



3.2. Course description

Generic information		
Head of Course	Igor Rudan, PhD	
Course	Ship design and construction 1	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Mandatory	
Year of Study	1 st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 30 + 0 (2 + 2 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the basic ship's dimensions and measures, transversal and longitudinal constructional elements, elementary conception of ship's strength and constructional features of different type of ships.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Parse and apply International rules for ship's construction and historical development.
2. Parse and analyse type of ship construction, structural elements of longitudinal and transversal ship's strength.
3. Parse and define cargo system, ship's equipment and ship's cargo handling equipment for different type of ships.
4. Parse and apply basic ship's dimensions and measures.
5. Properly apply the knowledge gained from the structural elements of longitudinal and transversal ship's strength in ship drawings and design.
6. Properly analyse ship's division toward purpose, type of cargo, navigational water categories, construction material, nature of shipping service, etc.
7. Define and parse technical and technological characteristics for different types of ships.

1.4. Course Outline

International rules for ship construction and historical development. Construction materials, welding, bulkheads, watertight bulkhead, watertight door. Type of ships. Structural elements of longitudinal and transversal ship's strength. Strength and stress of ship structure. Ship compartments, cargo compartments, navigation bridge and engine room. Ship's cargo handling equipment for different type of ships. Ship's operational equipment.



Type of rudders, remarks for different kind of rudders, propeller execution with main particularities. Geometrical ship's dimensions and measures. Ship drawings and design. General plan of ship with different system technology. Wind surface and under water area. Ship's division toward purpose, type of cargo, navigational water categories, construction material, nature of shipping service, etc. Technical and technological characteristics for General Cargo ships, Container Ships, Ro-Ro vessels, Bulk Carriers, Oil/Oil products and Chemical Tankers, Gas takers, Passenger liner and cruise ships and offshore vessels with different purpose and service.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active attendance of classes over 70 %. Longitudinal and transversal ship drawing – student task. Passed two written exams. Final oral exams.

1.8. Assessment¹t of Learning Outcomes

Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70 % of the course grade is based through 2 written exams in class and 30 % of the course grade is based in the oral final exam according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka.

Continuous assessment: Each written exam must have at least 60 % score.

Final oral exam (learning outcomes 1- 7) checks the competences of theoretical knowledge where it is necessary to achieve a minimum of 50 % of the required theoretical knowledge.

1.10. Main Reading

- Rudan, I., teaching materials from the course *Ship design and construction* on the teacher's personal web site (MERLIN) of the Faculty of Maritime Studies in Rijeka
- Komadina, P., *Brodovi multimodalne prijevozne tehnologije*, Pomorski fakultet u Rijeci, Rijeka, 2001.
- Komadina, P., *Ro-Ro brodovi*, Pomorski fakultet u Rijeci, Rijeka, 2001.
- Komadina, P., *Tankeri*, Pomorski fakultet u Rijeci, Rijeka, 1994.
- Buljan, I., *Stabilnost brodova*, Priručnik za pomorce, Školska knjiga Zagreb, Zagreb, 1982.
- Milošević, M., i Š., *Osnove teorije broda 1*, Sveučilište u Zagrebu, Zagreb, 1981.

1.11. Recommended Reading

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1. Vademecum Maritimus, Podsjetnik pomorcima, Pomorski fakultet u Rijeci, Rijeka, 2002.
2. Uršić, J., Stabilitet broda I. dio, Sveučilište u Zagrebu, Zagreb, 1968.
3. Uršić, J., Stabilitet broda II. dio, Sveučilište u Zagrebu, Zagreb, 1968.
4. Fatur, J., Teorija broda, Uredništvo časopisa Brodogradnja, Zagreb, 1954.
5. Milošević, M., i Š., Osnove teorije broda 1, Sveučilište u Zagrebu, Zagreb, 1981.
6. Milošević, M., i Š., Osnove teorije broda 2, Sveučilište u Zagrebu, Zagreb, 1981.
7. Barrass, B., Derrett, D. R., Ship stability for Masters and Mates, Elsevier, 2008.
8. Eyres, D. J., Ship Construction, Butterworth-Heinemann, London, 2007

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Teaching materials from the course Ship design and construction	MERLIN – online	
Ro-Ro brodovi	10	
Brodovi multimodalne prijevozne tehnologije	10	
Stabilnost broda	10	
Tankeri	10	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Renato Ivče, PhD, Professor	
Course	Cargoes in maritime transport	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	3
	Number of Hours (L+E+S)	30+0+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the College is to introduce students with characteristics of the maritime cargo transportation, the type of cargoes, the procedures when cargoes are transported by sea, and the possible dangers while certain cargo are transported by sea

1.2. Prerequisites for Course Registration

No prerequisite for this course

1.3. Expected Learning Outcomes

1 Expected students who have passed the exam may:

- 1. make distribution of cargo in maritime transport,*
- 2. perform division of dangerous cargo, its classification and know conditions of carriage by sea*
- 3. determine the importance of the packaging and the requirements for the packing of cargo provided for transport by sea*
- 4. determine the possible danger of damage to the goods while loading, unloading and transporting by sea*
- 5. define the notion of the stowage factor and the broken stowage and the meaning cargo carriage by sea*
- 6. specify the essential characteristics of significant cargoes by sea and determine the necessary conditions during transport and transshipment*

1.4. Course Outline

Introductory considerations. Types of cargo in maritime transport. Characteristic and division of dangerous goods. Packaging and mode of packing of cargo. Stowage factor and broken stowage factor. Basic danger of damage during transportation, port handling services and stowage. Fuels, characteristic and division. The transportation of refrigerated and frozen cargoes. Iron and products of iron in maritime transport. Grain and seeds in maritime transport. Other significant dry and liquid cargoes transported by sea. Cargo units of modern general cargo technologies.



1.5. Modes of Instruction		<input type="checkbox"/> Lectures X <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____			
1.6. Comments							
1.7. Student Obligations							
Active attendance of classes and at least 70% of completed classes for admission to the exam. Successful passing colloquiums and the final oral exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1	Class participation		Seminar paper	0,5	Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	1,4	Presentation		Practical work	
Portfolio		Final exam	0,6				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam is carried out in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

Through continuous assessment during the course, 70% of the acquired learning outcomes are evaluated through 1st colloquium - learning outcomes 1-3 (0.50 ECTS (35%)), 2nd colloquium - learning outcomes 3-5 (0,50 ECTS (35 %)), whereby the student must achieve a minimum of 52% of points in each exam, at the final part of the exam it is evaluated (1.0 ECTS (30%))) acquired learning outcomes (1-5) whereby a student must pass a minimum of 52% of points for passing the final exam.

Examples of evaluation of a particular learning outcome during class and at the final exam

1. Explain the generational division of dry cargoes.
2. Define the characteristics of grain,
3. Define requirements for timber transportation by sea.
4. Define requirements for transportation ore by sea.,
5. Compare cargo units for transportation general car of the world's largest ports

1.10. Main Reading

. 1.VranićD., Ivče R.,Tereti u pomorskom prometu

1.11. Recommended Reading

- 1.Vranić, D., Kos, S., Morskakontejnerska transportna tehnologija
- 2.D.J. House, Cargo Work,Butterworth-Heinemann
- 3.Biblioteka pomorskogčasnika,sv. 1,
- 4.Biblioteka pomorskogčasnikasv.2,
- 5.Biblioteka pomorskogčasnikasv. 3,
- 6.Biblioteka pomorskogčasnikasv. 4
- 7.Međunarodnipravilnicii kodeksikojise odnose na rukovanjeiprijevoztetamorem

2.D.J. House, Cargo Work,Butterworth-Heinemann	2.D.J. House, Cargo Work Butterworth-Heinemann	2.D.J. House, Cargo Work Butterworth-
Title	Number of examples	Number of students
Tereti u pomorskom prometu	9	77

1.13. Quality Assurance



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The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Albin Redžić, mag.cin.	
Course	Physical education 1	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	UNDERGRADUATE DEGREE PROGRAMME	
Type of Course	core	
Year of Study	1st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	1
	Number of Hours (L+E+S)	0+30+0 (0+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Introduce students to the importance of continuing to maintain the health of seafarers through physical exercise, basic, general and specific motor skills:

-climbing rope and ladder ladders, drowning rescue, swimming, sailing rowing.

Adequate kinesiological activities to satisfy the needs of students for movement as an expression of satisfaction of general needs that increase adaptive and creative abilities in contemporary living and study conditions. In addition, the objective of the Physical and Health Culture course is to convey basic health and work-life information to students.

1.2. Prerequisites for Course Registration

1.3. Expected Learning Outcomes

1. Improve general and specific motor skills, knowledge, skills and habits of seafarers
2. Maintain health, in particular psychological stability, as a prerequisite for the health of seafarers on board
3. Participate in more meaningful use of leisure time
4. Apply motor task resolution in seafarers emergency situations
5. Encourage the humane interpersonal relationships on which the health of the seafarers and the crew of the ship depends
6. Improve knowledge of the factors that condition the injury and illness of seafarers
7. Develop the ability to create with motor expression according to the individual characteristics of gifted seafarers.

1.4. Course Outline

Introducing students to the curriculum, teaching locations and specific equipment. Familiarity with health status and (non) activities of students. Heart rate measurement: starting position lying down, sitting, standing. Jogging. Cyclic running for up to 6 minutes. Running Technique: Matching Breathing, Hand & Leg Work. Stretching exercises. Stretching for a variety of sports.



