

TEACHING SYLLABUS

Course description	POLLUTION PREVENTION MARPOL 73/78
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Course code	TM/DF	Year	II	Number of credits	2
	2.1.19	Semester	III		

Faculty	Navigation and Naval Transport Naval Electromechanics	The number of hours per semester / activities				
Domain	Naval Engineering and Navigation	Total	C	S	L	P
Specialization	Navigation and Maritime and River Transport Electromechanics Electrotechnics	14	-	-	1/week 14	

Approved,
UMC RECTOR
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Approved,
Romanian Naval Authority

PROMOTION AND IMO COURSES DEPARTMENT DIRECTOR,
Sen.lect.Dr.eng. Liviu Constantin STAN

Course type DF -fundamental, DD -engineer, domain specific, DS -specialized, DC -complementary	DS
Course optionality: DI -required, DO -optional, DF - facultative	DO

Previous courses	Obligations (conditioned)	Machinery and equipment Naval (DO 3.8.5)
	Recommended	Fluid Mechanics, Hydraulic and pneumatic machines, steam generators and steam and gas turbines, Mathematics, Chemistry, Physics, Strength of Materials, legislation

Objectives	Knowing the legislation (MARPOL 73/78, Annex I, II, III, IV, V, VI), quick action in case of pollution, limiting pollution and combat its effects.
Content (descriptors)	1. Annex I 1.1 Oil 1.1.1 Principles of environmental protection 1.1.2 Special areas 1.1.3 Machinery oil and cargo oil residues 1.2 Control of oil discharges from machinery spaces 1.2.1 Oily wastes

- 1.2.2 Discharge provision
- 1.2.3 Construction and equipment for machinery spaces
- 1.2.4 Oily-water separators and ancillary equipment
- 1.2.5 Disposal of residual
- 1.3 Documentation
 - 1.3.1 Oil Record Book
 - 1.3.2 IOPP Certificate
- 1.4 Miscellaneous
 - 1.4.1 Shore reception facilities
 - 1.4.2 Force majeure
- 1.5 Introduction
 - 1.5.1 General
 - 1.5.2 Environmental threat from oil tankers
 - 1.5.3 Principles of preventing oil pollution from oil tankers
- 1.6 Control of oil discharges from oil tankers
 - 1.6.1 Discharge provision
 - 1.6.2 Retention of oil on board
 - 1.6.3 Segregated ballast tanks (SBT)
 - 1.6.4 Clean ballast tanks (CBT)
 - 1.6.5 Crude oil washing (COW)
 - 1.6.6 Limiting the effects of accidents
 - 1.6.7 Slop tanks
 - 1.6.8 Equipments
 - 1.6.9 Pumping and piping arrangements
 - 1.6.10 Exceptions, exemptions, special situations
- 1.7.1 Documentation
- 1.7.2 Oil Record Book
- 1.7.3 IOPP Certificate
- Annex II – Substances**
 - 2.1 Principles
 - 2.1.2 Division of substances
 - 2.1.3 Hazard profiles
 - 2.1.4 Categorization and ship type assignment
 - 2.1.5 Updating the lists of substances
 - 2.1.6 Inclusion of noxious liquid substances in the BCH/IBC Code
 - 2.2 Discharge of noxious liquid substances (NLS)
 - 2.2.1 Principles and definitions
 - 2.2.2 Discharge provision
 - 2.2.3 Efficient stripping
 - 2.2.4 Prewash operations
 - 2.2.5 Ventilation procedures
 - 2.2.6 Existing ships until 1994
 - 2.2.7 Underwater discharge outlet
 - 2.3 Unloading, stripping and prewash operations
 - 2.3.1 Category X substances
 - 2.3.2 Category Y substances
 - 2.3.3 Category Z substances
 - 2.3.4 Other substances outside categories X, Y, Z
 - 2.3.5 Maximum permitted residues in the tank for category X, Y or Z
 - 2.4 Documentation
 - 2.4.1 Procedures and arrangements manual

