A PROPOSAL FOR AMENDMENT OF THE IMO MODEL COURSE

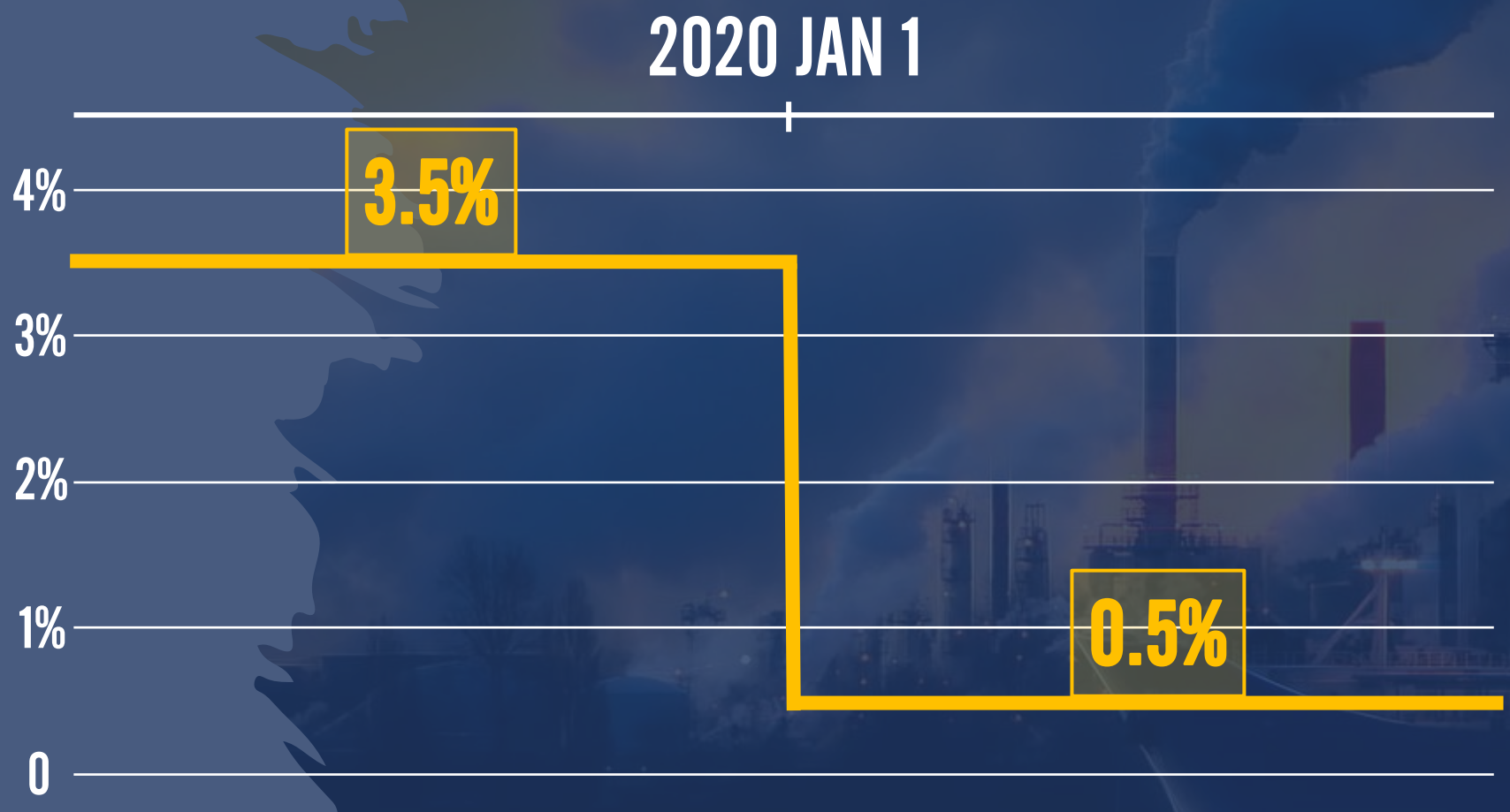
For Improving Environmental perception of Seafarers Based on 1.38 Marine Env. Awareness

INTERNATIONAL MARITIME ORGANIZATION

Team.
Ministry of Maritime Education

모의IMO총회
The Mock IMO Assembly

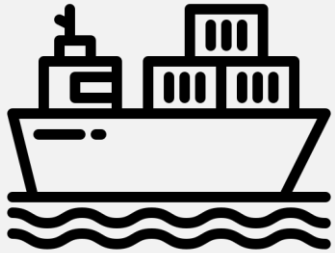
Background



Upper limit of SOx content of ship fuel oil established by IMO 2020

2017

2024



BWTS

The BWM Convention entered into force on 8 September 2017.

