NAVL4120 AND NAVL4130

SHIP DESIGN PROJECT A AND B

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   Credit point

are, in effect, one complete design project with the preliminary design being done in S1, and the resistance, powering and structure, and the final design being done in S2.

Aims of the course

These courses expose you to the reality of accepting a design brief (a set of requirements for a vessel) from a client, researching the requirements, coming up with the design of a vessel which will meet those requirements, and preparing the documentation (drawings, calculations and specification of outfit items) to describe the vessel so that it may be built.

These courses also provide you with a solid grounding in the overall ship design process. This includes data collection, deciding on the principal particulars, generating a suitable hullform, deciding on the general arrangement of the vessel, estimating the mass and the location of its centre of gravity, assessing the stability of the vessel against an appropriate set of criteria, providing structural details in accordance with classification society requirements, and analysing the resistance of the vessel to come up with the powering requirements and propeller(s) to suit.

In these courses you will use information and skills from *all* other NAVL courses:

NAVL3120 Ship Design and Propulsion	Design aspects and propeller
NAVL3410 Ship Structures 1	Structural arrangement
NAVL3610 Ship Hydrostatics and Practice	Hydrostatics and stability
NAVL3620 Ship Hydrodynamicsures 1	

3. Estimate the mass of the vessel and the location of its centre of gravity, and assess the stability of the vessel.

Assignments will be handed out in hard copy in class, and will also be posted on the Moodle site in case you miss the class.

NAVL4120 Semester 1

Assessment	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Marks returned
1	20%	1	Data collection, calculations and report	Thur 24/3/16, hard copy	One week after submission
2	20%	2	Drawing and report	Thur 21/4/16, hard copy	One week after submission
3	30%	2	Drawing and report	Thur 12/5/16, hard copy	One week after submission
4	30%	3	Calculations and report	Thur 2/6/16, hard copy	One week after submission
Total	100%				

NAVL4130 Semester 2

Assessment	Weight	Learning outcomes assessed	Assessment criteria	Due date and submission requirements	Marks returned
[redacted]					

All working shown.
Use of diagrams, where appropriate, to support or illustrate the calculations.
Use of graphs, were appropriate, to support or illustrate the calculations.
Use of tables, where appropriate, to support or shorten the calculations.
Neatness.

For drawings:

Comprehensiveness of information.
Compliance with drawing standards.
Clarity of presentation.
Labelling.
Neatness.

For reports:

Examinations

There is no final examination in either of these courses.

Special consideration and supplementary assessment

For details of applying for special consideration and conditions for the award of supplementary assessment, see the School intranet, and Special Consideration page.

6. Expected resources for students

Textbooks

There is no required textbook for either of these courses. Textbooks and lecture notes from *all* other NAVL courses are relevant and can be used for your design project.

Suggested additional readings

Lamb, T. (Ed.) (2003 and 2004), *Ship Design and Construction*, v.1 and 2, Society of Naval Architects and Marine Engineers, Jersey City.

Larsson, L. and Eliasson, R.E. (2007), *Principles of Yacht Design*, 3rd Ed., Adlard Coles Nautical, London.

Claughton, R.E., Wellicome, J.F. and Shenoi, A. (Eds), *Sailing Yacht Design: Theory* (v.1) *and Practice* (v.2), Longman, London.

Skene, N.L. and Kinney, F.S. (1981), *Skene's Elements of Yacht Design*, 8th Ed., Dodd Mead & Co., New York.

These are all available in the UNSW Library and are useful as additional reading material.

Lamb (2003 and 2004) are textbooks for other naval architecture courses at UNSW and are also available for purchase from the Society of Naval Architects and Marine Engineers, Jersey City, USA. However, the price to non-members (of any one book) exceeds the member price plus the cost of student membership, so it is advisable to join the Society and order the books at the same time. Please see the course convenor for an application form if you wish to do this.

In 2012 the first two assignments (collection of data and estimation of preliminary dimensions) were combined into one assignment.

In 2013 the marks for Assignments 1 and 4 were re-arranged from 25/25 to 20/30 to better align with the effort required.

In 2014 the notes on exporting Maxsurf hullforms to AutoCAD were massively revised.

In 2015 the *SSC Calculation Procedures* and *SSC Design Details* guidance notes were obtained from [redacted] and placed on the Moodle site.

8. [redacted]

UNSW has an ongoing commitment to fostering a culture of learning informed by academic integrity. All UNSW students have a responsibility to adhere to this principle of academic integrity. Plagiarism undermines academic integrity and is not tolerated at UNSW. *Plagiarism at UNSW is defined as using the words or ideas of others and passing*

Appendix A: Engineers Australia (EA) Professional Engineer Competency Standards

	Program Intended Learning Outcomes
PE1: Knowledge and Skill Base	PE1.1 Comprehensive, theory-based understanding of underpinning fundamentals
	PE1.2 Conceptual understanding of underpinning maths, analysis, statistics, computing
	PE1.3 In-depth understanding of specialist bodies of knowledge
	PE1.4 Discernment of knowledge development and research directions
	PE1.5 Knowledge of engineering design practice
	PE1.6 Understanding of scope, principles, norms, accountabilities of sustainable engineering practice
PE2: Engineering Application Ability	PE2.1 Application of established engineering methods to complex problem solving
	PE2.2 Fluent application of engineering techniques, tools and resources
	PE2.3 Application of systematic engineering synthesis and design processes
	PE2.4 Application of systematic approaches to the conduct and management of engineering projects
PE3: Professional and Personal Attributes	PE3.1 Ethical conduct and professional accountability
	PE3.2 Effective oral and written communication (professional and lay domains)