- 2.4.2 Cargo Record Book (CRB)
- 2.4.3 Certificates
- 2.5 Miscellaneous
 - 2.5.1 Shore reception facilities
 - 2.5.2 Force majeure
- Annex III**
 - 3.1 Application
 - 3.1.1 Definition harmful substances
 - 3.1.2 Harmful substances in packaged form
 - 3.1.3 Exceptions for carriage of harmful substances
 - 3.2 Packing
 - 3.3 Marking and labelling
 - 3.4 Procedures and arrangements manual
 - 3.4.1 IMDG CODE
 - 3.4.2 Certificates
 - 3.5 Stowage
 - 3.6 Quantity limitations
 - 3.7 Exceptions
 - 3.8 Port State control on operational requirements
 - 3.9 Miscellaneous
 - 3.9.1 Shore reception facilities
 - 3.9.2 Force majeure
 - 3.10 Guidelines for the identification of harmful substances in packaged form
- Annex IV**
 - 4.1. Definition
 - 4.2 Application
 - 4.3 Surveys
 - 4.4 Issue of certificate
 - 4.5 Duration of certificate
 - 4.6 Discharge of sewage
 - 4.7 Exceptions
 - 4.8 Reception facilities
 - 4.9 Standard discharge connections
 - 4.10 Appendix to annex IV
 - 4.11 Ship Specific Ballast Water Management Plan
- Annex V**
 - 5.1 Definitions : garbage, nearest land, special area
 - 5.2 Application
 - 5.3 Disposal of garbage within special areas
 - 5.4 Exceptions
 - 5.5 Reception facilities
 - 5.6 Port State control on operational requirements
 - 5.7 Placards, garbage management plans and garbage record-keeping
 - 5.8 Form of garbage record book
 - 5.8.1 Introduction
 - 5.8.2 Garbage and garbage management
 - 5.8.3 Description of the garbage
 - 5.8.4 Entries in the Garbage Record Book (Jurnalul de înregistrare a mărfii)
 - 5.8.4.1 Receipts
 - 5.8.4.2 Amount of garbage
 - 5.9 Record of garbage discharges

	Annex VI 6.1 General 6.2 Application 6.3 Definitions 6.4 General exceptions 6.5 Equivalent 6.6 Inspections, certification and means of control 6.6.1 Inspections 6.6.2 Release or confirmation certificate 6.6.3 Release or confirmation certificate by another government 6.6.4 The form of certificate 6.6.5 Duration and validity of the certificate 6.6.6 Control of operating rules by the port 6.6.7 Identify contraventions and implementation of the provisions 6.7 Requirements for controlling emissions from ships 6.7.1 Requirements referring to the Ozone depleting Substances 6.7.2 Requirements referring to Nitrogen Oxides 6.7.3 Requirements referring to Sulphur Oxides 6.7.4 Requirements referring to Volatile Organic Compounds (VOC) 6.7.5 Requirements referring to Shipboard Incineration 6.7.6 Requirements referring to reception facilities 6.7.7 The quality of fuel 6.7.8 Requirements for Platforms and Drilling Rigs 6.8 Requirements referring to International Air Pollution Prevention Certificate (IAPP)
Test and evaluation	7 tests+task

Evaluation form works)	(E-examination, CV- colloquium / final test, LP- control	C
Final grade (percentage)		70%
		10%
		10%
		10%
Bibliography	1. Panaitescu, M., Panaitescu, F.V., Dragomir, I., <i>Masini si instalatii navale, vol. I</i> , Editura EXPONTO, Constanta, 2002 2. Panaitescu, M., Panaitescu, F.V., Dragomir, I., <i>Prevenirea poluarii si P.S.I. Marfuri periculoase</i> , Editura EXPONTO, Constanta, 2002 3. Panaitescu, F.V., Panaitescu, M., Dragomir, I., <i>Masini si instalatii navale, Ed. revizuita</i> , Editura EXPONTO, Constanta, 2004 4. Dragomir, I., <i>Prevenirea poluarii mediului marin, vol. I, II, III, CPPMC, Constanta, 1983</i> 5. MARPOL 73/78, Bucuresti, 1992, Londra 2003 6. Manual on Oil Pollution, Londra, 1992	
List of needed materials	Manual SOPEP (Shipboard oil pollution emergency plan), Manual of oil pollution, MARPOL 73/78, Teste CERONAV Constanta, Studii de caz de poluare, Planse cu aspecte de prevenire a poluarii marine, programe	

	de simulare a unor cazuri de poluare, filme cu aspecte concrete din Anexele I, II, III, IV, V, VI.
Balance of spent hours	1-4 hours; 2-4 hours;3-4 hours; 4-4 hours; 5-4 hours; 6-4 hours;7-4 hours

Lecturer Position, title, first name, name	Signature
Prof.Mariana Panaitescu, Ph.D.	
Head of chair Position, title, first name, name	Signature
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Legend: C-course, S-seminar, L- Laboratory or simulator activities, P- project or practical work