Looseness exercises. Relaxation exercises. Climbing up and down the rope. Basic kinesiological transformations on board. Motion coordination. Kinesitherapy exercises for the preservation of the spine of seafarers. Dry swimming exercises. Hand work is waiting. Determination of basic individual swimming motor skills and student knowledge. Basic elements of swimming technique kraul. Dorsal swimming technique. Breathing. Footwork. Hand work. Typical Errors and Correction: Head Lifting, Hip Bends. Back float. Back skating. Back Germania. Swimming loads of students in three diverse groups with breakwater breathing exercises: light, medium, heavy. Static strength of seafarers. . Basics of self-defense. Stretching. Determining the personal student status of a course attending or not attending based on the attendance or non-attendance of classes and activities or inactivity in teaching.

1.5. Modes of Instruction

- | | |
|---|---|
| <input type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

Teaching classes of Physical and health education takes place in three different media: a gym, at sea and in a swimming pool. The unpredictability of weather conditions at sea will determine the number of hours of sailing. The ability to reconcile college and swimming pool hours will determine the number of swimming hours. Good weather conditions will allow more hours of teaching at sea to be maintained. Seminar paper is written by part-time students.

1.7. Student Obligations

Active class attendance and activity in at least 70% of classes.

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Active class attendance and activity in at least 70% of classes.

1.10. Main Reading

Recommendation: Heimer, S. (2003) Promicanje zdravstveno-preventivne tjelesne aktivnosti u RH. Sport za sve, 21 (35), 3-4.

1.11. Recommended Reading

- Redžić A., Redžić M.: Križobolja i tjelesno vježbanje, HSSR Sport za sve. Godina XXXVI, broj 93. 2018.
- Volčanšek B.: Bit plivanja, Kineziološki fakultet Sveučilišta u Zagrebu, Zagreb, 2002.
- Conner D., Levitt M.: Naučite jedriti, Gandalf, Zagreb, 2001.
- Graver D.K.: Scuba diving, Human Kinetics Publisher, Algoritam, Zagreb, 1993.
- Anderson B.: Stretching, Vježbe istezanja za svakodnevni fitness: trčanje, plivanje, tenis, biciklizam, skijanje, košarka, nogomet i ostale sportove, Gopal, d.o.o., Zagreb, 1997.
- Anderson B., Burke E., Pearl B.: Fitnes za sve, Gopal, d.o.o., Zagreb, 19997.
- Janković V., N. Marelić.: Odbojka, Fakultet za fizičku kulturu Sveučilišta u Zagrebu, Zagreb 1995.

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.12. Number of Main Reading (Examples)

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted. Each class is closely monitored for each (none) arrival and activity of the student on a separate sheet Physical and Health Culture, where the results of longitudinal monitoring are in general and specific psychomotor abilities, knowledge and achievements and functional abilities. The course of Physical and Health Education is evaluated for a particular semester by enrolling in the ISVU system as "PASSED".



Generic information		
Head of Course	Biserka Draščić Ban, PhD; Željko Glavan, MSc	
Course	Mathematics I	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	undergraduate	
Type of Course	core	
Year of Study	1.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+30+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The main objective of the course is to present general educational content and teach mathematics applied in other core and elective undergraduate courses as well as to point to the importance of precise expression and definition of mathematical concepts applied in undergraduate courses.

1.2. Prerequisites for Course Registration

None.

1.3. Expected Learning Outcomes

Upon completion of the course the students will be able to:

1. Recognize the main concepts of linear algebra, one variable functions and differential calculus of a function with one variable.
2. Express and correctly interpret basic results in linear algebra, and the differential calculus of a function with one variable.
3. Interpret basic operations with matrices, vectors, determinants, determine solutions of random linear systems, as well as boundary values and derivations of functions with one variable.
4. Apply the differential calculus.

1.4. Course Outline

Sets of numbers. Mathematical induction. The basics of combinatorics. Complex numbers . Determinants. Matrices. Systems of linear algebraic equations. Vectors. Series. Function with one real variable. Boundary value of a function, properties of limits of a sequence. Tabular limits of a sequence. Derivation, properties of derivatives. The differential. Differential calculus theorems. Application of the derivative.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |



1.6. Comments							
1.7. Student Obligations							
Students are expected to regularly attend classes (70 %).							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
<p>The procedure of assessment of learning outcomes is performed in the following way: Two mid-term exams and a final exam.</p> <p>TASKS:</p> <p>1) (outcomes 1, 2 and 3) Calculate: a) $\lim_{n \rightarrow \infty} \left(\frac{n^2+1}{n^2-1} \right)^{n^2+2}$ b) $\lim_{x \rightarrow 1} \ln x \ln(x-1)$</p> <p>2) (outcomes 1, 2 and 3) Determine the complex number z from equality: $\frac{z+1-i\sqrt{9}}{2} = 3 + \frac{9}{2}i$</p> <p>3) (outcomes 1, 2 and 3) Determine the expression A⁻¹ i B if:</p> $A = \begin{bmatrix} 3 & 0 & -2 \\ 0 & 4 & 5 \\ -4 & 0 & 6 \end{bmatrix}; B = 2I - A$ <p>4) (outcomes 1, 2 and 3) Determine the domain and the first derivative of a function</p> $f(x) = \frac{2x}{x^2-2x-3} + \sqrt{6-x^2} + \ln(x+5)$ <p>ORAL EXAM (outcome 2):</p> <p>1) The principle of mathematical induction</p> <p>2) The Gauss method</p> <p>3) Continuity of function</p> <p>4) Maximum and minimum values of the function with one variable</p>							
1.10. Main Reading							
<p>1. R. Dobrosavljević, Ž. Glavan, I. Kitarović, Z. Zenzerović, Matematika I, Pomorski fakultet u Rijeci, 1982, Rijeka</p> <p>2. B. P. Demidovič, Zadaci i riješeni primjeri iz matematičke analize : za tehničke fakultete, Tehnička</p>							

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



knjiga, 2003, Zagreb		
1.11. <i>Recommended Reading</i>		
-		
1.12. <i>Number of Main Reading Examples</i>		
<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
R. Dobrosavljević, Ž. Glavan, I. Kitarović, Z. Zenzerović, Matematika I, Pomorski fakultet u Rijeci, 1982, Rijeka	8	60
B. P. Demidovič, Zadaci i riješeni primjeri iz matematičke analize : za tehničke fakultete, Tehnička knjiga, 2003, Zagreb	8	60
1.13. <i>Quality Assurance</i>		
The quality of the course is monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the course are analyzed and corresponding measures are taken.		



3.2. Course description

Generic information		
Head of Course	Assoc. Prof. Sandra Tominac Coslovich, PhD	
Course	Maritime English 1	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	undergraduate	
Type of Course	compulsory	
Year of Study	first	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	(30+30+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The main objective of the Maritime English course is to equip students with basic and specialized language skills to be used in English as the official language of maritime communication.

1.2. Prerequisites for Course Registration

/

1.3. Expected Learning Outcomes

Upon the successful completion of this course, students should be able to:

1. recognize present, past, and future tenses within sentential context.
2. apply relevant English grammatical rules in language practice.
3. explain basic English terminology relevant to vessel classification, navigation, and shipbuilding.
4. summarize the main ideas expressed in both general and specialized texts as well as interpret new vocabulary on the basis of surrounding sentential context.

1.4. Course Outline

The course comprises Maritime English (relevant for future profession) and general English (communication skills in everyday life and work situations). The course content encompasses the basics of English grammar: verb tenses (*Simple Present, Present Continuous, Simple Past, Past Continuous, Present Perfect, Present Perfect Continuous, Past Perfect, Future Tenses*), conditionals, and passive voice. Grammar rules are applied in practice on texts from the maritime domain. Relevant Maritime English vocabulary is covered within the scope of the course (vessel classification, vessel's general arrangement plan and ship's dimensions, basic navigation terminology). The targeted English vocabulary is presented through selected topics from the maritime profession (*Types of Vessels, General Arrangement Plan, Shipbuilding, Ship's Movement & Position, Crew & Watchkeeping, Navigating Bridge, and Navigation Marks*).



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____	
1.6. Comments		/			
1.7. Student Obligations					
Active class participation and a min. 70% class attendance.					
1.8. Assessment ¹ of Learning Outcomes					
Course attendance	1,5	Class participation		Seminar paper	Experiment
Written exam	1,0	Oral exam		Essay	Research
Project		Continuous Assessment	2,5	Presentation	Practical work
Portfolio					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment of learning outcomes will be carried out in accordance with the Regulations on the Studies of the University of Rijeka and the Regulations on the Studies of the Faculty for Maritime Studies in Rijeka:

1. continuous assessment (70% of credits). The student is obliged to score a min. of 50% of test points on each of the three achievement tests:

- ☐ 1st achievement test – learning outcomes 1-3 (1,0 ECTS (25%)),
- ☐ 2nd achievement test – learning outcomes 2-3 (1,0 ECTS (25%)),
- ☐ 3rd achievement test – learning outcomes 2-4 (0,5 ECTS (20%)).

2. summative assessment in the form of the final written exam (1,0 ECTS (30%)) whereby the realization of learning outcomes (1-4) is tested and the student is obliged to score a min. of 50% of test points.

An example of learning outcomes evaluation through continuous and summative assessment:

1. recognize Present Simple and Present Continuous forms in a sentence.
2. apply the rules of use in the case of time adverbs and Present Simple forms.
3. explain the principles of 'dead reckoning' and 'running fix' in English.
4. summarize the text on crew roles and the duties of the First Mate on board as well as interpret the unknown words in written context ('obligation', 'dog watch', etc.).

