example: The constructive approach or forcing the student to think towards - Eureka moment will be the main modality of course delivery, in this approach the instructor make sure that the learner have the tools needed to “construct” the Knowledge, Skill and Attitude (KSA) or Competence addressed by the course.</p> <p>Acquisition of knowledge: Constructed as consequence of critical thinking EXAMPLE of Constructive delivery The picture shown is that of a marine boiler manhole cover; note the oblong shape of the manhole.</p> <div style="display: flex; justify-content: space-around; align-items: center;">   </div>

	 <p>Without further explanation, the teacher will now ask; Explain why the manhole shape is oblong and not round or any other geometric shape? To solve the problem, the learner should possess knowledge of geometric objects, learned at kindergarten</p>  <p>This child is therefore equipped to solve the above problem</p>
Assessment	<p>Encode here the rules on course assessment, taking into consideration the alignment with the student handbook as published by the institution. Example: 100% of all outcomes are assess Course Outcomes (summative) via authentic assessment Formative, as appropriate</p>
Resit	<p>Encode here the rules on RESIT for those who failed an assessment, taking into consideration</p>

(Retaking a failed summative examination)	<p>the alignment with the student handbook as published by the institution.</p> <p>Example:</p> <p>Failure in summative: 2 resit allowed</p> <p>Without remediation</p> <p>With remediation</p> <p>Failure in formative assessment: no resit</p> <p>After summative re-assessment, student grade regardless of score is minimum to pass (3)</p> <p>Failing the 2nd resit means failing the course (5)</p>
Grading	<p>Encode here the rules on grading showing how the Instructor arrives at a particular grade via calculation of important elements in the course, taking into consideration the alignment with the student handbook as published by the institution and CMO 40 on grading.</p> <p>Example:</p> <p>Course Outcomes (summative) 60%</p> <p>Assignment (if any) 10%</p> <p>Recitation (15%)</p> <p>Formative written assessment (15%)</p> <p>Passing grade 70%</p> <p>Must pass all Course Outcomes to pass the course</p> <p>Outcomes of thorough knowledge requires 80% to pass</p> <p>A critical procedure requires 100% to pass e.g. enumerate the procedures for assembling the pump.</p>
Course Requirements	
Assignments and Deadlines	<p>Encode here the rules on assignments, taking into consideration the alignment with the student handbook as published by the institution.</p> <p>Example:</p> <p>Students may be given advance reading and or assignment; I.e. class will start with formative assessment either via quizzes or recitation. Deadline of assignment submission will be</p>

	announced as appropriate.
Paper submission specifications	<p>Encode here the rules on paper submissions, taking into consideration the alignment with the student handbook as published by the institution.</p> <p>Example:</p> <p>Essays must be submitted in</p> <p>Paper and size A4 size,</p> <p>Font Calibri 12</p> <p>Double space</p> <p>Pagination and margins</p> <p>Intellectual property or citation requirements</p>
Semester Offered	<p>Encode here the semester when the Course is offered as per approved Program of Study</p> <p>Example: 2nd Semester AY 2021-2022</p>
Instructor's Name	<p>Encode here the name of the Instructor teaching the course, if the course is taught by several instructors, each instructor have to prepare their own DTS.</p> <p>Example: C/E Rudy Pairo</p>
Instructor's Office	<p>Encode here the office where the Instructor can be visited by students for consultations.</p> <p>Example: GSO Building Room 200</p>
Instructor's availability for consultation	<p>Encode here the instructor consultation schedule</p> <p>Example: Tuesday and Thursday 0900-1200 hours (walk in)</p> <p>Outside of this schedule, you may seek an appointment</p>
Contact information Phone/email	<p>Encode here the contact information of the professor.</p> <p>Example: 091781-PAISO</p> <p>rpairo@maap.edu.ph</p>
Class schedule	<p>Encode here the class schedule of the Instructor with the above course</p> <p>Example: Wednesday 13-1600 hours</p>

