UNSW Course Outline

ZEIT4750 Ship Design 1 - 2024

Published on the 13 Feb 2024

General Course Information

Course Code : ZEIT4750
Year : 2024
Term : Semester 1
Teaching Period : Z1
Is a multi-term course? : No
Faculty : UNSW Canberra
Academic Unit : School of Engineering and Technology
Delivery Mode : In Person
Delivery Format : Standard
Delivery Location : UNSW Canberra at ADFA
Campus : UNSW Canberra
Study Level : Undergraduate
Units of Credit : 6

Useful Links

Handbook Class Timetable

Course Details & Outcomes

Course Description

In response to a nominated design brief, all essential ship design tasks are individually completed to a preliminary stage in Ship Design 1: Principal particulars; hull lines; general arrangement; estimate of weights and centres; resistance calculation; machinery selection; performance prediction and structural design, culminating in a presentation and defence.

Course Aims

The course is capstone in nature and forms the first stage of a final-year ship design in the standard BE (Hons) (Naval Architecture) program and its CDF variant (Level 4 Core Course).The course provides the opportunity to develop, practice and apply skills in the key area of Ship Design.

Relationship to Other Courses

This course is the first of two parts of the Year 4 Ship Design Project. It builds on the foundational knowledge gained in the Year 3 naval architecture core courses of hydrostatics, practice, hydrodynamics, ship structures and ship design fundamentals and is taken in parallel with marine engineering and propulsion. It is the first opportunity for the student of naval architecture to apply their knowledge to the creative synthesis of their first ship design! Pre-requisites courses are ZEIT3751, ZEIT3752, and either ZEIT3753 or ZEIT3902.

Course Learning Outcomes

Course Learning Outcomes	Engineers Australia - Professional Engineer (Stage 1)
CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of the provided design brief	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.1 : Ethical conduct and professional accountability • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct
CLO2 : Practice and develop the skills required to electronically generate a ship's hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE2.1 : Application of established

	engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.5 : Orderly management of self, and professional conduct
CLO3 : Perform an initial weight estimate for the vessel and produce a editable record of item masses and centres for stability assessment	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct
CLO4 : Calculate the resistance of the vessel, derive and specify the preliminary power required to achieve the required speed, make initial engine(s) and gearbox selections and specify the preliminary propulsion type	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering

	discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct
CLO5 : Be capable of selecting an appropriate structural rule, commence the calculation of the scantlings of the principal structure using electronic rule sets and prepare a preliminary electronic structural general arrangement drawing	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct

Course Learning Outcomes	Assessment Item
CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of the provided design brief	• Statement of Requirements, design lanes study, prelim. principal particulars: Report • Initial geometry, GA & MSS: Report & drawings • Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings • Preliminary stability analysis and final Stage A design: Report & drawings • Viva/Presentation
CLO2 : Practice and develop the skills required to electronically generate a ship's hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set	• Statement of Requirements, design lanes study, prelim. principal particulars: Report • Initial geometry, GA & MSS: Report & drawings • Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings • Preliminary stability analysis and final Stage A design: Report & drawings • Viva/Presentation
CLO3 : Perform an initial weight estimate for the vessel and produce a editable record of item masses and centres for stability assessment	• Initial geometry, GA & MSS: Report & drawings • Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings • Preliminary stability analysis and final Stage A design: Report & drawings • Viva/Presentation
CLO4 : Calculate the resistance of the vessel, derive and specify the preliminary power required to achieve the required speed, make initial engine(s) and gearbox selections and specify the preliminary propulsion type	• Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings • Preliminary stability analysis and final Stage A design: Report & drawings • Viva/Presentation
CLO5 : Be capable of selecting an appropriate structural rule, commence the calculation of the scantlings of the principal structure using electronic rule sets and prepare a preliminary electronic structural general arrangement drawing	• Initial geometry, GA & MSS: Report & drawings • Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings • Preliminary stability analysis and final Stage A design: Report & drawings • Viva/Presentation

Learning and Teaching Technologies

Moodle - Learning Management System | Microsoft Teams

Learning and Teaching in this course

Teaching Strategies

The teaching strategies employed in Stage 1 of this capstone design course in the discipline of naval architecture have at their heart, a close weekly two-way exchange between the course convener/lecturers and the small student cohort, in group and individual learning contexts. The high instructor-to-student ratio allows plentiful feedback and support, designed to foster the earliest possible development of solid technical skills and appreciation of the critical nature of highly professional practice in naval architecture. Training in the use of industry-leading Maxsurf and other design analysis software supports the learning outcomes in a practical manner, pre-professional practice manner. Professional communication skills are developed in an end-of-semester individual Stage A design presentation and defence to course staff and industry leaders, providing a launchpad for Ship Design 2 in S2-2024.