1.10. Main Reading

1. Grice, Tony. 2012. *English for the Maritime Industry*. Units 1, 2, 4, 5, & 8. Idris Education: London.
2. Pritchard, Boris. 1995. *Maritime English 1*. Units 1-17, 24, 25, & 32. Zagreb: Školska knjiga.
3. van Kluijven, Peter C. 2003. *The International Maritime Language Programme*. Unit Two (Types of Vessels, General Arrangement Plan, Ship's Measurement, Shipbuilding), Unit Four (Navigation), Unit Five (Tides, Weather, Ship's motions). Alkmaar: Alk & Heijnen Publishers.

1.11. Recommended Reading

1. Powell, Debra with Elaine Walker & Steve Elsworth. 2008. *Grammar Practice for Upper Intermediate Students* (with key). 3rd Edition. Harlow. Essex: Pearson-Longman.
2. Carter, Ronald & Michael McCarthy. 2006. *Cambridge Grammar of English. A Comprehensive Guide. Spoken and Written English Grammar and Usage*. Cambridge: Cambridge University Press.
3. Hewings, Martin. 2005. *Advanced Grammar in Use. A self-study reference and practice book for advanced students of English*. Second edition. Cambridge: Cambridge University Press.
4. Swan, Michael. 2005. *Practical English Usage*. Third edition. Oxford: Oxford University Press. (Intermediate to Advance).
5. Murphy, Raymond. 2004. *English Grammar in Use*. 3rd edition. Cambridge: Cambridge University Press.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Grice, Tony. 2012. English for the Maritime Industry	5	113
Pritchard, Boris. 1995. Maritime English 1	5	113
van Kluijven, Peter C. 2003. The International Maritime Language Programme	5	113

1.13. Quality Assurance



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Quality levels are monitored in accordance with the ISO 9001 System and the European standards and guidelines for quality assurance which are implemented at the Faculty of Maritime Studies in Rijeka. The course pass levels are analyzed annually and adequate measures are taken accordingly.



3.2. Course description

Generic information		
Head of Course	Mato Tudor, Ph.	
Course	Applied computer science	
Study Programme	Nautical Studies and Marine Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Obligatory	
Year of Study	1.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+30+0 (2+2+0)

1. GENERAL COURSE DESCRIPTION				
1.1. Course Objectives				
Acquiring knowledge about the structure and principle of computer operation, as well as an algorithmic way to solve problems using a computer.				
1.2. Prerequisites for Course Registration				
No				
1.3. Expected Learning Outcomes				
After the exam is passed, students will be able to:				
<ol style="list-style-type: none"> 1. Properly justify basic concepts of the structure and principle of operation of the computer 2. Describe different types of computer software support 3. Use the application program MS word for text processing 4. Use the application program MS Excel for spreadsheets 5. Write an algorithm in Just Basic programming language as a solution to a given problem 				
1.4. Course Outline				
Mathematical and logical basics of computer operation. Computer hardware. Input / output units. Computer memory. Central processing unit. Software. System software support. Operating System. Software development. Utilities. Application software. Text processor (MS Word). Spreadsheet program (MS Excel). Solving problems with computer. Algorithms and programs. Elements of algorithms. Describing algorithms. Algorithm commands. Control structures of the algorithm.				
1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input checked="" type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____		
1.6. Comments				
1.7. Student Obligations				
The student is obliged to actively attend lectures and exercises and be present in at least 70% of classes. All continuous assessment affect the grade, and none are satisfied with less than 50%.				
1.8. Assessment ¹ of Learning Outcomes				
Course attenda	2	Class participation	Seminar paper	Experiment



nce						
Written exam	0,5	Oral exam		Essay		Research
Project		Continuous Assessment	1,5	Presentation		Practical work
Portfolio						

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The procedure for evaluating the acquired learning outcomes is carried out in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

- During the course of the course, 70% of the learning outcomes obtained are evaluated through three proficiency tests, each of which must be positive (at least 50%).
 The first proficiency test involves learning the learning outcomes of using the MS Word application program - 3rd learning outcome (25%):
 Examples of checking 3rd learning outcomes:
 - Using the MS Word application format the given text.
 The second knowledge test involves learning the learning outcomes of using an MS Excel spreadsheet application - 4th learning outcome (25%).
 Examples of checking 4th learning outcomes:
 - Using the MS Excel application, draw a graph for the given data.
 The third check involves checking the 5th learning outcome (20%) on writing algorithms in Just Basic as a solution to a given problem.
 Example of checking 5th learning outcomes:
 - Write a program that will load 50 numbers and print the smallest number loaded.
- In the final part of the exam, 30% of the learning outcomes are evaluated. Student must have minimum of 50% to pass the final exam. The final exam checks the 1st and 2nd and the learning outcomes.
 Examples of learning outcomes 1 and 2:
 - Explain the basic characteristics of the processor.
 - Describe the different types of application software.

1.10. Main Reading

- Tudor, M. Primjena elektroničkih računala, University of Rijeka, Faculty for Maritime Studies, Rijeka, 2010.
- Course material available on the eLearning system - Merlin (<https://moodle.srce.hr>)

1.11. Recommended Reading

- Tudor, M. Osnove primjene računala, University of Rijeka, Faculty for Maritime Studies Rijeka, 2003.
- Grundler, D. Primijenjeno računalstvo, Graphis, Zagreb, 2000.
- Grundler et al, ECDL, Osnovni program, PRO-MIL d.o.o., Varaždin, 2005.



1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of</i>	<i>Number of students</i>
Tudor, M. Primjena elektroničkih računala, University of Rijeka, Faculty for Maritime Studies, Rijeka, 2010.	Library 10	90
Course material available on the eLearning system - Merlin (https://moodle.srce.hr)	Publishing Service 150	

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a semester, a student survey is conducted. Once a year, the results of the transience are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Assoc. Prof. Goran Vukelić	
Course	Engineering Mechanics	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate	
Type of Course	Compulsory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	2+1

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Acquiring theoretical knowledge that is the basis for problem solving in the field of solid mechanics statics, kinematics, dynamics and fluid mechanics.

1.2. Prerequisites for Course Registration

None.

1.3. Expected Learning Outcomes

1. Understanding the axioms of statics and laws of mechanics.
2. Applying the laws of mechanics to solve the problems of determining the reactions of rigid bodies on friction(less) surfaces.
3. Dimensioning of loaded beams.
4. Analyzing the strength of a loaded beam.
5. Applying the laws of mechanics onto the fluid mechanics problems.
6. Analyzing the fluid flow.

1.4. Course Outline

Colinear, concurrent, parallel and general planar system of forces. Resultant of a forces and equilibrium of a body. Moment of a system of forces. Force couple. Analysis of a system of forces. Friction. Pappus-Guldin theorems. Beams and trusses.
 Normal and tangential stress. Stress and strain dependence. Allowed stress. Axial load, shear stress, torsion, bending, buckling. Dimensioning of beams and shafts.
 Coordinate system and position of a body within. Motion. Degrees of freedom. Kinematics of a particle: rectilinear and curvilinear motion.
 Dynamics of a particle: inertia, inertia force, D'Alembert principle. Work, energy and power.
 Fluid mechanics: general physical values and parameters. Fluid statics. Pressure and change of pressure. Measuring the pressure. Pressure force. Buoyancy. Stability of a floating body. Pascal law. Hydraulic press. Fluid motion. Laws of fluid motion. Euler and Bernoulli equation. Fluid flow. Fluid circulation. Cavitation.



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input checked="" type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____	
1.6. Comments		-			
1.7. Student Obligations					
Attending the lectures and exercises (min. 70%), attending the assessment and exams, submitting results of assignments.					
1.8. Assessment ¹ of Learning Outcomes					
Course attendance	2	Class participation	0.5	Seminar paper	Experiment
Written exam	0.5	Oral exam		Essay	Research
Project		Continuous Assessment	1	Presentation	Practical work
Portfolio					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

According to the study rulebooks of University of Rijeka and Faculty of Maritime Studies:

- through continuous assessment during the semester (70% of learning outcomes)
 - 1. colloquium - learning outcomes 1-2 (25%),
 - 2. colloquium - learning outcomes 3-4 (25%),
 - homework assignments - learning outcomes 1-6 (20%),
- through final exam (30% of learning outcomes (5-6)) with passing rate set at min. 50% of final exam points.

Examples of evaluation in correlation to learning outcomes:

1. Determine equilibrium of a body exposed to a system of forces.
2. Determine free body diagram of a rigid body.
3. Determine free body diagram of a beam and determine distribution of forces and moments.
4. Determining stress, strain and stability of a beam.
5. Calculate pressure, change of pressure, pressure force, buoyancy.
6. Calculate fluid motion between two points.

1.10. Main Reading

Brnić, J.: "Mehanika i elementi konstrukcija", Školska knjiga, Zagreb, 1996.
Pečornik, M.: Tehnička mehanika fluida, Školska knjiga, Zagreb, 1985

1.11. Recommended Reading

Brnić, J.: Statika, Sveučilište u Rijeci, Tehnički fakultet, Rijeka, 2004.
J. Brnić, G. Turkalj: Nauka o čvrstoći I, Sveučilište u Rijeci, Tehnički fakultet, Rijeka, 2004.
Jecić, S.: Kinematika i dinamika, Tehnička knjiga, Zagreb, 1995.
Žigulić, R, Braut, S.: Kinematika, Sveučilište u Rijeci, Tehnički fakultet, Rijeka, 2012.
Kranj, M., Butković, M., Žigulić, R., Braut, S., Franulović, A.: Dinamika, Tehnički fakultet, Rijeka, 2001.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Brnić, J.: Mehanika i elementi konstrukcija	5	80
Pečornik, M.: Tehnička mehanika fluida	5	80

1.13. Quality Assurance

According to ISO 9001 system set at Faculty of Maritime Studies, Rijeka. Once a year analysis of passing exam rate. Once a semester anonymous students online survey.