Class Venue	<p>Encode here the venue for holding the class Example: GSO Building Room 100 Define class venue to conduct online and face-to-face</p>
Ground Rules	<p>Encode here the rules that are in place while class is ongoing, taking into consideration the alignment with the student handbook as published by the institution. Example: No cell phone If you wish to speak, raise your hand to be recognize Once students are seated, no exchange of seat Students who intend to go to the head will silently egress and ingress. Calculator may or may not be allowed. Define ground rules to conduct online and face-to-face</p>
Attendance Policy	<p>Encode here the rules on class attendance, taking into consideration the alignment with the student handbook as published by the institution Example: Absences equivalent to 20% of contact hours will automatically drop the student from the course (CMO 40 s2008) Classroom door will be lock 15 minutes after class starts, late students after academic quarter will be considered absent</p>
Holiday policy	<p>Encode here the rule on cancelled scheduled class for any reason, taking into consideration the alignment with the student handbook as published by the institution Example: Any class schedule that was cancelled due to holiday or similar circumstances means that the class calendar will be automatically extended to replace loss time; unless all (100%) students have attained the outcomes</p>
Class Participation	<p>Encode here the rules on class participation, taking into consideration the alignment with the student handbook as published by the institution. This is an extension of course delivery method, thus the teacher have to encourage the</p>

	<p>student to actively participate in the discussions.</p> <p>Example:</p> <p>Students are expected to be ready when attending the class; learners are randomly called to recite or solved problems.</p> <p>Ask any question within the domain.</p> <p>You may answer questions using any formula or procedures that arrive at a correct answer.</p> <p>Challenge the status quo.</p>
Signature Line should be at the bottom of the DTS document	
Prepared by:	Affix here the signature of the Instructor handling the course
Validated by:	<p>Affix here the signature of the reviewer preferably the supervisor of the Instructor and a subject matter expert, with knowledge on PQF law, spiral approach and OBE plus institutional policies.</p> <p>Validated in terms of;</p> <p>Philippine Qualification Framework Level 6</p> <p>Spiral Approach on Curriculum Development</p> <p>Outcome Base Education and Constructive Alignment</p> <p>Latest MET Policies, Standards and Outcomes</p> <p>Technical Content (STCW)</p> <p>Institution Policy</p> <p>Quality Standards</p>
Approved by:	Affix here the signature of the approving authority in the institution

II. Teaching and Learning Activities

Learning Outcomes	Topic	Teaching-Learning Activity (TLA)	Equipment, materials and references	Assessment	Indicative Hours
Competence/s: State the Competence as enumerated in Table A-III/1 being addressed and/or being addresses by CO's enumerated. If underpinning knowledge no need to state the competence.					
CO1: State Course Outcome of different LO's covered by CO1.			Performance Assessment: Describe the assessment to be used to the Course Outcome		
KUP/s: Define the KUP's as stated in Table A of STCW.					
LO1:	Topic 1: Online	TA1: State/define activities of the instructors LA1: State/define activities of the students.	State/define the equipment, materials to be used by students. State/define the equipment, materials to be used by instructors in the delivery of Topic	State/define the assessment used for the Learning Objective. If there is separate assessment list, state.	Hours can be by Topic or Sub Topic
	Face-to-Face	TA1: LA1:			
LO2:	Topic 2: Online	TA2: LA2:		Performance Assessment:	

Learning Outcomes	Topic	Teaching-Learning Activity (TLA)	Equipment, materials and references	Assessment	Indicative Hours
	Face-to-Face	TA2: LA2:			
Competence/s:					
CO2:				Performance Assessment:	
KUP/s:					
Learning Outcomes	Topic	Teaching-Learning Activity (TLA)	Equipment, materials and references	Assessment	Indicative Hours
LO3:	Topic 3: Online	TA3: LA3:		Performance Assessment:	
	Face-to-Face	TA3: LA3:			
LO4:	Topic 4: Online	TA4: LA4:		Written Assessment:	

Learning Outcomes	Topic	Teaching-Learning Activity (TLA)	Equipment, materials and references	Assessment	Indicative Hours
	Face-to-Face	TA4: LA4:			

Teaching Facilities:

Equipment:

Teaching Aids:

The MHEIs shall include the following elements in the design, review and verification, validation and approval of simulator exercises:

Template for Practical Exercise

Elements	Description	Sample Entries
Course	<i>Encode here the Course Descriptive Title</i>	Marine electricity and Electrical Maintenance / Electro 3 (CMO 14).
Practical Exercise Title	<i>Refers to the descriptive name of the scenario which is related to the learning outcome.</i>	Synchronizing the Generators.
STCW Competence Addressed	<i>Encode here the specific competence covered by the course and addressed by the practical exercise</i>	A-III/1. F2.C1 Operate electrical, electronic and control system.
KUP Addressed	<i>Encode here the specific KUP under the competence addressed by the activity</i>	1.b preparing, starting, <u>paralleling</u> and <u>changing-over</u> generators.