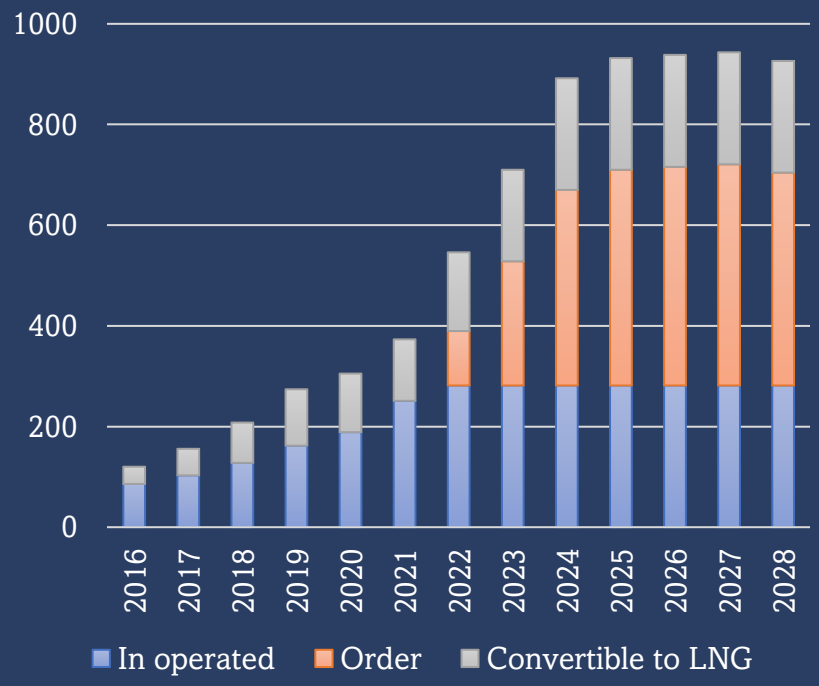
The adoption of all the required Guidelines for the uniform implementation of the BWM Convention and the approval and certification of modern ballast water treatment technologies have removed the major barriers to the ratification of the instrument and a number of additional countries have indicated their intention to accede to this Convention in the near future.

Ballast Water Management Convention - Wikipedia

Vector Icons and Stickers - PNG, SVG, EPS, PSD and CSS (flaticon.com)
(cargo-ship, group-meeting, lack, planet-earth, ship)