3.2. Course description

Generic information		
Head of Course	Damir Zec, Ph.D.	
Course	Marine environmental protection	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate	
Type of Course	Mandatory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	3
	Number of Hours (L+E+S)	30 + 0 + 0 (2 + 0 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the course is to acquaint students with the principles, regulations and measures of environmental protection, and especially the part related to the protection of the marine environment from pollution from ships. Therefore, the subject contains material pertaining to theoretical, technical and legislative framework, i.e. relations of organisms and sources of pollution, in accordance with the requirements of the STCW Convention.

1.2. Prerequisites for Course Registration

None

1.3. Expected Learning Outcomes

After passing the exam in this course students will be able to do the following:

- correctly interpret the basic concepts of ecology;
- explain and interpret the adverse impact of individual pollutants on biocenosis and the environment on a particular biotope;
- analyse individual MARPOL 73/78 Annexes to the Convention,
- use the documentation from the appendices of each MARPOL Annex
- explain the procedures and measures in case of pollution.

1.4. Course Outline

Ecology. Ecosystem. Protection of the marine environment. Sea ecosystem factors. Harmful pollutants. Ship as a source of pollution. MARPOL 73/78 Convention. Annex I (Prevention of oil pollution). II (Prevention of pollution by bulk chemicals). III (Prevention of marine pollution by harmful substances in packaged form). IV (Prevention of marine pollution by faecal waters). V (Prevention of pollution by ship waste). VI (Prevention of air pollution from ships). Practical use of documentation from MARPOL Annexes. Ballast water. Underwater paints with biocide, Onshore reception facilities. SOPEP. Procedures in case of pollution.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |



1.6. Comments							
1.7. Student Obligations							
Active participation and at least 70% of class attendance.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1.0	Class participation		Seminar paper		Experiment	
Written exam	1.0	Oral exam	1.0	Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
<ol style="list-style-type: none"> 70% in class and 30% in final exam (written and oral exam) Written exam covering general protection of the sea and the marine environment, international system of protection of the sea and ship maintenance (at least 75% of correct answers, all learning outcomes are required) Oral exam - checking the integrity of theoretical knowledge in the field of marine and marine environment protection (minimum 50% of theoretical knowledge required) <p>Examples of evaluating learning outcomes in relation to set learning outcomes are:</p> <ol style="list-style-type: none"> Explain the basic concepts of environmental protection (1) Classify the types and impacts of marine pollution from ships (2) Explain ways to protect the sea from oil pollution (3) Prepare a report on ship-to-shipment waste (4) 5. explain the procedures in case of intensive pollution of the sea by harmful substances (5) 							
1.10. Main Reading							
<ol style="list-style-type: none"> Zec, D. author's presentations Klepac, R.: Osnove ekologije, JUMENA, Zagreb 1990. IMO, MARPOL 73/78., Consolidated Edition, London 2017. Dorčić, I.: Osnove čišćenja uljnih zagađenja, SKTH, Zagreb 							
1.11. Recommended Reading							
<ol style="list-style-type: none"> Golubić, J. Promet i okoliš, Fakultet prometnih znanosti u Zagrebu, Zagreb, 1999. Botkin, D., Keller, E., Environmental science, J. Wiley & sons, Inc., New York, 1995. 							
1.12. Number of Main Reading Examples							
Title				Number of examples		Number of students	
Zec, D. Autorske skripte				Unlimited (web)		80	
Klepac, R.: Osnove ekologije, JUMENA, Zagreb 1990.				2			
IMO, MARPOL 73/78., Consolidated Edition, London 2017.				Unlimited (web)			
Dorčić, I.: Osnove čišćenja uljnih zagađenja, SKTH, Zagreb				7			
1.13. Quality Assurance							
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the failure to pass are analysed and appropriate measures are adopted.							

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



3.2. Course description

Generic information		
Head of Course	Serdjo Kos , PhD , Full professor (tenured) , Maja Telišman Prtenjak, PhD , Associate professor	
Course	Maritime meteorology and oceanology	
Study Programme	Nautical Studies and Maritime Transport Techno	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	1.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	(45+15+0) (3+1+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the course is to acquaint students with meteorological measurements and observations and to train them in performing meteorological measurements and observations, to familiarize them with the basics of meteorological and oceanological processes and phenomena in maritime navigation, products of meteorological services, to use these products in navigation and to familiarize them with the management of appropriate meteorological and oceanological documentation.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Observe, encrypt and decode meteorological and oceanological elements and phenomena during planning and navigation;
2. Monitor actual meteorological and oceanological conditions during maritime navigation, analyse meteorological and oceanological elements;
3. Use meteorological and navigation publications when planning and during maritime navigation;
4. Recognize and interpret weather and ocean conditions as well as local conditions during maritime navigation;
5. Analyse meteorological and oceanological phenomena relevant to navigation safety and know how to analyse their impact on maritime navigation safety.
6. Apply weather forecasts when planning and during maritime navigation .

1.4. Course Outline

Meteorology and oceanology and their historical development. Earth's position in space, the atmosphere and meteorological processes in it. Meteorological elements: temperature, pressure and humidity, air currents, clouds, precipitation, fog and visibility, meteors. Weather analysis and forecast: Basic settings of the synoptic method, general atmospheric circulation, air masses, atmospheric fronts, cyclones and anticyclones, atmospheric air movements, storms. Weather in tropical areas, tropical cyclones. Devices and methods for testing the atmosphere. Meteorological insurance of maritime navigation. Water surfaces on Earth and the seabed. Characteristics of seawater. General conditions in the sea. Sea currents, waves and ice at sea. Devices



and methods for sea testing. Oceanic insurance of maritime navigation.

1.5. Modes of Instruction

- | | |
|---|---|
| <input type="checkbox"/> Lectures X | <input type="checkbox"/> Practical work X |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises X | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active attendance and at least 70% of attended classes. Successfully passed 2 colloquiums and successfully passed the oral final exam

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment 2 written colloquiums	1,5	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

60% in class and 40% in final oral exam (learning outcomes 1-6) (according to the Regulations on studies of the University of Rijeka and the Regulations on studies at the Faculty of Maritime Studies in Rijeka)

Continuous assessment:

- 1st Colloquium - Learning Outcomes 1-3
 - Second Colloquium - Learning Outcomes 4-6
- Oral Final Exam - Learning Outcomes 1-6.

1.10. Main Reading

1. Gelo, Branko: Opća i pomorska meteorologija, Sveučilište u Zadru, 2010
2. Buljan, M. i Zore-Armanda M.: Osnovi oceanografije i pomorske meteorologije, Split, 1971

1.11. Recommended Reading

1. Gelo, Branko: Opća i prometna meteorologija I.dio. Školska knjiga, Zagreb, 1994
2. Gelo, Branko: Opća i prometna meteorologija II.dio. Hinus, Zagreb, 2000 (bez zrakoplovne meteorologije i meteorologije kopnenog prometa)
3. Picard, G.L., Emery, W.J.: Descriptive Physical Oceanography. Pergamon Press, Oxford, 1990.
4. Simović Anton, Navigacijska meteorologija, Školska knjiga, Zagreb, 1996
5. Zore-Armanda M, Gačić, M.: Oceanografija, Split 1988
6. Bonačić, D: Osnove oceanografije, Školska knjiga, Zagreb, 1987

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Opća i pomorska meteorologija	5	64
Osnovi oceanografije i pomorske meteorologije	1	64
Descriptive Physical Oceanography	20	64

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



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3.2. Course Description

Generic information		
Head of Course	Igor Vio, PhD	
Course	Maritime Administrative Law and Law of the Sea	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Core (compulsory course)	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS Coefficient of Student Workload	3
	Number of Hours (L+E+S)	30 + 0 + 0
1. GENERAL COURSE DESCRIPTION		
<i>1.1. Course Objectives</i>		
<p>Students should become familiar with international and national legal framework regulating the boundaries of national jurisdiction at sea, rights and duties of states at sea, their mutual relations related to exploration and exploitation of marine and submarine resources and their protection, their relations concerning war and neutrality in armed conflicts at sea, as well as safety of navigation and protection of the marine environment, organization of maritime administration, labour relations of seafarers, flag state and port state control, maintenance of order in ports and harbours, and regime of maritime domain.</p>		
<i>1.2. Prerequisites for Course Registration</i>		
none		
<i>1.3. Expected Learning Outcomes</i>		
<ol style="list-style-type: none"> 1. To list and compare the international conventions and other sources of the international law of the sea, to describe its basic principles and to explain their influence on the regimes of navigation of ships in various parts of the sea, as well as on the regime of the exploitation of the resources of the sea and the seabed. 2. To explain the regime of entry and navigation of various foreign ships (merchant, government, military, fishing or scientific) and foreign yachts and boats in internal waters, territorial sea and protected ecological and fishery zone of the Republic of Croatia. 3. To enumerate and interpret rules and regulations of international maritime law governing the safety of navigation and the protection of the marine environment. 4. To explain the structure and describe the activities of the International Maritime Organization (IMO) and the European Maritime Safety Agency (EMSA). 5. To list the laws and regulations of the Republic of Croatia in the area of maritime administrative law and explain their application to ships and other maritime vessels and crafts, maritime navigation, sea lanes, pilotage and order in ports. 6. To describe the organization of the maritime administration in the Republic of Croatia, explain the role and organization of harbour master's offices, to enumerate their functions, highlight the features of the certificate of registration and other ship documents and books, indicate the principles and procedures of inspection, explain the technical control and list other activities of the Croatian Register of Ships. 7. To explicate the legal regulation of the maritime domain and seaports in the Republic of Croatia, describe the concept of the maritime domain and highlight the features of its concession, interpret the notion and list the types of seaports, and to describe the structure of the port authority and indicate its activities. 		