The Learning Management System

Moodle is the Learning Management System used at UNSW Canberra. All courses have a Moodle site which will become available to students at least one week before the start of semester. Please find all help and documentation (including Blackboard Collaborate) at the Moodle Support page.

UNSW Moodle supports the following web browsers:

» Google Chrome 50+
» Safari 10+
** Internet Explorer is not recommended

** Addons and Toolbars can affect any browser's performance.

Operating systems recommended are:

Windows 7, 10, Mac OSX Sierra, iPad IOS10

For further details about system requirements click here.

Log in to Moodle here.

If you need further assistance with Moodle:

For enrolment and login issues please contact:
IT Service Centre
Email: itservicecentre@unsw.edu.au

Phone: (02) 9385-1333
International: +61 2 9385 1333

For all other Moodle issues please contact:
External TELT Support
Email: externalteltsupport@unsw.edu.au
Phone: (02) 9385-3331
International: +61 2 938 53331

Opening hours:
Monday – Friday 7:30am – 9:30 pm
Saturday & Sunday 8:30 am – 4:30pm

Other Professional Outcomes

Design as research

Design decisions are best derived from a well-reasearch, evidence-based origin. A key outcome of this course is "bringing it all together" in preliminary form, before crystallising your design decisions in final form next semester.

Your research and evidence base will make the job of explaining and defending your design decisions, both in writing and orally, that much easier. This will be assessed in your presentation.

Additional Course Information

Students in this course will need to develop their knowledge and skills in specialist naval architecture software such as Maxsurf to a high level in order to develop, analyse and communicate their design ideas. Design decisions must be explained and defended in written and oral formats.

Referencing

In this course, students are required to reference following the APA 7 referencing style. Information about referencing styles is available at: https://guides.lib.unsw.adfa.edu.au/c.php?g=472948&p=3246720

Study at UNSW Canberra

https://www.unsw.adfa.edu.au/study

Study at UNSW Canberra has lots of useful information regarding:

- Where to get help
- Administrative matters
- Getting your passwords set up
- How to log on to Moodle
- Accessing the Library and other areas.

Additional Information as required

CRICOS Provider no. 00098G

The University of New South Wales Canberra.

Assessments

Assessment Structure

Assessment Item	Weight	Relevant Dates	Engineers Australia - Professional Engineer (Stage 1)
Statement of Requirements, design lanes study, prelim. principal particulars: Report Assessment Format: Individual	10%	Start Date: Not Applicable Due Date: Week 3: 11 March - 15 March Post Date: 15/03/2024 05:00 PM	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of

			systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.1 : Ethical conduct and professional accountability • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct
Initial geometry, GA & MSS: Report & drawings Assessment Format: Individual	15%	Start Date: Not Applicable Due Date: Week 6: 01 April - 05 April Post Date: 05/04/2024 05:00 PM	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE1.5 : Knowledge of engineering design practice and contextual

			factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.1 : Ethical conduct and professional accountability • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct
Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings Assessment Format: Individual	25%	Start Date: Not Applicable Due Date: Week 11: 20 May - 24 May Post Date: 24/05/2024 05:00 PM	• PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual

			understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.1 : Ethical conduct and professional accountability • PEE3.2 : Effective oral and written communication in professional and lay domains

			• PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information • PEE3.5 : Orderly management of self, and professional conduct
Preliminary stability analysis and final Stage A design: Report & drawings Assessment Format: Individual	25%	Start Date: Not Applicable Due Date: Week 13: 03 June - 07 June Post Date: 07/06/2024 05:00 PM	• PEE3.6 : Effective team membership and team leadership • PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering discipline • PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent