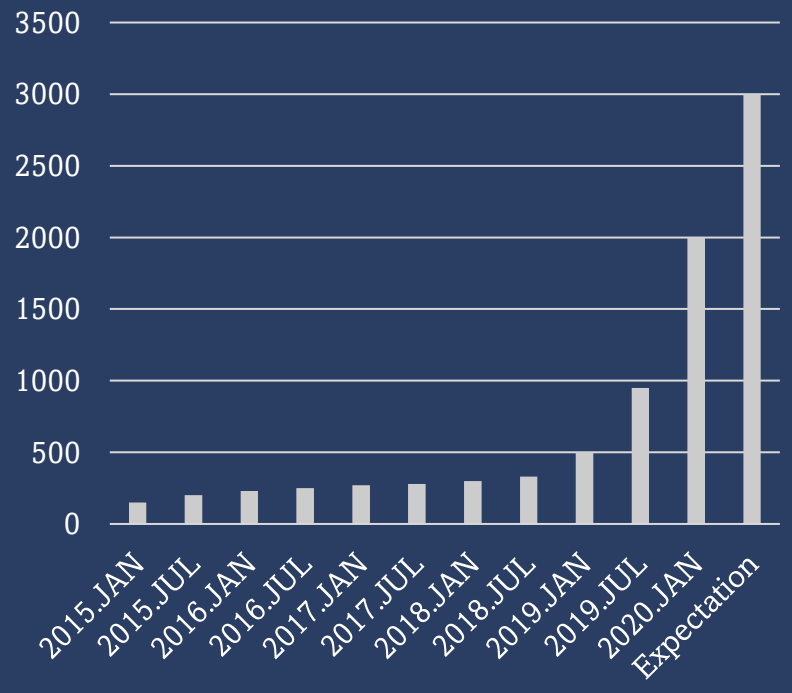
Ship Owner

Annual Increase in LNG Fuel Propulsion Ships <*Fig1*>



Shipbuilding

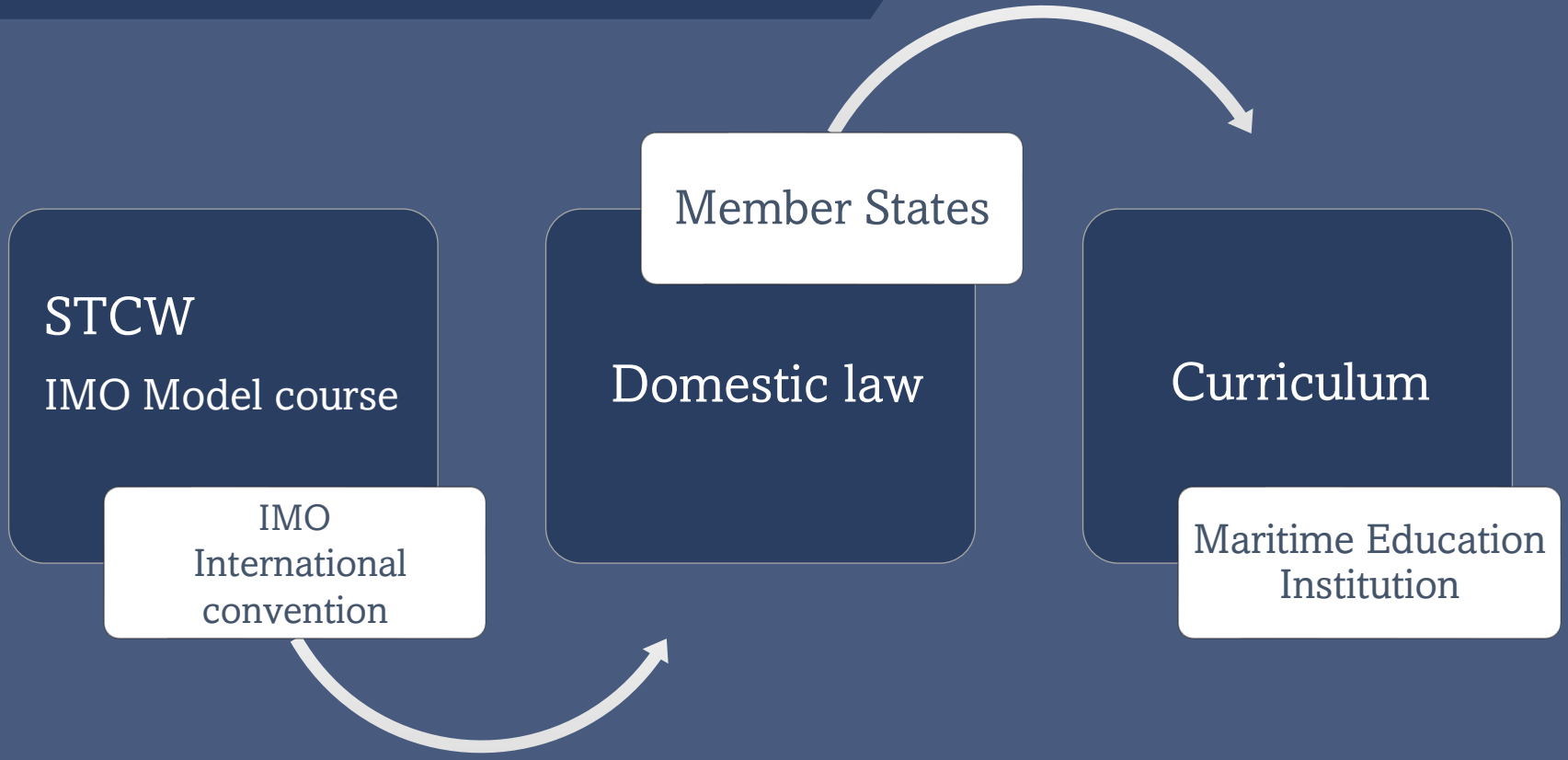
Number of Scrubber Installation Vessels <*Fig2*>



<*Fig1*> Do Hyun-jae and Lee So-young, 2020. Research on strategies to respond to bunkering industries following the strengthening of environmental regulations by the IMO, Institute of Energy Economics, p.1, p.23, p.40, p.iv

<*Fig2*> Annual increase in LNG fuel propulsion ships (DNV)