Annex F
(Detailed Teaching Syllabus)

Course Outcome Addressed	<i>Encode here the CO under the course addressed by the activity</i>	CO1: Perform pre-start up inspection, start a diesel generator, <u>paralleling</u> and <u>changing-over</u> of generators in accordance with the manufacturer's manual and established rules and procedures.
Learning Outcomes	<i>Refers to the learning outcomes provided in the course syllabus as prescribed in the Standardized Course Packages.</i>	LO1: Perform the <u>paralleling</u> and <u>changing-over</u> of generators taking into account the manufacturer's recommendations, established rules and procedures.
Task	<i>Encode here the specific activity required of the student through an outcome statement compose of a) Condition, b) Performance. C) Standards.</i>	Using a full mission simulator with the vessel at port, the student should be able to; synchronize the vessel generating sets within 15 minutes at 440 Volts and 60 Hz frequency.
Pre-requisite	<i>Encode here any requirements needed prior to the practical activity.</i>	<ol style="list-style-type: none"> 1. Completed lecture component 2. Completed instructor led "Synchronizing the Generators" exercise. 3. Student Access to equipment manuals
Duration	<i>Refers to the estimated time in the execution of the exercise for each phase to complete the entire scenario. (Familiarization, Briefing, activity, debriefing)</i>	30 minutes including briefing (15 minutes exercise).
Venue/Equipment	<i>Encode here, the location where the activity will be held and the equipment that will be used.</i>	GSO 16campus, Full mission ERS.
Training Equipment Particulars	<i>Refers to the specifications of the specific equipment within a system that will be used in the practical exercises.</i>	<ol style="list-style-type: none"> 1. Mechanical drive specifications Yanmar 6EY18LW (60HZ 720 rpm) 2. Generating sets ABB AMG 0355BB04 DBAM, 610 KVA, 3 Phase 440 Volts, 60 Hz 3. Switchgear: ABB Air Circuit Breaker 3 Phase 440 Volts, 60 Hz

Scenario	<i>Refers to the script or outline of the activities</i>	Vessel at port and all mechanical and electrical equipment relative to activity are already operational except for synchronization.
Initial Condition	<i>Refers to the starting state of the equipment/environment, at which the student will use as starting point in performing the given task.</i>	Diesel generator No. 1 (DG1) rated at 440-V, 60 Hz and 400 kW is currently connected to the bus bars. Diesel generator No. 2 (DG2) with the same ratings has been started and to be synchronized and connected in parallel with DG1.
Failure state	<i>Refer to the conditions by which the exercise will be prematurely terminated</i>	<ol style="list-style-type: none"> 1. Blackout 2. More than 2 attempts to connect at more than 5 minutes from 12 o'clock 3. Motorization of any of the Generating sets 4. 15 minutes and not yet connected in parallel 5. Unsafe condition brought about by student behavior
Student's Actions	<i>Refers to the activities the student is expected to undertake while undergoing the practical exercise.</i>	Perform the practical activity in a safe manner, following procedures as stated in the manufacturer's manual and meeting the requirements as stated in the task.
Performance Criteria:	<i>Refers to the description of the quality of student's performance in accordance with the learning outcome.</i> <i>As per STCW Code Column 4 (Minimum SPAR or Safety, Procedural and Results)</i>	STCW A-III/1. F2.C1 Column 4: Operations are planned and <u>carried out in accordance with operating manuals established rules and procedures to ensure safety of operations.</u>
Performance Standard: SPAR	Safety: <i>deviation from standard</i>	SAFETY <ol style="list-style-type: none"> 1. Student PPE suitable for the activity i.e., is he wearing slippers? 2. Behavior i.e., student does not horse around or play with the equipment. 3. Did not compromise his safety as well as the equipment during the activity.