			application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.1 : Ethical conduct and professional accountability • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information
Viva/Presentation Assessment Format: Individual	25%	Start Date: Not Applicable Due Date: Exam week.	• PEE3.6 : Effective team membership and team leadership • PEE1.1 : Comprehensive, theory based understanding of the underpinning natural and physical sciences and the engineering fundamentals applicable to the engineering discipline • PEE1.2 : Conceptual understanding of the mathematics, numerical analysis, statistics, and computer and information sciences which underpin the engineering discipline • PEE1.3 : In-depth understanding of specialist bodies of knowledge within the engineering discipline • PEE1.4 : Discernment of knowledge development and research directions within the engineering

			discipline • PEE1.5 : Knowledge of engineering design practice and contextual factors impacting the engineering discipline • PEE1.6 : Understanding of the scope, principles, norms, accountabilities and bounds of sustainable engineering practice in the specific discipline • PEE2.1 : Application of established engineering methods to complex engineering problem solving • PEE2.2 : Fluent application of engineering techniques, tools and resources • PEE2.3 : Application of systematic engineering synthesis and design processes • PEE2.4 : Application of systematic approaches to the conduct and management of projects within the technology domain • PEE3.1 : Ethical conduct and professional accountability • PEE3.2 : Effective oral and written communication in professional and lay domains • PEE3.3 : Creative, innovative and pro-active demeanour • PEE3.4 : Professional use and management of information

Assessment Details

Statement of Requirements, design lanes study, prelim. principal particulars: Report

Assessment Overview

n/a

Course Learning Outcomes

- CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of the provided design brief
- CLO2 : Practice and develop the skills required to electronically generate a ship’s hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set

Detailed Assessment Description

Due Week 3 - 15 March 17:00. This assignment is the first step in researching and defining the principal particulars and geometry of your chosen vessel type, with clear focus on the evidence you've found to justify your preliminary particulars. This is assisted by your best efforts using the Maxsurf suite.

Assessment Length

Typed or neatly written - approx. 10 pages.

Submission notes

via Moodle.

Assessment information

See the course Moodle and/or Teams sites for further information.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Initial geometry, GA & MSS: Report & drawings

Assessment Overview

n/a

Course Learning Outcomes

- CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of

the provided design brief
- CLO2 : Practice and develop the skills required to electronically generate a ship's hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set
- CLO3 : Perform an initial weight estimate for the vessel and produce a editable record of item masses and centres for stability assessment
- CLO5 : Be capable of selecting an appropriate structural rule, commence the calculation of the scantlings of the principal structure using electronic rule sets and prepare a preliminary electronic structural general arrangement drawing

Detailed Assessment Description

Following assessment 1, the focus of this work is the preliminary general arrangement and mid-ship section, with supporting notes and drawings in an engineering report.

Assessment Length

10 page report and drawings.

Submission notes

via Moodle.

Assessment information

More details will be posted on the course Moodle and/or Teams sites.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Weight estimate, updated geometry, GA & initial resistance/powering: Report & drawings

Assessment Overview

n/a

Course Learning Outcomes

- CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of the provided design brief
- CLO2 : Practice and develop the skills required to electronically generate a ship's hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set
- CLO3 : Perform an initial weight estimate for the vessel and produce a editable record of item masses and centres for stability assessment
- CLO4 : Calculate the resistance of the vessel, derive and specify the preliminary power required to achieve the required speed, make initial engine(s) and gearbox selections and specify the preliminary propulsion type

- CLO5 : Be capable of selecting an appropriate structural rule, commence the calculation of the scantlings of the principal structure using electronic rule sets and prepare a preliminary electronic structural general arrangement drawing

Detailed Assessment Description

Attention to the weight estimate is a focus of this work, ahead of attention to stability analysis. Further work on the hull shape, appendages and GA, followed by the definition of preliminary resistance and powering is also undertaken.

Assessment Length

As a guide, a 20-page report and drawings.

Submission notes

via Moodle.

Assessment information

Additional details will be posted to the course Moodle and/or Teams sites.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Preliminary stability analysis and final Stage A design: Report & drawings

Assessment Overview

n/a

Course Learning Outcomes

- CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of the provided design brief
- CLO2 : Practice and develop the skills required to electronically generate a ship’s hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set
- CLO3 : Perform an initial weight estimate for the vessel and produce a editable record of item masses and centres for stability assessment
- CLO4 : Calculate the resistance of the vessel, derive and specify the preliminary power required to achieve the required speed, make initial engine(s) and gearbox selections and specify the preliminary propulsion type
- CLO5 : Be capable of selecting an appropriate structural rule, commence the calculation of the scantlings of the principal structure using electronic rule sets and prepare a preliminary electronic structural general arrangement drawing

Detailed Assessment Description

After finalising all applicable intact and damaged stability analysis at preliminary stage, your report will detail all design work undertaken across all areas ahead of your presentation and defence of your preliminary design.