Curriculum setting process for maritime educational institution

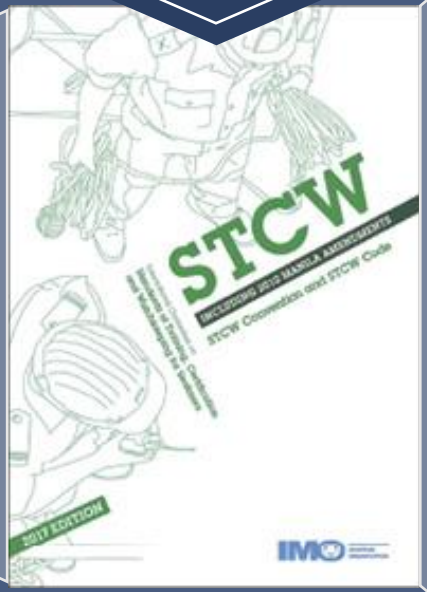


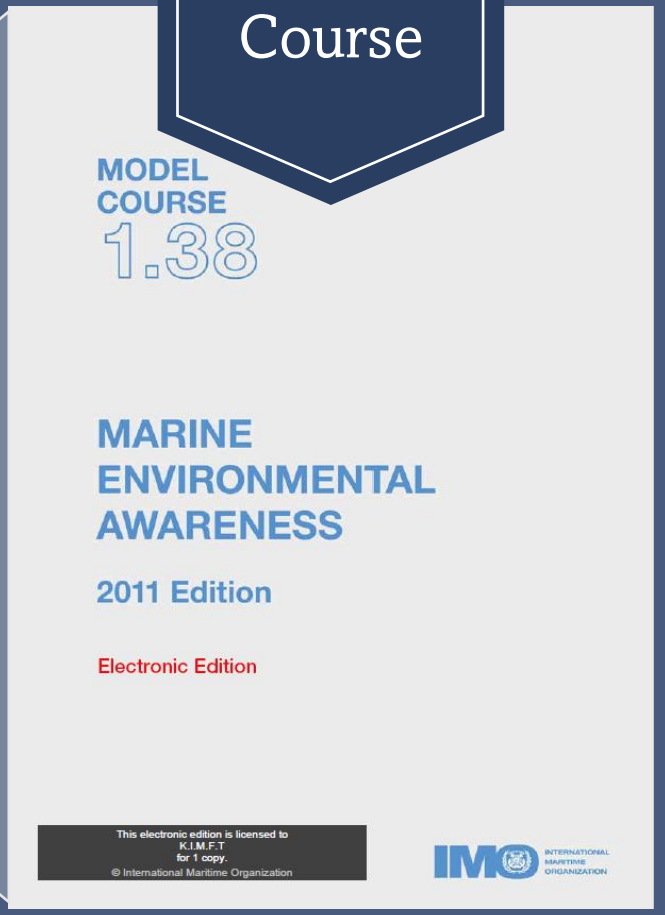
Background

IMO International convention in 1978

STCW

IMO Model Course





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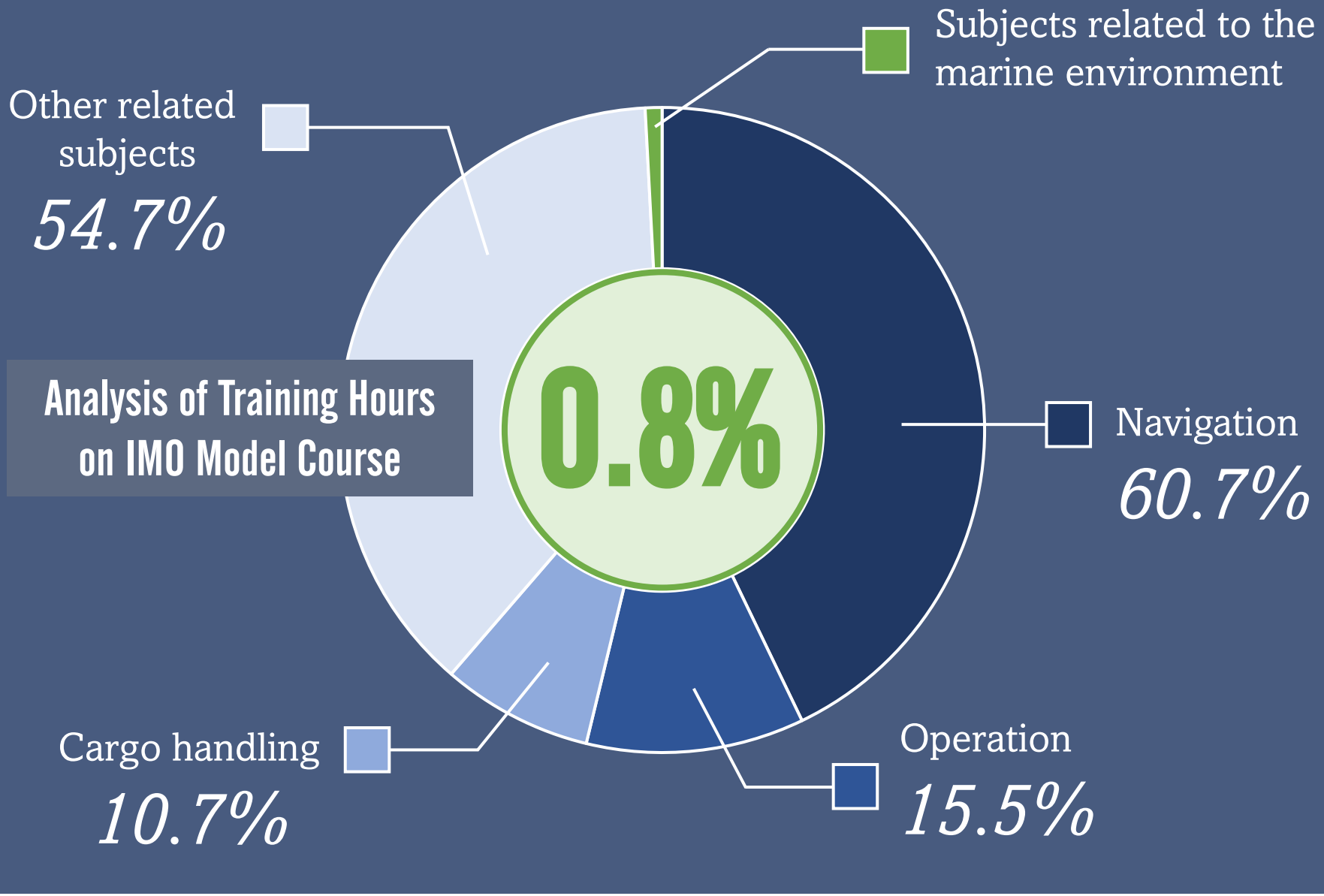
STCW Cover pic - https://www.imo.org/en/OurWork/HumanElement/Pages/STCW-Convention.aspx