	<i>Procedural: deviation from standard</i>	<p>PROCEDURAL</p> <p>The student performs the operations following manufacturer standards as found in the manual, or (Note these steps are generic, must refer to MHEI own manual)</p> <p>Enabling steps</p> <ol style="list-style-type: none"> 1. Switch synchronizing selector to incoming genset 2. Adjust voltage to required value 3. Adjust frequency to required value 4. Ensure that the panel indicator is turning clockwise, adjust so that speed of indicator is at permissible level. 5. Connect incoming generator to the bus when pointer is at 12 O'clock (+/- 2min) 6. Balance load between generating sets 7. Switch genset to auto load share – End
	<p><i>Results: deviation from standard</i></p> <p><i>Note: this is the end state</i></p>	<p>RESULTS</p> <p>a: Connected in parallel and balanced load: <u>15 minutes</u></p> <p>b: Bus Voltage: 440 Volts</p> <p>c: Bus Frequency: 60 Hz</p> <p>d: Load of genset: balance</p>
Grading	Refers to the process of assigning grade or score on the student performance as defined under the MHEI grading and or scoring system	<ol style="list-style-type: none"> 1. Completion of SPAR (Safety, Procedural and Result) meets minimum STCW Competence performance standards equivalent to 75 points or 75% grade. (Passing is 75%) 2. Every 20 seconds reduction in completion time gets additional 1 point (10 minutes highly Comp)

		<p>3. Every 1-volt deviation from 440 volt deduct 2 points</p> <p>4. Every 1 Hz deviation from 60 Hz deduct 2 points</p> <p>5. Maximum 100 points</p> <p>Students who were ordered to stop during the exercise for violation of protocol and or compromised the safety of the environs and to the equipment will get NYC or fail.</p>
<p>Note:</p> <ol style="list-style-type: none"> Other than the Equipment particulars or specifications, this document was prepared without utilizing any reference as is designed to be generic and must be customized at the MHEI's own location based on suppliers' specification and equipment manuals. The difference between training and assessment is the action of the Instructor and the Assessor during the activity. The exercise document should include the Names and Signatures of the following: Developer, Review and Approving Authority. 		

Please see additional information below:

<p>Basis for Grading Performance Criteria:</p> <p>PC1: Safety:</p> <p>PC2: Procedural:</p> <p>PC3: Result:</p> <p>Performance Standard:</p> <p>PS1: Safety:</p> <p>PS2: Procedural:</p> <p>PS3: Result:</p>	<p>Minimum requirements for practical activity:</p> <p>The norm by which the execution of the activity will be evaluated</p> <p>This is found in STCW Code, Column 4 and lifted as attributes or elements that must be demonstrated.</p> <p>Is the safety of the student and those around him including the environment compromised?</p> <p>Were all the steps as detailed in the manufacturer's manual followed?</p> <p>Was the output of the activity within acceptable limits as set by the manufacturer?</p> <p>The degree by which the criteria is evaluated against a certain standard</p> <p>Level of safety or degree of deviation from norm or standard.</p> <p>Degree of deviation from norm or standard.</p> <p>Degree of deviation from norm or standard.</p>
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Instructor's Actions	<p><i>Refers to the step-by-step activities the instructor will undertake in administering the practical or simulator exercises.</i></p> <p><i>a. The instructor shall ensure that the following information are conveyed to the students during briefing/debriefing:</i></p> <ol style="list-style-type: none"> <i>1. House rules.</i> <i>2. Description and configuration of the simulator/laboratory equipment.</i> <i>3. Operation of the simulator/laboratory equipment.</i> <i>4. Different scenarios related to the course.</i> <i>5. Attend to questions inherent to the familiarization of the system.</i> <i>6. debrief the student after the activity focus on the following, what did the student learned, what mistakes were made if any, and how to improve performance.</i> <p><i>b. Demonstrate how to perform the activity meeting the requirements.</i></p> <p><i>c. During student performance, intervene as necessary to ensure safety and acquisition of proficiency.</i></p>
Assessor's Actions	<p><i>Refers to the step-by-step activities the instructor will undertake in administering the practical or simulator exercises.</i></p> <p><i>a. The instructor shall ensure that the following information are conveyed to the students during briefing/debriefing:</i></p> <ol style="list-style-type: none"> <i>1. House rules.</i> <i>2. Description and configuration of the simulator/laboratory equipment.</i> <i>3. Operation of the simulator/laboratory equipment.</i> <i>4. Attend to questions inherent to the familiarization of the system.</i> <p><i>b. Informed the student of the result of performance (pass or fail).</i></p> <p><i>c. During student performance, intervene as necessary to ensure safety.</i></p>