Assessment Length

As a guide, 15 pages plus drawings.

Submission notes

via Moodle.

Assessment information

Additional details will be posted to the course Moodle and/or Teams sites.

Assignment submission Turnitin type

This assignment is submitted through Turnitin and students do not see Turnitin similarity reports.

Viva/Presentation

Assessment Overview

n/a

Course Learning Outcomes

- CLO1 : Develop a systematic process to collect basis ship data from the literature and analyse it to decide on a set of preliminary principal particulars to meet the requirements of the provided design brief
- CLO2 : Practice and develop the skills required to electronically generate a ship’s hullform and translate it into a preliminary lines plan and general arrangement electronic drawing set
- CLO3 : Perform an initial weight estimate for the vessel and produce a editable record of item masses and centres for stability assessment
- CLO4 : Calculate the resistance of the vessel, derive and specify the preliminary power required to achieve the required speed, make initial engine(s) and gearbox selections and specify the preliminary propulsion type
- CLO5 : Be capable of selecting an appropriate structural rule, commence the calculation of the scantlings of the principal structure using electronic rule sets and prepare a preliminary electronic structural general arrangement drawing

Detailed Assessment Description

You wil present and defend your preliminary design to course staff and colleagues at a design symposium.

Assessment Length

Guide: 45 minute presentation and defence.

Assessment information

Final details will be posted to the course Moodle and/or Teams site.

Assignment submission Turnitin type

Not Applicable

Hurdle rules

Achievement of a minimum of 50% in the final presentation is required to pass the course.

General Assessment Information

Students will receive both oral and written feedback of Assessment 1 before the census date (24 March), as well as the opportunity to seek support with their understanding of next steps.

We will hold an in-class clinic to discuss expectations ahead of the final presentations.

Late Submission of Assessment

- Unless prior arrangement is made with the lecturer or a formal application for special consideration is submitted, a penalty of 5% of the total available mark for the assessment will apply for each day that an assessment item is late up to a maximum of 5 days (120 hours) after which an assessment can no longer be submitted and a grade of 0 will be applied.

Use of Generative AI in Assessments

This statement clarifies the University's position on assessment integrity, given the rise in access to generative AI platforms.

SIMPLE EDITING ASSISTANCE

For all assessment tasks, you may use standard editing and referencing software, but not Generative AI. You are permitted to use the full capabilities of the standard software to answer the question (e.g. you may wish to specify particular software such as Microsoft Office suite, Grammarly, etc.).

If the use of generative AI such as ChatGPT is detected, it will be regarded as serious academic misconduct and subject to the standard penalties, which may include 00FL, suspension and exclusion.

Grading Basis

Standard

Requirements to pass course

The overall passing mark is set at 50% by the university. **Achievement of a minimum of 50% in the examination (final presentation) is required to pass the course.**