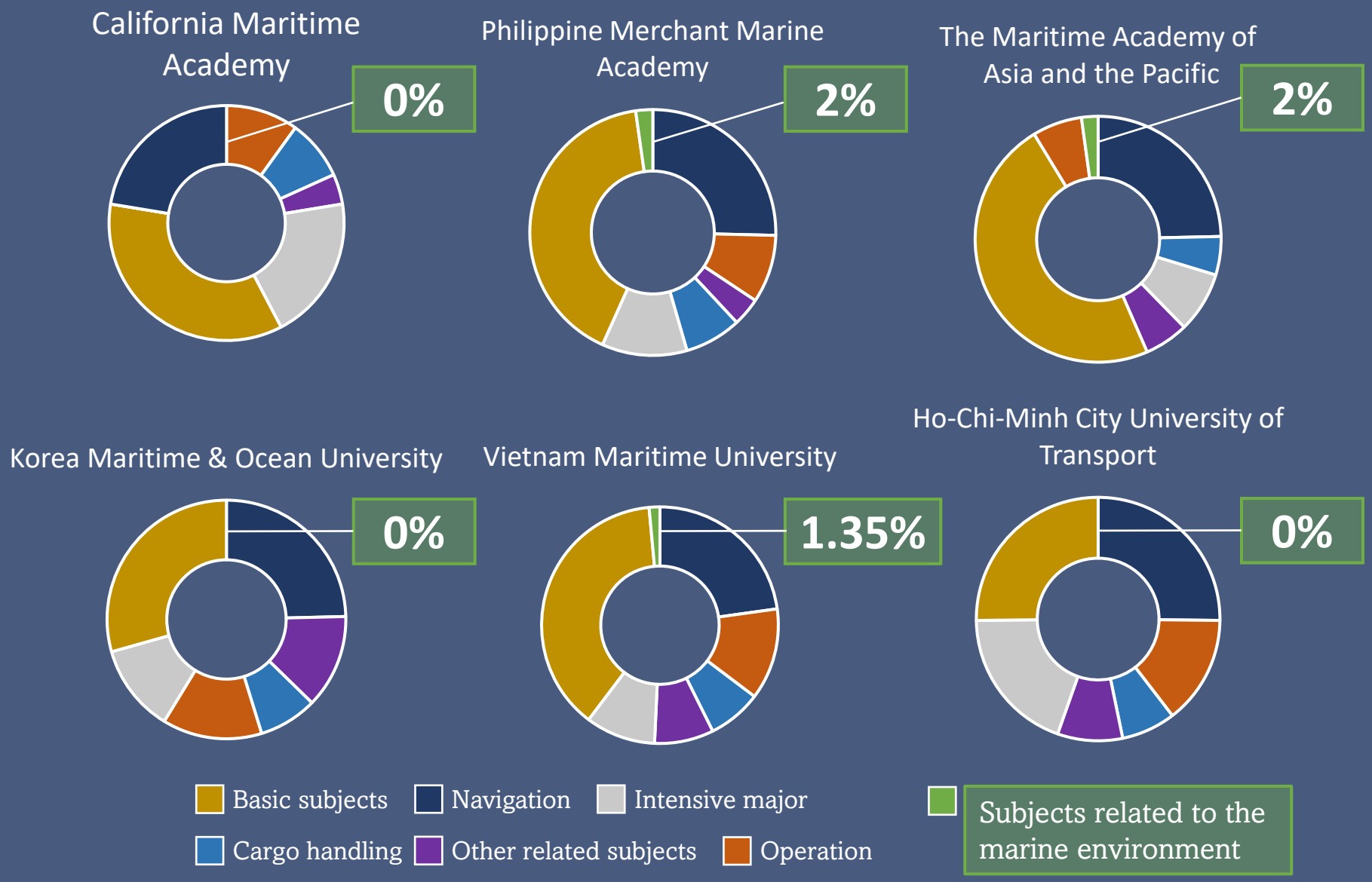
Problem analysis

Problem analysis



Hong Jun gi. “A study on the Development of Curriculum for Navigation Science Department of Foreign Maritime College – For the Case of Kenya Maritime College.” Master's thesis, Korea Maritime & Ocean University General Graduate School, 2016. Busan

Problem analysis



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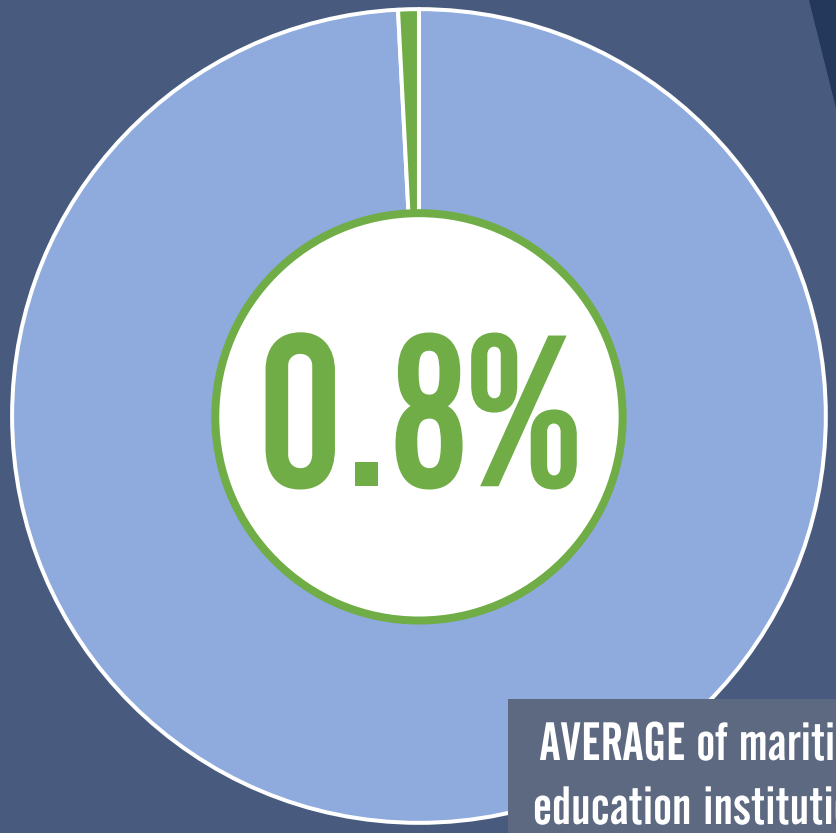

Lack of environmental subjects in maritime educational institutions

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Lack of environmental education on the model course

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Lack of environmental knowledge and awareness of future seafarers

Hong Jun gi. “A study on the Development of Curriculum for Navigation Science Department of Foreign Maritime College – For the Case of Kenya Maritime College.” Master's thesis, Korea Maritime & Ocean University General Graduate School, 2016. Busan

Subjects related to marine environment among related subjects

Education institution	SUBJECTS
CMA	Marine Survival and Life Saving lifeboat operation Basic digestion Advanced digestion On-board medical care
PMMA	Maritime English Basic safety Prevention of marine pollution Search and Rescue
MAAP	Maritime English Basic safety Prevention of marine pollution Search and Rescue
KMOU	Maritime English Marine Survival and Life Saving Maritime Safety Practice Maritime English Practice Medical management Ship Security and Safety Practice Marine accident response practice International Maritime Convention

Education institution	SUBJECTS
DMU	Basic Maritime English Intermediate Maritime English Advanced Maritime English Maritime English Listening Maritime English Speaking
VIMARU	Maritime English I Maritime English II Prevention of marine pollution Emergency response International Maritime Convention
HCMUT	Maritime English I Maritime English II Maritime English III Emergency response
MODEL COURSE	Maritime English Prevention of marine pollution On-board medical care Emergency response Leadership and Teamwork International Maritime Convention

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Solution

Original

7.2 Pollution prevention measures

List procedures and/or technical installation designed to minimize the emissions of greenhouse gases from shipping

Revised

7.2 Pollution prevention measures

7.2.1 LNG ENGINE
Recognize the Characteristics of Liquefied Gas
Describe the procedure for using Liquefied Gas Fuel Supply System
Describe the procedure of using Liquefied gas safety management and emergency response
Recognize port safety management
Explain the advantages/disadvantages of using LNG engine

7.2.2 List procedures and/or technical installation designed to minimize the emissions of greenhouse gases from shipping.