Textbook and References:

Part D: Template of Detailed Teaching Syllabus (DTS)

	COLLEGE OF MARITIME COURSES BACHELOR OF SCIENCE IN MARINE ENGINEERING		
PART II: DETAILED TEACHING SYLLABUS			
Course Code / Descriptive Title :			
STCW Competence:			
Credit Units :	Lecture Hour(s):	Laboratory Hour(s):	Pre-requisite(s):
Course Description:			
Course Outcomes:			
Prepared by:	Reviewed/Validated by:	Approved by:	Date of Effectivity:



REVISION HISTORY

REV.NO.	DATE	REVISION DETAILS	
		FROM	TO

I. Course Information

Document	
Course Code	
Course Descriptive Title	
Course Credit & Hours	
Description and coverage	
Program Outcomes addressed	
STCW Competence Address by the course	
STCW KUP Address by the course	
Course Outcomes	
References	
Instructional Materials Handouts Videos (if any)	
Facility & Equipment	
Teaching and Learning Activities Discuss how the instructor intends	

Annex F
(Detailed Teaching Syllabus)

to teach the course or how the learner will acquire KSA elements within the course	
Assessment	
Resit (Retaking a failed summative examination)	
Grading	
Course Requirements	
Assignments and Deadlines	
Paper submission specifications	
Semester Offered	
Instructor's Name	
Instructor's Office	
Instructor's availability for consultation	
Contact information Phone/email	
Class schedule	
Class Venue	



Ground Rules	
Attendance Policy	
Holiday policy	
Class Participation	
Signature Line should be at the bottom of the DTS document	
Prepared by:	
Validated by:	
Approved by:	



II. Teaching and Learning Activities

Learning Outcomes	Topic	Teaching-Learning Activity (TLA)	Equipment, materials and references	Assessment	Indicative Hours
Competence/s:					
CO1:			Performance Assessment:		
KUP/s:					
LO1:	Topic 1: Online	TA1: LA1:			
	Face-to-Face	TA1: LA1:			
LO2:	Topic 2: Online	TA2: LA2:		Performance Assessment:	
	Face-to-Face	TA2: LA2:			



Competence/s:				
CO2:			Performance Assessment:	
KUP/s:				
LO3:	Topic 3: Online	TA3:		Performance Assessment:
		LA3:		
	Face-to-Face	TA3:		
		LA3:		
LO4:	Topic 4: Online	TA4:		Written Assessment:
		LA4:		
	Face-to-Face	TA4:		
		LA4:		

TEACHING FACILITIES

EQUIPMENT

TEACHING AIDS



The MHEIs shall include the following elements in the design, review and verification, validation and approval of simulator exercises:

Template for Practical Exercise

Elements	Description	Sample Entries
Course	<i>Encode here the Course Descriptive Title</i>	Marine electricity and Electrical Maintenance / Electro 3 (CMO 14).
Practical Exercise Title	<i>Refers to the descriptive name of the scenario which is related to the learning outcome.</i>	Synchronizing the Generators.
STCW Competence Addressed	<i>Encode here the specific competence covered by the course and addressed by the practical exercise</i>	A-III/1. F2.C1 Operate electrical, electronic and control system.
KUP Addressed	<i>Encode here the specific KUP under the competence addressed by the activity</i>	1.b preparing, starting, <u>paralleling</u> and <u>changing-over</u> generators.
Course Outcome Addressed	<i>Encode here the CO under the course addressed by the activity</i>	CO1: Perform pre-start up inspection, start a diesel generator, <u>paralleling</u> and <u>changing-over</u> of generators in accordance with the manufacturer's manual and established rules and procedures.
Learning Outcomes	<i>Refers to the learning outcomes provided in the course syllabus as prescribed in the Standardized Course Packages.</i>	LO1: Perform the <u>paralleling</u> and <u>changing-over</u> of generators taking into account the manufacturer's recommendations, established rules and procedures.