1.4. Course Outline

Part I: International Law of the Sea: definition and codification: UNCLOS I, II and III - Geneva Conventions (1958) and UN Convention on the Law of the Sea (1982); internal waters, ports, bays, historic bays and historic waters, archipelagic waters, regime of islands, territorial sea, contiguous zone, straits used for international navigation, canals, continental shelf, exclusive economic zone, maritime boundary delimitation, area, high seas, land-locked states, geographically disadvantaged states, enclosed and semi-enclosed seas, marine scientific research, marine pollution, marine and submarine areas of the Republic of Croatia, status of foreign ships in Croatian internal waters and territorial sea. International Law of Armed Conflicts at Sea: rights and duties of neutral and belligerent states, war zones at sea, status of neutral ships in convoy, status of military and merchant ships in armed conflicts, naval blockade, contraband of war.

Part II: International Maritime Organization (IMO) – structure, goals and functions. International conventions on safety of navigation and protection of the marine environment: SOLAS, COLREG, LOADLINES, TONNAGE, INTERVENTION, LDC, MARPOL, OPRC, AFS and BWC. Principles of ISM and ISPS Code, Paris Memorandum of Understanding on Port State Control, problems of flags of convenience. European Maritime Safety Agency (EMSA) - structure and functions. Master and crew, STCW Convention, Maritime Labour Convention and other Conventions and Resolutions of the International Labour Organization (ILO). Croatian maritime legislation, Maritime Code, harbour master's offices and inspection of safety of navigation, categories of navigation, sea lanes, pilotage, ships – legal regime, ownership, nationality, registration, classification, name and call sign, ship registers, ship's documents, log book. Croatian Register of Ships, technical supervision of ships, jurisdiction – flag state, coastal state and port state jurisdiction. Maritime Domain and Seaports Act, concept of maritime domain, concessions, definitions and characteristics of ports and harbours, concessions for port activities, port fees.

1.5. Modes of Instruction

<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
<input type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory
<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____

1.6. Comments

1.7. Student Obligations

- Students' main obligations are active course attendance with the preparation and presentation of seminar paper and they are required to pass two mid-term exams.
- As a prerequisite for the final exam, students must score at least 35 out of a possible 70 points (50%) during the classes.
- Students must score at least 15 out of a possible 30 points on final exams (50%).

1.8. Assessment¹ of Learning Outcomes

Course attendance	1,0	Class participation		Seminar paper	0,2	Experiment	
Written exam	1,0	Oral exam		Essay		Research	
Project		Continuous Assessment	0,8	Presentation		Practical work	
Portfolio							

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The evaluation procedure consists of continuous examination of knowledge in the form of two tests and a final exam. Examples of evaluating learning outcomes during classes and on the final exam:

1. Compare the concept and legal regime of the contiguous zone according to the Convention on the Territorial Sea and Contiguous Zone (1958) and the UN Convention on the Law of the Sea (1982).
2. Indicate and explain conditions for entry and navigation of ships, yachts and boats of foreign nationality in internal waters of the Republic of Croatia, including their stay in seaports and shipyards.
3. List and discuss international acts regulating the protection of the marine environment from pollution.
4. Describe the structure of the International Maritime Organization (IMO) and highlight the role and functions of each body (Assembly, Council, Secretariat, Committees and Subcommittees).
5. Interpret the term and types of pilotage according to the provisions of the Maritime Code of the Republic of Croatia, specify the rights and duties of the pilot, and explain potential responsibility and liability of the pilot and of the pilot company.
6. Describe the structure of the maritime administration in the Republic of Croatia, highlight the most important powers of harbour master's office, and in particular explain and describe the rules of procedure for maritime offenses.
7. Explain the legal concept of maritime domain and indicate which parts of land and sea have this status.

1.10. Main Reading

Luttenberger, Axel, Pomorsko upravno pravo, Pomorski fakultet, Rijeka, 2005.

Luttenberger, Axel, Osnove međunarodnog prava mora, Pomorski fakultet, Rijeka, 2006.

Luttenberger, Axel, Pomorsko ratno pravo, Pomorski fakultet, Rijeka, 2008.

1.11. Recommended Reading

Capar, Rudolf, Međunarodno pravo mora, Pomorski fakultet, Rijeka, 1994.

Capar, Rudolf, Međunarodno pomorsko ratno pravo, Školska knjiga, Zagreb, 1989.

Grabovac, Ivo, Pomorsko pravo, Knjiga I: Pomorsko javno i upravno pravo, VPŠ Split, 2001

Grabovac, Ivo – Petrinović, Ranka, Pomorsko javno, upravno i radno pravo, Pomorski fakultet, Split, 2006.

Ibler, Vladimir, Međunarodno pravo mora i Hrvatska, Barbat, Zagreb, 2001.

Rudolf, Davorin, Međunarodno pravo mora, JAZU, Zagreb, 1985.

Pomorski zakonik, N.N. 181/04. (s kasnijim izmjenama i dopunama)

Zakon o pomorskom dobru i morskim lukama, N.N. 158/03. (s kasnijim izmjenama i dopunama)

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Osnove međunarodnog prava mora	Sufficient (in library and book shop)	139
Pomorsko ratno pravo	Sufficient (in library and book shop)	139
Pomorsko upravno pravo	Sufficient (in library and book shop)	139

1.13. Quality Assurance

Quality assurance of the course performance is continuously monitored according to ISO 9001 system applied at the University of Rijeka Faculty of Maritime Studies. An analysis of results of the final exams and a student survey are conducted and appropriate measures are adopted for each academic year.



3.2. Course description

Generic information		
Head of Course	Albin Redžić, mag.cin.	
Course	Physical education 2	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	UNDERGRADUATE DEGREE PROGRAMME	
Type of Course	core	
Year of Study	1st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	1
	Number of Hours (L+E+S)	0+30+0 (0+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Introduce students to the importance of continuing to maintain the health of seafarers through physical exercise, basic, general and specific motor skills:

-climbing rope and ladder ladders, drowning rescue, swimming, sailing rowing.

Adequate kinesiological activities to satisfy the needs of students for movement as an expression of satisfaction of general needs that increase adaptive and creative abilities in contemporary living and study conditions. In addition, the objective of the Physical and Health Culture course is to convey basic health and work-life information to students.

1.2. Prerequisites for Course Registration

Prerequisite for enrollment in the course is the passed Physical and Health Education course 1

1.3. Expected Learning Outcomes

Possibility of changing morphological characteristics, motor and functional abilities; training students to exercise independently; the legality of health culture; quality nutrition.

1. Learning new conventional motor skills
2. Improving basic, theoretical and practical kinesiological knowledge
3. Determining the interest of anthropological features and motor awareness
4. Promoting sports culture

1.4. Course Outline

Characteristics of adolescence and maritime adolescence in maintaining health and exercise. Work in basketball motor development groups. Volleyball rules, application in the game. Volleyball elements: lower and upper service, top rebound, hammer, pitching, third ball. Basketball rules, application in the game. Grabbing, adding, running a basketball. Working in combined groups. How to lift weights and other loads while maintaining spine health. Removing and carrying oars. Getting in and out of the lifeboat with a paddle 3.80 m. Proper load of lifeboat: bow, middle, stern, left and right.



Basic match alignment. Navy rowing technique in life-boat. Basic starting position: the position of the arms, torso and oars. The active and passive phases are astounding. Rowing of bow, middle and stern rowers. Basic sailor paddles. Short, medium, long and strong, powerful paddles. Rowing start, turn, aim. Long jump from place. Semi-structural complex movements: football. New 3-team basketball game. Jump up from place. Adapted limiter with the largest Pilates ball. Elective polystructural complex motions. Determination of the personal student status of a course or class completed based on the arrivals or non-attendance of classes and activities or inactivity in teaching.

1.5. Modes of Instruction

- | | |
|---|---|
| <input type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

Teaching classes of Physical and health education takes place in three different media: a gym, at sea and in a swimming pool. The unpredictability of weather conditions at sea will determine the number of hours of sailing. The ability to reconcile college and swimming pool hours will determine the number of swimming hours. Good weather conditions will allow more hours of teaching at sea to be maintained. Seminar paper is written by part-time students.

1.7. Student Obligations

Active class attendance and activity in at least 70% of classes.

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Active class attendance and activity in at least 70% of classes.

1.10. Main Reading

Recommendation: Heimer, S. (2003) Promicanje zdravstveno-preventivne tjelesne aktivnosti u RH. Sport za sve,21 (35),3-4.

1.11. Recommended Reading

1. Redžić A., Redžić M.: Dodatak kineziološkim znanjima studenata pomoraca u ponudama on-line tehnologija za poticanje tjelesnog vježbanja pomoraca za vrijeme plovidbe. HKS 27. Ljetna škola Kineziologa RH. Poreč 2018.
2. Volčanšek B.: Bit plivanja , Kineziološki fakultet Sveučilišta u Zagrebu, Zagreb, 2002.
3. Conner D., Levitt M.: Naučite jedriti, Gandalf, Zagreb, 2001.
4. Graver D.K.: Scuba diving, Human Kinetics Publisher, Algoritam, Zagreb, 1993.
5. Anderson B.: Stretching, Vježbe istezanja za svakodnevni fitness: trčanje, plivanje, tenis, biciklizam, skijanje, košarka, nogomet i ostale sportove, Gopal, d.o.o., Zagreb, 1997.
6. Anderson B., Burck E., Pearl B.: Fitnes za sve, Gopal, d.o.o., Zagreb, 19997.
7. Janković V. , N. Marelić.: Odbojka, Fakultet za fizičku kulturu Sveučilišta u Zagrebu, Zagreb 1995.