Course Schedule

Teaching Week/Module	Activity Type	Content
Week 1 : 26 February - 1 March	Lecture	Wed: Client brief: Define requirements & decide subject vessel type (David Lyons). Thu: Commence design journal, setting up a design file structure. Research, data collection and design methods (David Lyons).
Week 2 : 4 March - 8 March	Lecture	Wed: Enabling modules (economics, data, optimisation, virtual design/ DT) (David Lyons) Thu: Enabling modules (economics, data, optimisation, virtual design/ DT) (David Lyons) incorporates tutorial hour.
Week 3 : 11 March - 15 March	Lecture	Wed: Preliminary design 1; Warship “hot topics”. (David Lyons) Thu: Preliminary design 2; Naval ship rules and regulations. (David Lyons) incorporates tutorial. Assessment 1 due 15 March at 5pm.
Week 4 : 18 March - 22 March	Lecture	Wed: First formal journal and design review & feedback. (David Lyons) Thu: First formal journal and design review & feedback. (David Lyons) incorporates tutorial.
Week 5 : 25 March - 29 March	Tutorial	Wed: Enabling modules (software focus) (David Lyons) Thu: Enabling modules (rules and structures focus) (David Lyons)
Week 6 : 1 April - 5 April	Tutorial	Wed and Thu: Further enabling modules (Maxsurf extensions, Hydrocomp, CFD/ FEA) (David Lyons) NOTE: MV Sycamore cruise dates to be announced and confirmed by this week. Assessment 2 due 5 April at 5pm.
Week 7 : 22 April - 26 April	Fieldwork	Tasmania: Excursion AMC Launceston and shipyard visits in Hobart (David Lyons and Warren Smith)
Week 8 : 29 April - 3 May	Lecture	Wed: Weight and structure (David Lyons) Thu: Weight and structure (David Lyons) includes tutorial.
Week 9 : 6 May - 10 May	Lecture	Wed: Stability (David Lyons) Thu: Stability (David Lyons) includes tutorial.
Week 10 : 13 May - 17 May	Lecture	Wed and Thu: Resistance, seakeeping and manoeuvring; powering and propulsion. (David Lyons) includes tutorial.
Week 11 : 20 May - 24 May	Lecture	Wed and Thu: Systems and marine engineering (David Lyons and special guest Sean McCracken) includes tutorial. Assessment 3 due 24 May at 5pm.
Week 12 : 27 May - 31 May	Tutorial	Wed and Thu: Further design discussion, review and feedback; second formal journal and design review and feedback. (David Lyons and Warren Smith)
Week 13 : 3 June - 7 June	Seminar	Broader design topics. (David Lyons and Warren Smith) Contingency for design presentation and defence this week. (David Lyons and Warren Smith) Assessment 4 (written component) due 7 June at 5pm. Assessment 5 (viva exam/presentation) - Final details will be posted to the course Moodle and/or Teams site, and be conducted during the exam week.

Attendance Requirements

Students are strongly encouraged to attend all classes and review lecture recordings.

General Schedule Information

Each week, we will meet on two different days (Wednesday and Thursday), where we will cover the following aspects of good ship design practice and management:

The client brief.

Definition of requirements.

Decide vessel type (individual student projects).

Setting up your design journal.

Setting up a design file structure.

Data collection and design methods.

Enabling modules: economics; data; optimization; software; digital twinning; rules; structures/ scantlings; CFD/FEA.

Warship "hot topics".

Naval ship rules and regs.

Formal journal and design review and feedback.

Weight and structure.

Stability (intact and damaged).

Resistance, seakeeping and manoeuvring.

Powering and propulsion.

Systems and marine engineering.

Further design review and feedback (including journal review).

Broader topics in ship design.

In Week 7, there will be no lecture or tutorial on Wednesday (Military Training Day) or Thursday (Anzac Day public holiday).

Course Resources

Prescribed Resources

Compulsory Texts:

Principles of Naval Architecture | SNAME 6 chapter set (at SNAME Student Member price[1])

Tupper, E.C. (2013), *Introduction to Naval Architecture*, 5th ed., Butterworth Heinemann, London.
Introduction to Naval Architecture | ScienceDirect (unsw.edu.au)

[1] SNAME student membership:

Add - BNE SNAME Online Membership Individual Information

Recommended Resources

Reference is made to several supporting texts throughout this course which are available in electronic and/or physical form via the UNSW Canberra library. Also see the subject guide at ADFA Library subject guide – Naval Architecture:

1. The International Code on Intact Stability, 2008 (2020 edition), International Maritime Organisation, London, UK.
2. Lamb, T.C. (Ed.) (2003 and 2004), *Ship Design and Construction*, v.1 and 2, Society of Naval Architects and Marine Engineers, Jersey City, USA.
3. Rawson, K.J. and Tupper, E.C. (2001), *Basic Ship Theory*, Butterworth Heinemann, London.

Other resources are available on this course's Teams and Moodle sites.

Useful websites:

Bureau Veritas https://www.bureauveritas.com.au/

Australian Naval Classification Authority RINA ANCA

Lloyd's Register www.lr.org

DNV www.dnv.com

Additional Costs

There will be some out-of-pocket expenses for the Tasmania (and MV Sycamore - not formally part of this course but planned with it) excursions but accommodation, meals and transport are covered as part of the course.

Course Evaluation and Development

Feedback will be sought and collected throughout the running of this course, for the first time with a cohort of several students. In 2023, one student was the inaugural enrolee. The close one-on-one and small staff to student ratio nature of this course is a hallmark of its aim to foster the best environment for undertaking the first of two stages of this Year 4 capstone ship design project.

