Aalto University
School of Engineering

MEC-E1004 Principles of Naval Architecture

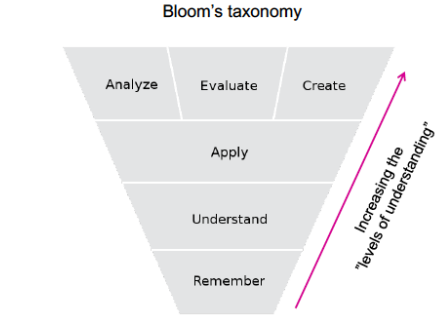
Course introduction

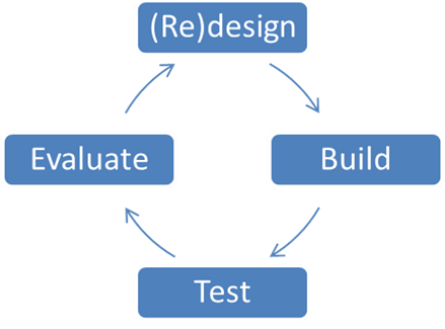
Course introduction – About Ships !

- 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

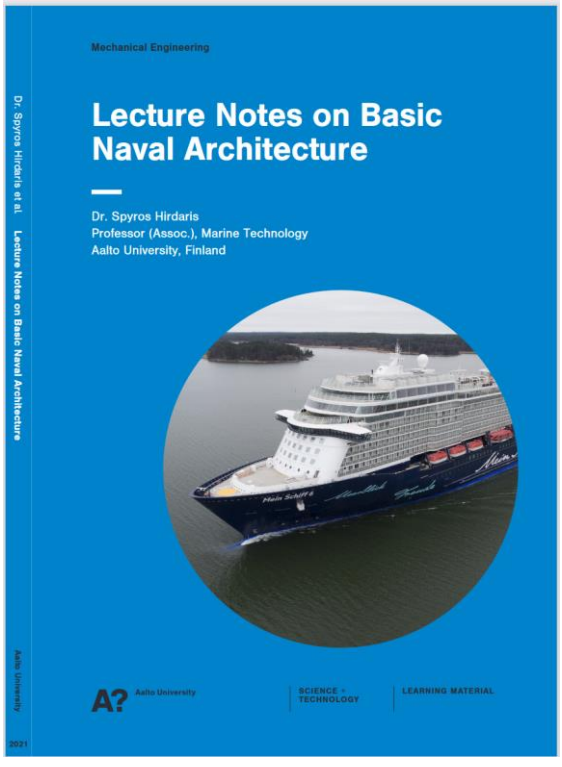
- https://sisu.aalto.fi/student/login
- *Remember to register, otherwise you cannot attend the exam!*

Course information

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

Examination

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

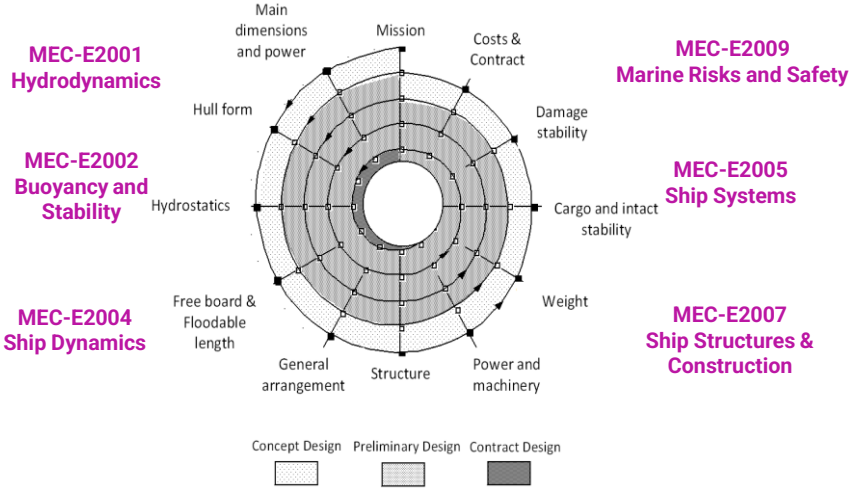


http://urn.fi/URN:ISBN:978-952-64-0486-8

Course characteristics

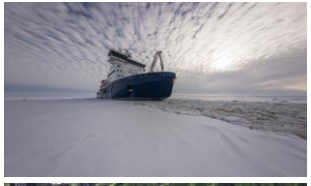
- Individual and group problem-based learning
- Interlinked courses
- Multidisciplinary approach
- Opportunity to participate in international competitions
  - ✓ *https://www.ferrysafety.org/*
  - ✓ *https://www.njordchallenge.com*

The lectures are mainly introductory

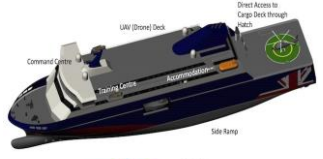


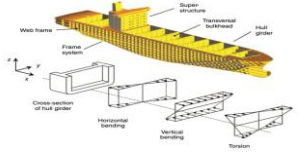
Lecture Topics

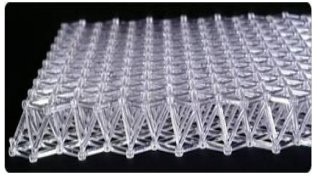
1. Design context (ship mission)
2. Reference ship/data
3. Main dimensions
4. Hull from
5. Hydrostatics
6. General arrangement
7. Ship structures
8. Power, machinery & equipment
9. Weight and stability
10. Economic assessment





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Thank you !!

Welcome to Marine Technology !!

PNA is the start of your professional life