Task	<i>Encode here the specific activity required of the student through an outcome statement compose of a) Condition, b) Performance. C) Standards.</i>	Using a full mission simulator with the vessel at port, the student should be able to; synchronize the vessel generating sets within 15 minutes at 440 Volts and 60 Hz frequency.
Pre-requisite	<i>Encode here any requirements needed prior to the practical activity.</i>	<ol style="list-style-type: none"> 1. Completed lecture component 2. Completed instructor led "Synchronizing the Generators" exercise. 3. Student Access to equipment manuals
Duration	<i>Refers to the estimated time in the execution of the exercise for each phase to complete the entire scenario. (Familiarization, Briefing, activity, debriefing)</i>	30 minutes including briefing (15 minutes exercise).
Venue/Equipment	<i>Encode here, the location where the activity will be held and the equipment that will be used.</i>	GSO 9campus, Full mission ERS.
Training Equipment Particulars	<i>Refers to the specifications of the specific equipment within a system that will be used in the practical exercises.</i>	<ol style="list-style-type: none"> 1. Mechanical drive specifications Yanmar 6EY18LW (60HZ 720 rpm) 2. Generating sets ABB AMG 0355BB04 DBAM, 610 KVA, 3 Phase 440 Volts, 60 Hz 3. Switchgear: ABB Air Circuit Breaker 3 Phase 440 Volts, 60 Hz
Scenario	<i>Refers to the script or outline of the activities</i>	Vessel at port and all mechanical and electrical equipment relative to activity are already operational except for synchronization.
Initial Condition	<i>Refers to the starting state of the equipment/environment, at which</i>	Diesel generator No. 1 (DG1) rated at 440-V, 60 Hz and 400 kW is currently connected



	<i>the student will use as starting point in performing the given task.</i>	to the bus bars. Diesel generator No. 2 (DG2) with the same ratings has been started and to be synchronized and connected in parallel with DG1.
Failure state	<i>Refer to the conditions by which the exercise will be prematurely terminated</i>	<ol style="list-style-type: none"> 1. Blackout 2. More than 2 attempts to connect at more than 5 minutes from 12 o'clock 3. Motorization of any of the Generating sets 4. 15 minutes and not yet connected in parallel 5. Unsafe condition brought about by student behavior
Student's Actions	<i>Refers to the activities the student is expected to undertake while undergoing the practical exercise.</i>	Perform the practical activity in a safe manner, following procedures as stated in the manufacturer's manual and meeting the requirements as stated in the task.
Performance Criteria:	<i>Refers to the description of the quality of student's performance in accordance with the learning outcome.</i> <i>As per STCW Code Column 4 (Minimum SPAR or Safety, Procedural and Results)</i>	STCW A-III/1. F2.C1 Column 4: Operations are planned and <u>carried out in accordance with operating manuals established rules and procedures to ensure safety of operations.</u>
Performance Standard: SPAR	<i>Safety: deviation from standard</i>	SAFETY <ol style="list-style-type: none"> 1. Student PPE suitable for the activity i.e., is he wearing slippers? 2. Behavior i.e., student does not horse around or play with the equipment. 3. Did not compromise his safety as well as the equipment during the activity.