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of this course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the "On-going Student Feedback" link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups. Student opinions really do make a difference. Refer to the Moodle site for this course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct Policy

https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf

Staff Details

Position	Name	Email	Location	Phone	Availability	Equitable Learning Services Contact	Primary Contact
Convenor	David Lyons		B21 368	0290659480	Teams message, email or phone for an individual appointment.	Yes	Yes
Lecturer	Warren Smith		B20 135	0251145208	Teams message, email or phone for an individual appointment.	No	No

Other Useful Information

Academic Information

Course Evaluation and Development

One of the key priorities in the 2025 Strategy for UNSW is a drive for academic excellence in education. One of the ways of determining how well UNSW is progressing towards this goal is by listening to our own students. Students will be asked to complete the myExperience survey towards the end of each course.

Students can also provide feedback during the semester via: direct contact with the lecturer, the "On-going Student Feedback" link in Moodle, Student-Staff Liaison Committee meetings in schools, informal feedback conducted by staff, and focus groups (where applicable). Student opinions really do make a difference. Refer to the Moodle site for your course to see how the feedback from previous students has contributed to the course development.

Important note: Students are reminded that any feedback provided should be constructive and professional and that they are bound by the Student Code of Conduct.

https://www.gs.unsw.edu.au/policy/documents/studentcodepolicy.pdf

Equitable Learning Services (ELS)

Students living with neurodivergent, physical and/or mental health conditions or caring for someone with these conditions may be eligible for support through the Equitible Learning Services team. Equitable Learning Services is a free and confidential service that provides practical support to ensure your mental or physical health conditions do not adversely affect your studies.

Our team of dedicated **Equitable Learning Facilitators** (ELFs) are here to assist you through this process. We offer a number of services to make your education at UNSW easier and more equitable.

Further information about ELS for currently enrolled students can be found at: https://www.student.unsw.edu.au/equitable-learning

Academic Honesty and Plagarism

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW staff and students have a responsibility to adhere to this principle of academic integrity. All students are expected to adhere to UNSW's Student Code of Conduct. Find relevant information at: Student Code of Conduct (unsw.edu.au)

Plagiarism undermines academic integrity and is not tolerated at UNSW. It is defined as using the words or ideas of others and passing them off as your own, and can take many forms, from deliberate cheating to accidental copying from a source without acknowledgement.

For more information, please refer to the following:

https://student.unsw.edu.au/plagiarism

Submission of Assessment Tasks

Special Consideration

Special Consideration is the process for assessing and addressing the impact on students of short-term events, that are beyond the control of the student, and that affect performance in a specific assessment task or tasks.

Applications for Special Consideration will be accepted in the following circumstances only:

- Where academic work has been hampered to a substantial degree by illness or other cause;
- The circumstances are unexpected and beyond the student's control;
- The circumstances could not have reasonably been anticipated, avoided or guarded against by the student; and either:

(i) they occurred during a critical study period and was 3 consecutive days or more duration, or a total of 5 days within the critical study period; or

(ii) they prevented the ability to complete, attend or submit an assessment task for a specific date (e.g. final exam, in class test/quiz, in class presentation)

Applications for Special Consideration must be made as soon as practicable after the problem occurs and at the latest within three working days of the assessment or the period covered by the supporting documentation.

By sitting or submitting the assessment task the student is declaring that they are fit to do so and cannot later apply for Special Consideration (UNSW 'fit to sit or submit' requirement).

Sitting, accessing or submitting an assessment task on the scheduled assessment date, after applying for special consideration, renders the special consideration application void.

Find more information about special consideration at: https://www.student.unsw.edu.au/special/consideration/guide

Or apply for special consideration through your MyUNSW portal.

Late Submission of assessment tasks (other than examinations)

UNSW has a standard late submission penalty of:

- 5% per day,
- capped at five days (120 hours) from the assessment deadline, after which a student cannot submit an assessment, and
- no permitted variation.

Students are expected to manage their time to meet deadlines and to request extensions as early as possible before the deadline.

Electronic submission of assessment

Except where the nature of an assessment task precludes its electronic submission, all assessments must be submitted to an electronic repository, approved by UNSW or the Faculty, for archiving and subsequent marking and analysis.

Release of final mark

All marks obtained for assessment items during the session are provisional. The final mark as published by the university following the assessment review group meeting is the only official mark.