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.12. Number of Main Reading (Examples)

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted. Each class is closely monitored for each (none) arrival and activity of the student on a separate sheet Physical and Health Culture, where the results of longitudinal monitoring are in general and specific psychomotor abilities, knowledge and achievements and functional abilities. The course of Physical and Health Education is evaluated for a particular semester by enrolling in the ISVU system as "PASSED".



3.2. Course description

Generic information		
Head of Course	Predrag Kralj, Associate Professor, Ph.D., MS.ME., BS.ME.	
Course	Marine Engineering Systems	
Study Programme	Nautical Studies and Marine Transport Technology	
Level	Undergraduate	
Type of Course	STCW - obligatory	
Year of Study	1	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+15+0 (2+1+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to give the students basic knowledge on ship power plant, main engines but also auxiliary systems and other systems that are important for the safety of sea transport in accordance with contents that STCW convention defines for authorized deck officers.

1.2. Prerequisites for Course Registration

Knowledge gained through Technical mechanics course.

1.3. Expected Learning Outcomes

It is expected that the student will be able:

1. to recognize the type of propulsion systems and their main characteristics and to manage the ship accordingly
2. to explain the function and characteristics of auxiliary marine equipment or system
3. to apply knowledge to manage propulsion engine and other auxiliary systems as responsible deck officer on operating and managing level
4. to analyze, as a deck officer on duty, the indicated values of the power plant altogether
5. to evaluate the importance of detected irregularities in power plant operation and to be able to make corrections
6. to analyze classification societies schemes of safety systems and to plan periodical checks and crew exercises

1.4. Course Outline

Operating basics of ship power plants (diesel-engine, steam-turbine, gas-turbine and combined propulsion plants, ship's screw and driving shaft, power plant's remote operation from bridge). Marine auxiliary equipment (steam generators, fresh water generators, pumps and systems, steering gears, ventilation and air conditioning and corresponding refrigerating systems and elements, sewage treatment plants, stabilizers, bilge systems and equipment, incinerators, deck equipment, hydraulic systems). General knowledge on ship technical systems (basic engineering terms and fuel consumption, prerequisites for duty schedule to achieve respective power plant safety in normal circumstances and in case of unattended machinery space).

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |



	<input type="checkbox"/> Field work		<input type="checkbox"/> Other _____				
1.6. Comments	The exercises are performed on engine room simulator exclusively, they start with cold ship situation and finishes with operation of main engine and every important auxiliary system during voyage on open sea.						
1.7. Student Obligations							
Active participation on classes and at least 70% of presence on lessons. Passed partial exams and successful demonstration of power plant managing skills on the engine room simulator through group type practical exams, preparing the students for their future working environment. Passed final exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	0,5
Portfolio		Final exam	1				
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
70% during classes and 30% on final exam (learning outcomes 1 – 6) in accordance with the University's and Faculty's normative acts. Continuous assessment: - Two theoretical partial exams on marine engineering (diesel-engine power plants, steam generators and turbines, auxiliary equipment, piping) (46%) – outcomes 1 – 6 - Two partial exams on engine room simulator where skill of marine engines and equipment operations is assessed (14%) – outcomes 1, 3, 4, 5, 6 Two numerical home works 10% - outcomes 1, 4, 5 On written final exam complete field of marine engineering is assessed. Examples of assessment for outcome: 1. On the engine's scheme recognize main construction elements (outcomes 1, 3, 4) 2. On the engine room simulator operate propulsion engine in accordance with its characteristics (outcomes 2 – 5) 3. Demonstrate the importance of measured physical values for propulsion engine normal operation evaluation (outcomes 4, 5)							
1.10. Main Reading							
1. Kralj Predrag, Marine energy systems, web publication 2. Dragan Martinović: Strojarski priručnik za časnike palube, Graftrade, Rijeka, 2005. 3. Matković Milan, Protupožarna zaštita na brodovima, Pomorski fakultet, Rijeka, 1995. 4. Learning materials published on the lecturer's web page and on the e-learning system Merlin							
1.11. Recommended Reading							
1. Ozretić Velimir, Brodski pomoćni strojevi i uređaji, Ship management, Split, 1996.. 2. Martinović Dragan, Brodski rashladni uređaji, Školska knjiga, Zagreb, 1994. 3. Knak Christen, Diesel Motor Ships – Engines and Machinery, G-E-C GAD Publishers, Copenhagen, 1979.							
1.12. Number of Main Reading Examples							
	Title	Number of examples	Number of students				
	Brodski energetske sustavi (Marine Energy Systems)	web	150				
	Lecturer's Learning materials	web					
	Strojarski priručnik za časnike palube	Bibliothek					

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



	6	
Protupožarna zaštita na brodovima	Bibliothek 6 Faculty Book Store 500	
<i>1.13. Quality Assurance</i>		
Course quality review carried in accordance with ISO 9001 system and European standards and guidance for quality assurance carried through on Maritime faculty. Student Success is evaluated, and corrective measure implemented yearly.		



3.2. Course description

Generic information		
Head of Course	Dr. sc. Alen Jugović, full professor	
Course	Shipping Economics	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate	
Type of Course	Core	
Year of Study	1 st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	2
	Number of Hours (L+E+S)	30 + 0 + 0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The goal of the course is to acquaint students with the field covered by the Shipping Economics and to apply this knowledge into specific cases in practice. Pursuant to the goal, the tasks and content of the course were designed in such a way that, by applying basic economic principles, the attempt was made to explain the business of shipping companies and all entities in the maritime transport service.

1.2. Prerequisites for Course Registration

None

1.3. Expected Learning Outcomes

After passing the exam, students will be able to do the following:

1. Explain the basic concepts within the shipping industry
2. Explain the specifics of each type of shipping and transportation technology
3. Explain the economic principles of doing business in maritime shipping
4. Apply techniques for calculating fares, ship costs and freight costs
5. Assess supply and demand for transportation
6. Understand the importance and impact of particular phenomena (globalization, informatization etc.) on the development and competitiveness of shipping companies

1.4. Course Outline

MARITIME SHIPPING ECONOMICS. Definition, subject of research, application of scientific and theoretical knowledge in practice.

CALCULATIONS. Measuring business results. Business success and benchmarks, productivity, economy, profitability.

SPECIAL TYPES OF MARITIME SHIPPING ACTIVITIES. Economic and technological criteria defining different types of shipping. Passenger shipping, free, liner, tanker shipping.



FORMATION OF FARES IN MARITIME SHIPPING. The concept and types of fares. Characteristics and formation of freight rates in certain types of shipping industry.

MARITIME TRANSPORT COSTS. Definition of costs. Types of costs in maritime shipping. Fixed and variable costs. Marginal cost. Total costs of a ship's voyage.

SHIPPING COSTS OPTIMIZATION.

PERFORMANCE INDICATORS IN MARITIME SHIPPING. Labor productivity. Business efficiency. Business profitability. Optimal size and speed of the ships in terms of cost-effectiveness.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
	<input type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____

1.6. Comments

1.7. Student Obligations

- Attending classes
- Attending exercises
- Classroom activity
- Exams (continuous assessment) and tests
- Final exam

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,25	Class participation	0,25	Seminar paper		Experiment	
Written exam	0,5	Oral exam		Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment is carried out by conducting two exams (continuous assessment) and final exam.

1. Define the term maritime shipping.
2. Define economic and technological criteria that represent different types of maritime shipping in the context of passenger shipping, free shipping, liner shipping and tanker shipping
3. List and explain the basic principles of economy in maritime shipping
4. Explain which parameters are taken into account when calculating fares and how the defined transport conditions affect the calculation of the fare?
5. What are the factors in the maritime market that affect the quantity of supply and the quantity of demand for transport?
6. Explain how globalization affects the competitiveness of shipping companies.

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.10. Main Reading		
<ol style="list-style-type: none">1. Domijan-Arneri, I.: Poslovanje u morskom brodarstvu, Redak, Split, 2014.2. Kesić, B; Jugović, A.; Debelić, B.: Ekonomika brodarstva riješeni zadaci, Pomorski fakultet Sveučilišta u Rijeci, Rijeka, 2013.3. Stopford, M.: Maritime Economics, Routledge, London & New York, 2009.		
1.11. Recommended Reading		
<ol style="list-style-type: none">1. Kesić, B., Jugović, A.: Menadžment pomorskoputničkih luka, Pomorski fakultet Sveučilišta u Rijeci, Rijeka, 2006.2. Wayne K. Talley: The Blackwell Companion to Maritime Economics, John Wiley & Sons, 2011.		
1.12. Number of Main Reading Examples		
<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Domijan-Arneri, I.: Poslovanje u morskom brodarstvu, Redak, Split, 2014.	20	
Kesić, B; Jugović, A.; Debelić, B.: Ekonomika brodarstva riješeni zadaci, Pomorski fakultet Sveučilišta u Rijeci, Rijeka, 2013.	10	
Stopford, M.: Maritime Economics, Routledge, London & New York, 2009.	10	
1.13. Quality Assurance		
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies in Rijeka.		



