



TRAINMOS II  
University of  
Strathclyde



17 – 19

November 2015

# TRAINMOS II – University of Strathclyde

## RISK-BASED DESIGN, RISK-BASED REGULATION & RISK-BASED OPERATION WORKSHOP AGENDA

Prof. Apostolos Papanikolaou, NTUA

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<http://www.naval.ntua.gr/sdl>



# Workshop Objectives/Expectations

After the end of the workshop, participants should be able to

- ◉ Understand the main differences between the deterministic and probabilistic approach to ship's damage stability
- ◉ Engage knowledgably in debates on the application of the different risk based techniques.
- ◉ Understand how to integrate risk-based methodologies and the latest analysis techniques into the safety regulatory framework to provide a sound scientific and practicable basis for the development of future safety regulations.
- ◉ Understand the requirements for improved accident data collection and availability in order to support monitoring and development of safety regulations.
- ◉ Understand the essentials of risk-based design and holistic, multi-objective ship design optimisation

# Workshop Program (1)

## Agenda

### *DAY 1*

## **Module 1: Damage Stability, Risk-based Design and Accident Databases**

- ⦿ Review of major marine accidents and evolution of the international damage stability regulations (Papanikolaou, NTUA)
- ⦿ Accidental Databases (Eliopoulou, NTUA)
- ⦿ Risk-based damage stability requirements (Papanikolaou, NTUA)

# Workshop Program (2)

## Agenda

### *DAY 2*

## **Module 2: Risk Analysis, Risk-based Design and Holistic/Multi-Objective Optimisation, Risk-based Operation-Guidance to the Master**

- ⦿ Risk Analysis of Tankers & Passenger Ships (Eliopoulou, NTUA )
- ⦿ Risk-based Design and Holistic/Multi-objective Optimisation of Tankers and Passenger Ships (Papanikolaou, NTUA)
- ⦿ Assessment of operational risks and guidance to the master (Papanikolaou, NTUA)

# Workshop Program (3)

## Agenda

### *DAY 3*

#### **Module 3: EEDI and safety; Review of Marine Accidents**

- ⦿ Impact of EEDI on Ship Safety (Papanikolaou, NTUA)
  - FP7 project SHOPERA (Oct. 2013-Sep. 2016)
- ⦿ The sinking of ferry Express Samina (2000) (Papanikolaou & Vavourakis)
- ⦿ The sinking of ferry Heraklion (1966) (Papanikolaou & Vavourakis)

# Course Lecturers

## Course lecturers:

- ⦿ Prof. Apostolos D. Papanikolaou (NTUA)
- ⦿ Dr. Eleftheria Eliopoulou (NTUA)
- ⦿ Mr. Georgios Vavourakis (US)

# Workshop Leader

## **Workshop leader:**

**Prof. Apostolos D. Papanikolaou**

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