Original

8.3 Pollution prevention measures

List procedures and/or technical installations designed to minimize engine emissions (SOx, NOx, PM)

Revised

8.3 Pollution prevention measures

8.3.1 LSFO
Describe the procedure of using LSFO in vessel
Explain the effect of reducing SOx generation
Explain the advantages/disadvantages of using LSFO
Give examples of the economic impact of LSFO

8.3.2 Scrubber
Environmental impact of Scrubber
Give examples of the ecological impact of Scrubber
Give examples of the economic impact of Scrubber

8.3.3 List procedures and/or technical installations designed to minimize engine emissions(SOx, NOx, PM)

Original

9.2	Pollution prevention measures
9.2.1	Describe the procedure of mid ocean ballast water mammals
9.2.2	Explain the advantages/disadvantages of mid ocean ballast water exchange
9.2.3	List ballast water treatment methods

Revised

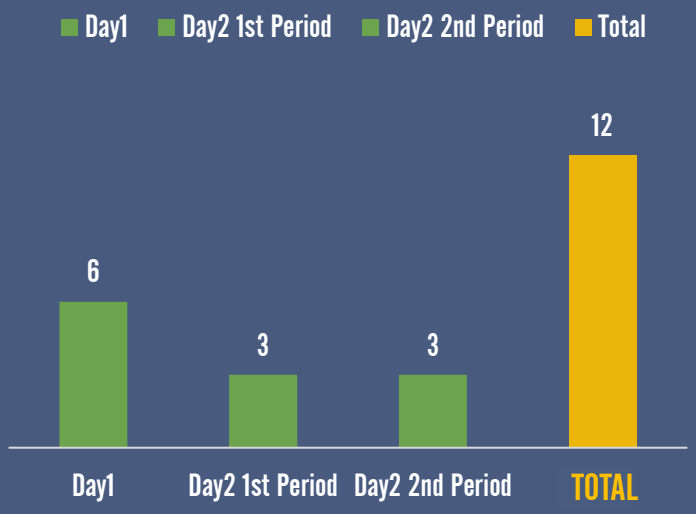
9.2	Pollution prevention measures
9.2.1	Ballast Water Exchange Describe the procedure of mid ocean ballast water mammals Explain the advantages/disadvantages of mid ocean ballast water exchange
9.2.2	Ballast Water Treatment System Recognize the BWTS equipment composition (UV type & Electrolysis type) Describe the procedure for using UV type and Electrolysis type BWTS Describe the difference between UV type and Electrolysis type Explain the advantages/disadvantages of UV type Explain the advantages/disadvantages of Electrolysis type
9.2.3	List of other ballast water treatment methods

Solution

Original

Day 2	1st Period (3.0 hours)	2nd Period (3.0 hours)
	7. Emissions to air, greenhouse gases – lecture 7.1 Environmental impact of emissions of greenhouse gases 7.2 Pollution prevention measures **8. Other emissions to the air – lecture** 8.1 Environmental impact of engine emissions (SO_x, NO_x, PM) 8.2 Other air pollutants from ships 8.3 Pollution prevention measures **9. Introduction of invasive species including ballast water – film/lecture** 9.1 Environmental impact of transfer of species 9.2 Pollution prevention measures **10. Other impacts to the marine environment – lecture** 10.1 Environmental impact of underwater noise 10.2 Environmental impact of antifouling paint 10.3 Environmental impact of recycling of ships	**11. Pollution prevention measures – workshop** **12. Personal involvement and personal responsibilities – workshop** 12.1 Personal behaviour 12.2 Personal responsibility 12.3 Officer responsibility