Generic information		
Head of Course	Biserka Draščić Ban, PhD; Željko Glavan, MSC	
Course	Mathematics 2	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	undergraduate	
Type of Course	core	
Year of Study	1.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+30+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The main objective of the course is to present general educational content and teach mathematics applied in other core and elective undergraduate courses as well as to point to the importance of precise expression and definition of mathematical concepts applied in undergraduate courses.

1.2. Prerequisites for Course Registration

Successful completion of the course *Mathematics 1*.

1.3. Expected Learning Outcomes

Upon completion of the course the students will be able to:

1. Apply the differential calculus in specifying a function.
2. Recognize and correctly interpret the basic concepts of integral equation of a function with one variable, series, multivariable functions and differential equations.
3. Express and correctly interpret basic results of integral equation of a function with one variable, series, multivariable function and differential equations.
4. Interpret basic arithmetic with indefinite and definite integrals, series, two variable functions and methods for solving differential equations.
5. Apply definite integrals.

1.4. Course Outline

Application of differential calculus in specifying a function. Curvatures, evolutes and involutes. Primitive function, tabular integration. Methods of integrals. Definite integrals Properties of definite integrals. Newton - Leibniz formula. Improper integral. Series. Convergence with Positive Relative Members, Convergence Criteria. Alternating series. Power series. Differential equations, homogeneous, linear, Bernoulli equation. Functions with multiple real variables. Limits of a function with more real variables. Partial derivations. Total differential. Schwarz's theorem. Extremes of functions with multiple variables. Conditional extremes.

1.5. Modes of Instruction

Lectures

Seminars and workshops

Exercises

Practical work

Multimedia and Network

Laboratory



		<input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____	
1.6. Comments					
1.7. Student Obligations					
Students are expected to regularly attend classes (70 %).					
1.8. Assessment ¹ of Learning Outcomes					
Course attendance	2	Class participation		Seminar paper	Experiment
Written exam		Oral exam	1	Essay	Research
Project		Continuous Assessment	2	Presentation	Practical work
Portfolio					
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam					
<p>The procedure of assessment of learning outcomes is performed in the following way: Two mid-term exams and a final exam.</p> <p>TASKS:</p> <p>1) (outcome 1) Specify and draw a graph of the following function $f(x) = \frac{1-x^2}{x^2+1}$</p> <p>2) (outcomes 2, 3 and 4) Calculate: a) $\int \frac{4x+2}{x^2+x+1} dx$ b) $\int_0^{\frac{\pi}{4}} (\cos^2 x - \sin^2 x) dx$</p> <p>3) (outcome 5) Calculate the volume of a rotating body where the rotation occurs around the x-axis of a surface bounded by the curve $y = -x^2 + 2$ and a straight line $y = x$ in the first quadrant, around the x-axis. Make a drawing.</p> <p>4) (outcomes 2, 3, 4) Solve the differential equation: $y'(y^3+1)(1+x^2) = xy$</p> <p>5) (outcomes 2, 3, 4) Determine the minimum and maximum values of the function with two variables. $f(x, y) = x^2 + 2y^2 + 2xy - 6x - 10y + 50$</p> <p>ORAL EXAM (outcome 2):</p> <p>1) The Newton-Leibnitz formula</p> <p>2) Cauchy's convergence test</p> <p>3) Minimum and maximum values of the function with two variables</p>					
1.10. Main Reading					
1. R. Dobrosavljević, Ž. Glavan, I. Kitarović, Matematika II, Pomorski fakultet u Rijeci, 1993, Rijeka 2. B. P. Demidovič, Zadaci i riješeni primjeri iz matematičke analize : za tehničke fakultete, Tehnička knjiga, 2003, Zagreb					

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.11. <i>Recommended Reading</i>		
-		
1.12. <i>Number of Main Reading Examples</i>		
<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
R. Dobrosavljević, Ž. Glavan, I. Kitarović, Matematika II, Pomorski fakultet u Rijeci, 1993., Rijeka	10	60
B. P. Demidovič, Zadaci i riješeni primjeri iz matematičke analize : za tehničke fakultete, Tehnička knjiga, 2003, Zagreb	5	60
1.13. <i>Quality Assurance</i>		
The quality of the course is monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the course are analyzed and corresponding measures are taken.		



3.2. Course description

Generic information		
Head of Course	Assoc. Prof. Sandra Tominac Coslovich, PhD	
Course	Maritime English 2	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	undergraduate	
Type of Course	compulsory	
Year of Study	first	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	(30+30+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The main objective of the Maritime English course is to equip students with the four basic language skills (speaking, reading, listening, and writing) to be used in English as the official language of maritime communication.

1.2. Prerequisites for Course Registration

Maritime English 1 - first (winter) semester final exam pass grade.

1.3. Expected Learning Outcomes

Upon the successful completion of this course, students should be able to:

1. recognize different word categories within sentential context (adjectives, adverbs, nouns, articles, prepositions).
2. apply relevant English grammatical rules in language practice.
3. explain basic English terminology relevant to ship cargo, cargo handling equipment, ports and harbors, safety at sea, and marine conservation.
4. summarize the main ideas expressed in both general and specialized texts as well as interpret new vocabulary on the basis of surrounding sentential context.
5. apply the rules of word formation on relevant Maritime English vocabulary.

1.4. Course Outline

The course comprises Maritime English (relevant for future profession) and general English (communication skills in everyday life and work situations). The course content encompasses the basics of English grammar: nouns (singular vs. plural form), adjective and adverb formation, syntax, and the use of prepositions and articles. Grammar rules are applied in practice on texts from the maritime domain. Relevant Maritime English vocabulary is covered within the scope of the course (ship cargo, cargo handling equipment, port terminology, safety at sea, marine conservation). The targeted English vocabulary is presented through selected topics from the maritime profession (*Cargo & Cargo handling equipment, Ports & Harbors, Safety at sea & Medicine on board, Marine conservation*).



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____	
1.6. Comments		/			
1.7. Student Obligations					
Active class participation and a min. 70% class attendance.					
1.8. Assessment ¹ of Learning Outcomes					
Course attendance	1,5	Class participation		Seminar paper	Experiment
Written exam	1,0	Oral exam		Essay	Research
Project		Continuous Assessment	2,5	Presentation	Practical work
Portfolio					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment of learning outcomes will be carried out in accordance with the Regulations on the Studies of the University of Rijeka and the Regulations on the Studies of the Faculty for Maritime Studies in Rijeka:

1. continuous assessment (70% of credits). The student is obliged to score a min. of 50% of test points on each of the three achievement tests:

- ☐ 1st achievement test – learning outcomes 1-3 (1,0 ECTS (25%)),
- ☐ 2nd achievement test – learning outcomes 1-3 (1,0 ECTS (25%)),
- ☐ 3rd achievement test – learning outcomes 3-5 (0,5 ECTS (20%)).

2. summative assessment in the form of the final written exam (1,0 ECTS (30%)) whereby the realization of learning outcomes (1-5) is tested and the student is obliged to score a min. of 50% of test points.

Examples of learning outcomes evaluation through continuous and summative assessment:

1. recognize adjectives and adverbs in a sentence on the basis of prefix/suffix recognition.
2. apply the rules of adjective formation in the case of noun-to-adjective transformation.
3. explain the difference between handling bulk and liquid cargoes in English.
4. summarize the text on safe handling of toxic materials as well as interpret the unknown words in written context ('hazardous', 'contamination', etc.).
5. apply the rules of noun-to-adjective formation on the example of cargo vocabulary (for example, adding a suffix to the noun 'hazard' in order to form the adjective 'hazardous', etc.).

1.10. Main Reading

1. Grice, Tony. 2012. *English for the Maritime Industry*. Units 1, 2, 4, 5, & 8. Idris Education: London.
2. Pritchard, Boris. 1995. *Maritime English 1*. Units 1-17, 24, 25, & 32. Zagreb: Školska knjiga.
3. van Kluijven, Peter C. 2003. *The International Maritime Language Programme*. Unit Two (Types of Vessels, General Arrangement Plan, Ship's Measurement, Shipbuilding), Unit Four (Navigation), Unit Five (Tides, Weather, Ship's motions). Alkmaar: Alk & Heijnen Publishers.

1.11. Recommended Reading

1. Powell, Debra with Elaine Walker & Steve Elsworth. 2008. *Grammar Practice for Upper Intermediate Students* (with key). 3rd Edition. Harlow. Essex: Pearson-Longman.
2. Carter, Ronald & Michael McCarthy. 2006. *Cambridge Grammar of English. A Comprehensive Guide. Spoken and Written English Grammar and Usage*. Cambridge: Cambridge University Press.
3. Hewings, Martin. 2005. *Advanced Grammar in Use. A self-study reference and practice book for advanced students of English*. Second edition. Cambridge: Cambridge University Press.
4. Swan, Michael. 2005. *Practical English Usage*. Third edition. Oxford: Oxford University Press. (Intermediate to Advance).
5. Murphy, Raymond. 2004. *English Grammar in Use*. 3rd edition. Cambridge: Cambridge University Press.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Grice, Tony. 2012. English for the Maritime Industry	5	113
Pritchard, Boris. 1995. Maritime English 1	5	113
van Kluijven, Peter C. 2003. The International Maritime Language Programme	5	113

1.13. Quality Assurance



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Quality levels are monitored in accordance with the ISO 9001 System and the European standards and guidelines for quality assurance which are implemented at the Faculty of Maritime Studies in Rijeka. The course pass levels are analyzed annually and adequate measures are taken accordingly.



