

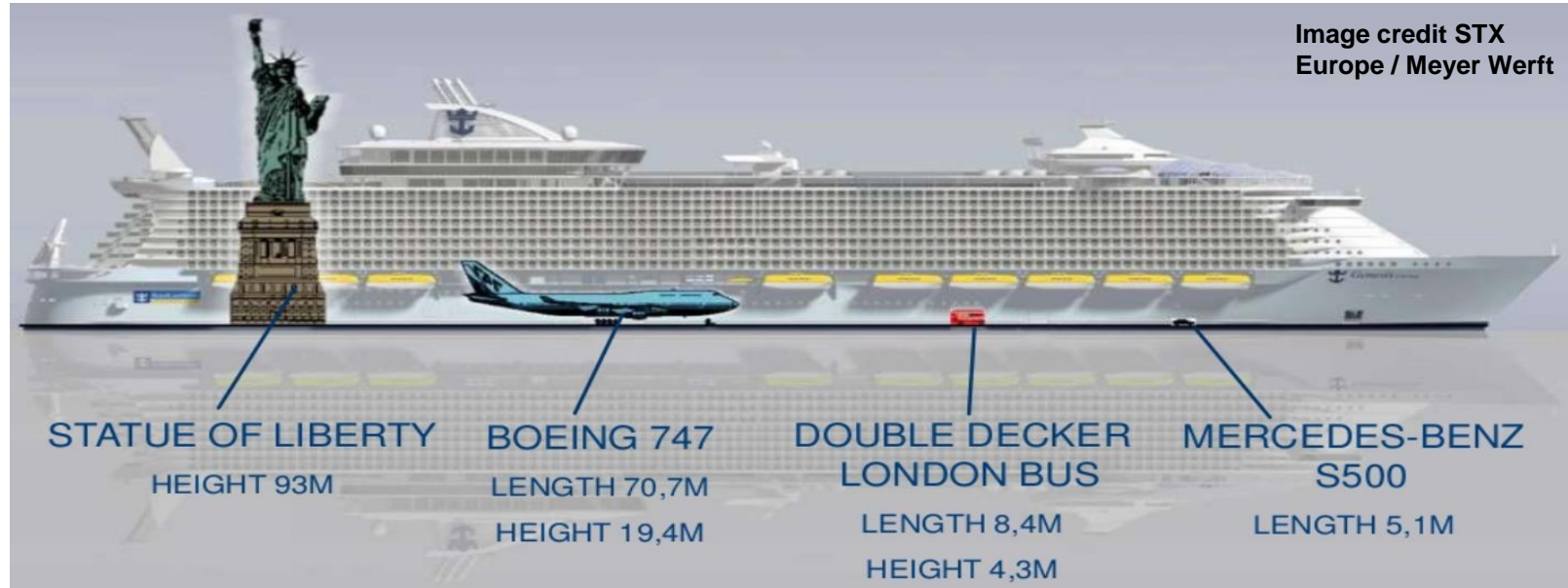


Aalto University  
School of Engineering

# MEC-E1004 Principles of Naval Architecture

*Course introduction*

# Course introduction – About Ships !



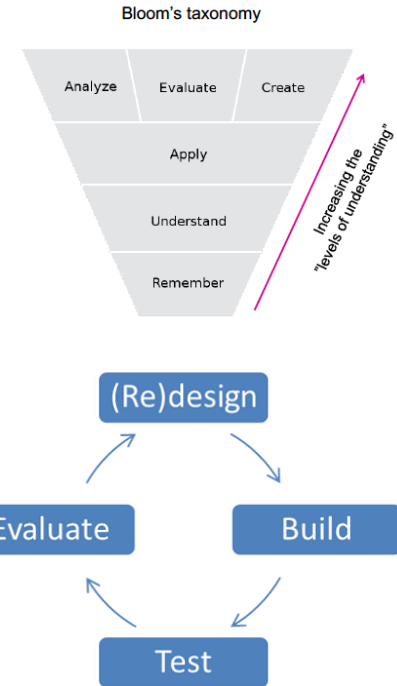
- ❑ Ships are among the largest, most complex, and most valuable moveable structures
- ❑ Their design is expensive, conservative and targets long life time
- ❑ They are manufactured in short series under strict HSE standards
- ❑ They are regulated by international rules and regulations

# Course aim

## ❑ *Understand the fundamental principles of naval architecture*

- ✓ Explain basic naval architecture terminology
- ✓ Know about design methods and tools
- ✓ Explain the connection between different ship design disciplines
- ✓ Appreciate the iterative nature of naval architecture

## ❑ *Create, analyze and evaluate a state-of-the-art ship concept*



# Prerequisites

- Naval architecture is a **systems engineering** discipline
- A lot of simple, uncertain and undefined stuff
- *The work load is high BUT....*
  - *Each lecture contributes to your knowledge*
  - *Each assignment develops your skills*
  - *The team design exercise will help you demonstrate your professional attitude*