	<i>Procedural: deviation from standard</i>	<p>PROCEDURAL</p> <p>The student performs the operations following manufacturer standards as found in the manual, or (Note these steps are generic, must refer to MHEI own manual)</p> <p>Enabling steps</p> <ol style="list-style-type: none"> 1. Switch synchronizing selector to incoming genset 2. Adjust voltage to required value 3. Adjust frequency to required value 4. Ensure that the panel indicator is turning clockwise, adjust so that speed of indicator is at permissible level. 5. Connect incoming generator to the bus when pointer is at 12 O'clock (+- 2min) 6. Balance load between generating sets 7. Switch genset to auto load share – End
	<p><i>Results: deviation from standard</i></p> <p><i>Note: this is the end state</i></p>	<p>RESULTS</p> <ol style="list-style-type: none"> a: Connected in parallel and balanced load: <u>15 minutes</u> b: Bus Voltage: 440 Volts c: Bus Frequency: 60 Hz d: Load of genset: balance
Grading	Refers to the process of assigning grade or score on the student performance as defined under the	<ol style="list-style-type: none"> 1. Completion of SPAR (Safety, Procedural and Result) meets minimum STCW Competence performance standards equivalent to 75 points or 75% grade. (Passing is 75%) 2. Every 20 seconds reduction in completion time gets additional 1 point (10



	MHEI grading and or scoring system	<p><i>minutes highly Comp)</i></p> <ol style="list-style-type: none"> 3. Every 1-volt deviation from 440 volt deduct 2 points 4. Every 1 Hz deviation from 60 Hz deduct 2 points 5. Maximum 100 points <p>Students who were ordered to stop during the exercise for violation of protocol and or compromised the safety of the environs and to the equipment will get NYC or fail.</p>
<p>Note:</p> <ol style="list-style-type: none"> 1. Other than the Equipment particulars or specifications, this document was prepared without utilizing any reference as is designed to be generic and must be customized at the MHEI's own location based on suppliers' specification and equipment manuals. 2. The difference between training and assessment is the action of the Instructor and the Assessor during the activity. 3. The exercise document should include the Names and Signatures of the following: Developer, Review and Approving Authority. 		

Please see additional information below:

<p>Basis for Grading</p> <p>Performance Criteria:</p> <p>PC1: Safety:</p> <p>PC2: Procedural:</p> <p>PC3: Result:</p> <p>Performance Standard:</p> <p>PS1: Safety:</p>	<p>Minimum requirements for practical activity:</p> <p>The norm by which the execution of the activity will be evaluated</p> <p>This is found in STCW Code, Column 4 and lifted as attributes or elements that must be demonstrated.</p> <p>Is the safety of the student and those around him including the environment compromised?</p> <p>Were all the steps as detailed in the manufacturer's manual followed?</p> <p>Was the output of the activity within acceptable limits as set by the manufacturer?</p> <p>The degree by which the criteria is evaluated against a certain standard</p> <p>Level of safety or degree of deviation from norm or standard.</p> <p>Degree of deviation from norm or standard.</p> <p>Degree of deviation from norm or standard.</p>
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PS2: Procedural: PS3: Result:	
Instructor's Actions	<p><i>Refers to the step-by-step activities the instructor will undertake in administering the practical or simulator exercises.</i></p> <p><i>a. The instructor shall ensure that the following information are conveyed to the students during briefing/debriefing:</i></p> <ol style="list-style-type: none"> <i>1. House rules.</i> <i>2. Description and configuration of the simulator/laboratory equipment.</i> <i>3. Operation of the simulator/laboratory equipment.</i> <i>4. Different scenarios related to the course.</i> <i>5. Attend to questions inherent to the familiarization of the system.</i> <i>6. debrief the student after the activity focus on the following, what did the student learned, what mistakes were made if any, and how to improve performance.</i> <p><i>b. Demonstrate how to perform the activity meeting the requirements.</i></p> <p><i>c. During student performance, intervene as necessary to ensure safety and acquisition of proficiency.</i></p>
Assessor's Actions	<p><i>Refers to the step-by-step activities the instructor will undertake in administering the practical or simulator exercises.</i></p> <p><i>a. The instructor shall ensure that the following information are conveyed to the students during briefing/debriefing:</i></p> <ol style="list-style-type: none"> <i>1. House rules.</i> <i>2. Description and configuration of the simulator/laboratory equipment.</i> <i>3. Operation of the simulator/laboratory equipment.</i> <i>4. Attend to questions inherent to the familiarization of the system.</i> <p><i>b. Informed the student of the result of performance (pass or fail).</i></p> <p><i>c. During student performance, intervene as necessary to ensure safety.</i></p>

TEXTBOOK AND REFERENCES