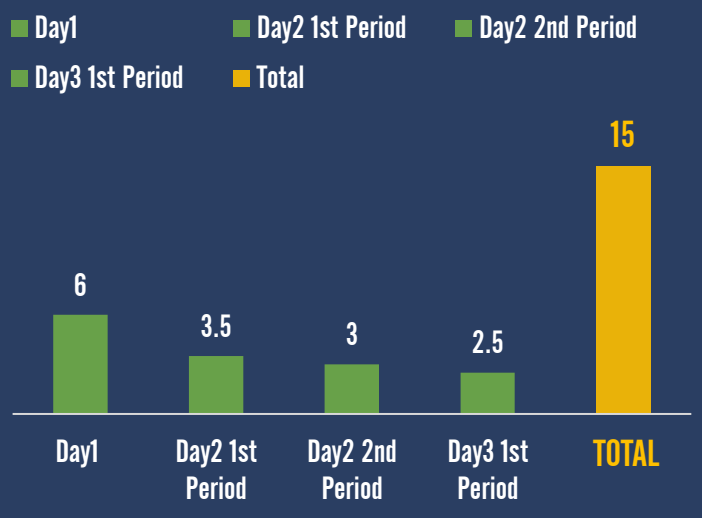
Course hours



Revised

Day 2	1st Period (3.5 hours)	2nd Period (3.0 hours)	Day 3	1st Period (2.5 hours)
	7. Emissions to air, greenhouse gases – lecture 7.1 Environmental impact of emissions of greenhouse gases 7.2 Pollution prevention measures **8. Other emissions to the air – lecture** 8.1 Environmental impact of engine emissions (SO_x, NO_x, PM) 8.2 Other air pollutants from ships 8.3 Pollution prevention measures	**9. Introduction of invasive species including ballast water – film/lecture** 9.1 Environmental impact of transfer of species 9.2 Pollution prevention measures **10. Other impacts to the marine environment – lecture** 10.1 Environmental impact of underwater noise 10.2 Environmental impact of antifouling paint 10.3 Environmental impact of recycling of ships		**11. Pollution prevention measures - workshop** **12. Personal involvement and personal responsibilities - workshop** 12.1 Personal behavior 12.2 Personal responsibility 12.3 Officer responsibility

Course hours



IMO, Model Course 1.38 Marine environmental awareness

What can we expect?

Prospective Seafarers Can Get

1. Intention of marine environmental awareness pursued by IMO
2. Systematic training about the future eco-friendly ships
3. Changed environmental regulations and their corresponding countermeasures in the training field
4. Easily adress on environmental pollution prevention devices.
5. Improve environmental awareness

Conclusion

Conclusion

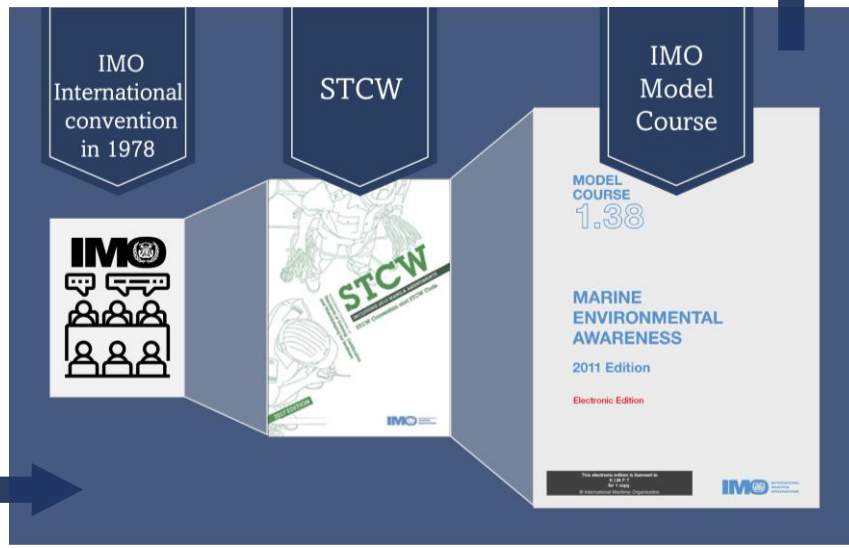
IMO Strategic Directions

SD 6

Address the human elements

6.13

Development of amendments to the Revised guidelines for the development, review and validation of model courses *(MSC-MEPC.2/Circ.15/Rev.1)*



STRATEGY, PLANNING AND REFORM (a) Strategy and planning
Revised Strategic Plan for the Organization for the six-year period 2018 to 2023

Conclusion

"Sustainable Shipping for a Sustainable Planet"
2020

"New technologies for greener shipping"
2022

IMO Theme

2021
"Seafarers: at the core of shipping's future"

Conclusion
Seafarers is core of Sustainable Planet and greener shipping

IMO, World Maritime Theme 2020 2021 2022

Conclusion

HTW

Human Element, Training and Watchkeeping

- **CCC** — Carriage of Cargoes and Containers
- **HTW** — Human Element, Training and Watchkeeping
- **III** — Implementation of IMO Instruments
- **NCSR** — Navigation, Communications and Search and Rescue
- **PPR** — Pollution Prevention and Response
- **SDC** — Ship Design and Construction
- **SSE** — Ship System and Equipment

THANK YOU FOR LISTENING

Education is the most powerful weapon which you can use to change the world ***Nelson Mandela***