# Course introduction

## Course name and credits

- MEC-E1004 - Principles of Naval Architecture, 5 cr

## Schedule

- 09.09.2022 - 14.12.2022 (Periods I-II)

## Course registration

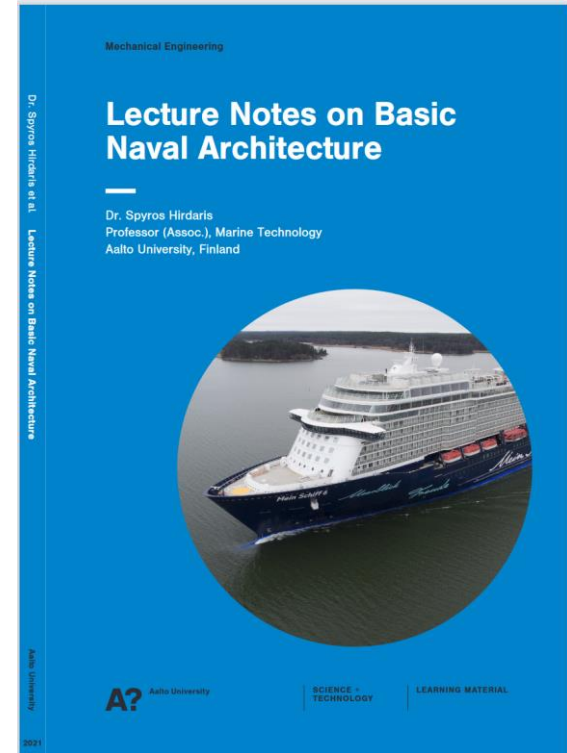
- <https://sisu.aalto.fi/student/login>
- *Remember to register, otherwise you cannot attend the exam!*

## Course information

- <https://mycourses.aalto.fi/course/view.php?id=35869>

## Examination

- 50 % exam, 50 % assignments, scale 1-5
- Marine Technology Gala (mandatory participation)



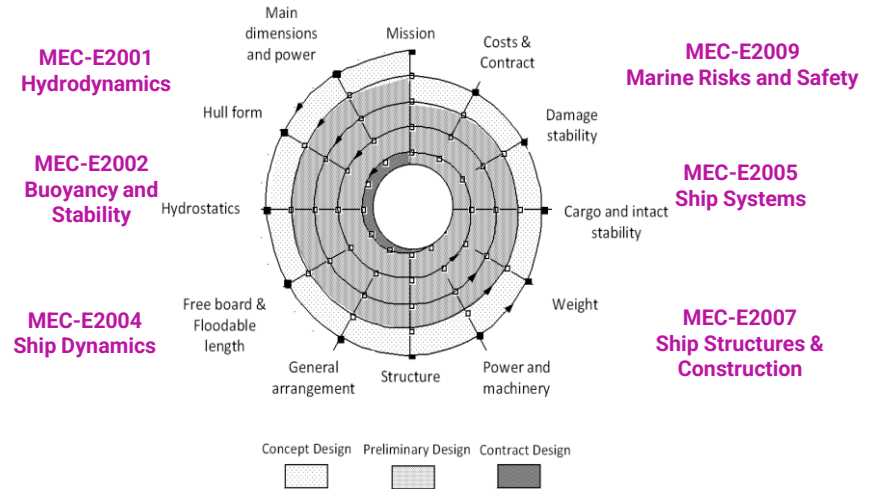
<http://urn.fi/URN:ISBN:978-952-64-0486-8>

# Course characteristics

- Individual and group problem-based learning
- Interlinked courses
- Multidisciplinary approach
- Opportunity to participate in international competitions
  - ✓ <https://www.ferrysafety.org/>
  - ✓ <https://www.njordchallenge.com>

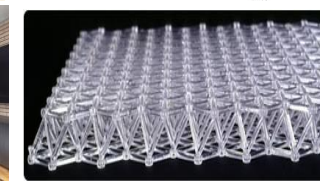
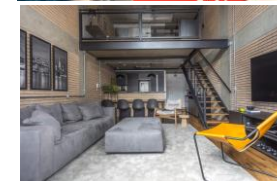
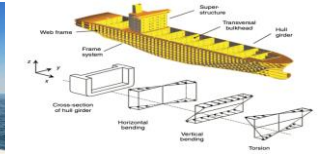
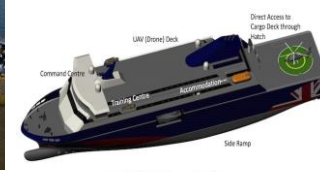


*The lectures are mainly introductory*



# Lecture Topics

1. Design context (ship mission)
2. Reference ship/data
3. Main dimensions
4. Hull form
5. Hydrostatics
6. General arrangement
7. Ship structures
8. Power, machinery & equipment
9. Weight and stability
10. Economic assessment





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**Thank you !!**

*Welcome to Marine Technology !!*

*PNA is the start of your professional life*