EMship+ key points

> An interdisciplinary combination of technical, scientific and management skills obtained through a worldwide unique qualification program supported by nine leading universities, offering a double degree Master diploma and excellent career opportunities to graduates.

> Four different specializations offered during the second year, after a one-year common core.

> The opportunity to experience a variety of academic and cultural environments through a mobility scheme covering two or three different countries.

> An international network of associated universities and industrial partners.

Tuition fees (with health insurance)

> 8.500 € per year for Non-EU students

> 4.500 € per year for EU-students.

Scholarships

Scholarships from European Union (EACEA) are available covering living expenses (1000 €/month) , travel expenses, health insurance and full tuition fees

Language

> All the lectures are in English.

> French, German, Polish and Spanish language courses are available in corresponding 2nd year universities

Job prospects

> ship and marine structures design

> numerical simulation for fluids and structures

> marine renewable energies

> building and maintenace in shipyards

> safety and sustainibility management

> ...

Application

Online on http://www.emship.eu

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With the support of the Erasmus+ Programme of the European Union

Erasmus Mundus Master

Advanced Design of Ships and Offshore Structures

EMship+
Advanced Design

www.emship.eu

EMship+

The EMship+ Master Course provides an outstanding university program in Naval Architecture, Ship and Offshore Design in 2 years -120 ECTS Credits - Master Course

Admission criteria

Some pre-requisites in mathematics, physics, solid mechanics, materials science, fluid mechanics, dynamics of mechanical systems and computer programming are required.

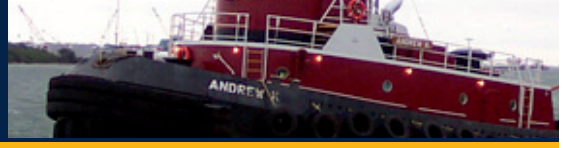
English B2 level (TOEFL) or equivalent is required too.

Candidates with specific CVs are also invited to apply:

Engineers searching for advanced education in :

- Hydrodynamic and structural analyses of ships and offshore structures,
- CAD and information technology,
- Shipyard and production technology,
- Commercial ships , mega/motor yachts, sailing pleasure crafts , ...
- Offshore Wind Energy (Supply vessels, Offshore wind turbines, FOWT, ...),
- Ocean Engineering (Oil and Gas technology)

EMship+ directly relates to the future needs of the European and international marine industry.



Consortium

The consortium is composed of nine European universities with a strong expertise in the diverse fields of Marine Engineering:

> **University of Liège** (Belgium) coordinator of the program http://www.anast.ulg.ac.be

> **University of Rostock** (Germany) http://www.schiffbauforschung.de

> **West Pomeranian University of Technology** (Poland) http://www.wtm.zut.edu.pl

> **Polytechnic University of Madrid** (UPM) http://www.upm.es/internacional

> **Centrale Nantes** (France) http://www.ec-nantes.fr

> **Dunarea de Jos University of Galati** (Romania) http://www.ugal.ro

> **ICAM - Institut Catholique d'Arts et Métiers** (France)

> **University of Genova** (Italy) http://www.unige.it

> **Southampton Solent University** (UK) http://www.solent.ac.uk/

The consortium includes seven associated partners from prestigeous universities worldwide:

> **University of Michigan** (USA)

> **University of Osaka** (Japan)

> **Istanbul Technical University** (Turkey)

> **Federal University of Rio de Janeiro** (Brasil)

> **Pusan National University** (South Korea)

> **University of New South Wales** (Australia)

> **University of Sciences and Technology of Oran** (Algeria)

A Strategic Advisory Board consisting of high level decision markers of leading European maritime companies and representatives from the associated universities actively contribute to the total quality management.

The EMship+ program is supported by the WEGEMT organisation (www.wegemt.org).

Study Program

The mobility scheme involves 2 years in 2 (or 3) countries:

The first year (60 credits) is dedicated to general lectures in mechanical engineering (1st semester) and in Advanced Ship Design (2nd semester) in University of Liège.

1st YEAR University of Liège (Belgium) 1st semester: Mechanical Engineering	*30 ECTS*	2nd semester: Advanced ship design	*30 ECTS*
Mandatory Modules	*ECTS*	*Mandatory Modules*	*ECTS*
Manufacturing Process	5	Integrated design project of ships, small crafts and high speed vessels	15
Theory of Vibration	5	Ship theory : statics and dynamics	5
Materials selection	5	Ship & offshore structures	5
Principles of Management	5	Ship equipment & propulsion systems	5
Electives modules in computational mechanics	10		

The second year is dedicated to advanced lectures in one of the four universites below (1st semester, 30 ECTS) and Master Thesis & Internship (2nd semester, 30 ECTS)

University of Rostock (Germany) **Ship Technology & Ocean Engineering**		**West Pomeranian University of Technology** (Poland) **Advanced ship & offshore structures**		**Centrale Nantes** (France) **Hydrodynamics for Ocean Engineering**		**Polytechnic University of Madrid** (Spain) **Offshore wind & renewable Marine energy**	
Modules (4 to be selected among 6)	*ECTS*	*Modules*	*ECTS*	*Modules*	*ECTS*	*Modules*	*ECTS*
Theory and Design of Floating and Founded Offshore Systems	6	Design of Ship and Offshore Structures	6	General concepts of Hydrodynamics	4	Oceanology	1.5
Selected Topics of the Analysis of Marine Structures	6	Mechanics of Ship and Offshore Structures	6	Water Waves and Sea States Modelling	4	Structural Design of OWT	8
Mathematical Models in Ship Theory	6	Production Technology of Ship and Offshore Structures	6	Waves-structure Interactions	4	Electric Generation & Export Technologies	5.5
IT in Ship Design and Production	6	Marine Power Engineering	3	Numerical Hydrodynamics	5	Manufacturing and Marine Operations	7
Safety of Ships under Damaged Conditions in Waves	6	Cost Benefit Analysis and Optimisation of Business Projects in Marine Industry	3	Experimental Hydrodynamics	4	Project Operation and Management	4
Ocean Research Technology	6	Elective modules (2 to be selected among 4, 3 ECTS each): ▪ Equipment of Ship and Offshore Structures ▪ Nonlinear Finite Element Analysis ▪ Offshore Mariculture Installations ▪ Maritime Transport	6	Naval Engineering ▪ Ship Manoeuvrability ▪ Multi-objective Optimization ▪ CFD Tools for Ship Simulation	5	Structural Analysis of Offshore Platforms	4
Team project (mandatory)	6			French Language	4		

MASTER THESIS and INTERNSHIP: 30 ECTS credits
They are prepared under the supervision of the university where students are enrolled for the 2nd year.
They can be undertaken in companies, shipyards or in universities from the EMSHIP+ consortium and world-recognized universities.

EMSHIP graduates will be awarded a double degree from University of Liège and the relevant 2nd year university.