3.2. Course description

Generic information		
Head of Course	Igor Rudan, PhD	
Course	Ship design and construction 2	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Mandatory	
Year of Study	1 st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30 + 30 + 0 (2 + 2 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the basic characteristics of ship stability and the division of stability according to different criteria. In addition to numerical tasks, students should correctly interpret the criteria of initial transverse stability and transverse stability at higher tilt angles and longitudinal stability of the ship. Detailed introduction and analysis of transverse and longitudinal stability due to vertical and horizontal displacements of masses and transshipment. A thorough introduction and interpretation of the dynamic stability of the ship and the influence of the dimensions and technology of the ship on stability.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Describe and interpret the ship stability according to different criteria
2. Analyse and parse initial stability with basic elements of transverse statical stability
3. Analyse and calculate the effect of different mass shifting on the transverse stability of the ship
4. Analyse and calculate the elements of transverse statical stability in mass transshipment (loading/unloading)
5. Interpret and evaluate the effects of Free Surfaces Correction on ship stability
6. Analyse and parse the longitudinal ship stability
7. Analyse and calculate the effect of different mass shifting on the longitudinal stability elements of the ship
8. Analyse and calculate the effect of transshipment (loading / unloading) on the elements of longitudinal stability of the ship
9. Explain the basic concepts of dynamic ship stability

1.4. Course Outline

Ship stability definition and division. Basic ship hydrostatics. Statical initial transverse metacentric high. Transverse statical stability change in vertical and horizontal mass shifting. Transverse statical stability change in mass transshipment (loading/unloading). Transverse statical stability change in hanging loads. Influence of *Free Surface Correction* (FSC) on transverse statical stability. Statical transverse stability at large angles of heel. *GZ curve* construction with Intact stability regulations analyses. *KG* calculation in transverse



Ship stability definition and division. Basic ship hydrostatics. Statical initial transverse metacentric high. Transverse statical stability change in vertical and horizontal mass shifting. Transverse statical stability change in mass transshipment (loading/unloading). Transverse statical stability change in hanging loads. Influence of *Free Surface Correction* (FSC) on transverse statical stability. Statical transverse stability at large angles of heel. *GZ curve* construction with Intact stability regulations analyses. *KG* calculation in transverse stability. Statical longitudinal stability. Longitudinal stability change in mass shifting or mass transshipment (loading/unloading). *XG* calculation in longitudinal stability. Dynamical stability analyses. Damage stability. Ship's trim and stability book.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active attendance of classes over 70 %. Longitudinal and transversal ship drawing – student task. Passed two written exams. Final oral exams.

1.8. Assessment¹ of Learning Outcomes

Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70 % of the course grade is based through 2 written exams in class and 30 % of the course grade is based in the oral final exam according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka.

Continuous assessment: Each written exam must have at least 60 % score.

Final oral exam (learning outcomes 1- 9) checks the competences of theoretical knowledge where it is necessary to achieve a minimum of 50 % of the required theoretical knowledge.

1.10. Main Reading

- Rudan, I., teaching materials from the course Ship design and construction on the teacher's personal web site (MERLIN) of the Faculty of Maritime Studies in Rijeka
- Vademecum Maritimus, Podsjetnik pomorcima, Pomorski fakultet u Rijeci, Rijeka, 2002.
- Videotel - Videotel's training solutions
- Buljan, I., Stabilitet broda, Priručnik za pomorce, Školska knjiga Zagreb, Zagreb, 1982.
- Uršić, J., Stabilitet broda I. dio, Sveučilište u Zagrebu, Zagreb, 1968.
- Uršić, J., Stabilitet broda II. dio, Sveučilište u Zagrebu, Zagreb, 1968.

1.11. Recommended Reading

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1. Dokkum, K., Katen, H.T., Koomen K., Pinkster J., Ship Stability, London, 2001.
2. Derrett, D.R., Ship stability – for Masters and Mates, Butterworth Heinemann, Woburn, 2001.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Teaching materials from the course Ship design and construction	MERLIN – online	
Vademecum Maritimus, Podsjetnik pomorcima, Pomorski fakultet u Rijeci, Rijeka, 2002.	10	
Videotel - Videotel's training solutions	10	
Buljan, I., Stabilnost broda, Priručnik za pomorce, Školska knjiga Zagreb, Zagreb, 1982.	10	
Uršić, J., Stabilitet broda I. dio, Sveučilište u Zagrebu, Zagreb, 1968.	10	
Uršić, J., Stabilitet broda II. dio, Sveučilište u Zagrebu, Zagreb, 1968.	10	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Dubravko Vučetić	
Course	Marine electrical systems	
Study Programme	NAUTICAL STUDIES AND MARITIME TRANSPORT TECHNOLOGY - 2014	
Level	Undergraduate	
Type of Course	Core	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	45+0+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of this course is to provide basic knowledge of marine electrical engineering, prescribed by STCW and IMO Model Course - Master and Chief Mate

1.2. Prerequisites for Course Registration

1.3. Expected Learning Outcomes

After passing the exam, students will be able to do the following:

1. Explain the basic principles of electrostatics, electrodynamics and electromagnetism.
2. Explain the operating principles of marine electrical machinery and devices.
3. Explain the generation and distribution of electricity on board.
4. Explain the measures of protection against electric shock on board.
5. Explain the principles of explosion protection in electrical devices.
6. Explain the basic principles of automatic control and regulation.
7. Explain marine automation systems.

1.4. Course Outline

Fundamentals of electrostatics, electrodynamics and electromagnetism. Rechargeable batteries. Operating principles of generators, electric motors, transformers. Rectifiers. Frequency converters. Generation of electricity on board. Emergency power supply. Electricity distribution. Switchgear. Electric motor drives for marine devices. Lighting. Navigation lights. Ex protection. Ship electric propulsion. Automation basics. Marine automation systems. Security. Maintenance.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |



1.6. Comments							
1.7. Student Obligations							
Regular attendance at classes, regular midterm exams, final exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1.5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	1.5	Presentation		Practical work	
Portfolio							

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Learning outcomes are evaluated through regular class attendance and activity (10%), continuous partial exams (60%) and final examination (30%). During the class, the student can collect a maximum of 70% of the points as follows:

A) Successfully pass 2 oral partial exams within the prescribed deadlines. Each passed partial exam carries a minimum of 15% and the maximum of 30%. A student who has not achieved all the required learning outcomes cannot pass the partial exam. The following partial exam cannot be accessed unless the previous is passed. The partial exams include:

1st partial exam: Fundamentals of electrostatics, electrodynamics and electromagnetism. (Learning Outcomes 1)

2nd partial exam: marine electrical machinery and devices, generation and distribution of electricity on board (Learning Outcomes 2-3)

B) Active attendance (lectures and exercises). Each class absence accounts as -1% of the point.

Students who pass 2 partial exams can apply for the final oral exam (Learning Outcomes 4-7) and earn a minimum of 15% and a maximum of 30% of the points.

Examples of evaluating learning outcomes in relation to set learning outcomes are:

1. Explain Ohm's Law
2. Explain the operating principles of induction motor
3. Explain generator synchronization
4. Explain protective grounding
5. Explain Exd protection

1.10. Main Reading

D. Vučetić, Brodski električni sustavi, Pomorski fakultet, Rijeka 2013 web edition

1.11. Recommended Reading

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
D. Vučetić, Brodski električni sustavi, Pomorski fakultet, Rijeka 2013	web	

1.13. Quality Assurance

Quality assurance is based on Faculty ISO 9001 system.



3.2. Course description

Generic information		
Head of Course	Sandra Tominac Coslovich, PhD, Associate Professor	
Course	Maritime English 3	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	core	
Year of Study	2nd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours(L+E+S)	15+30+0 (1+2+0)

1.GENERAL COURSE DESCRIPTION

1.1.Course Objectives

The objective of the course is to master the basic and specialized linguistic knowledge and skills required for education and training for certification under the provisions of IMO STCW Convention 1995 as amended for a watch-keeping officer on ships of 500 GT or more, Chief Mate and Master of ships of 3000 GT or more, as well as to acquire communicative competence in English for the purpose of ensuring safety of navigation and marine environment protection in radio communication and marine meteorology. Furthermore, the goal is to develop the level of knowledge of maritime and general English language, as well as to master the linguistic knowledge and skills to enable students to learn, gain knowledge and follow the technological advances in the global maritime industry and to further develop the four language skills: reading, listening, writing and speaking and team work abilities

1.2.Prerequisites for Course Registration

Passing the course Maritime English 2

1.3.Expected Learning Outcomes

After taking the course, the student will be able to:

1. differ and define the terms and linguistic communication acts in the safety of navigation and compare them in Croatian and English;
2. interpret and compose routine radio messages according to the IMO STCW Convention 1995 (OOW 500 GT or more);
3. interpret and compose a radio distress message and SAR message
4. interpret and compose a radio urgency message
5. interpret and compose a radio safety message (navigational and meteorological message)
6. master the basic terms in meteorology and interpret and translate a weather report

1.4.Course Outline



The course content meets the requirements of the IMO STCW Convention 1995.

The communicative approach to learning is a dominant characteristic of learning since it focuses on student-centered language learning, group work and developing cognitive abilities in language learning.

The course focuses on the following:

- professional maritime lexis/terms in nautical, information-communication and technical register of Maritime English (simple lexical forms, compounds, collocations, lexical sets),
- maritime VHF communication in English (ITU Radio Regulations and IMO SMCP 2001) – routine radio messages, distress, urgency and safety messages, SAR messages
- marine meteorology – basic terms, weather reports
- application of Standard Marine Communication Phrases (SMCP 2001) and ITU Radio Regulations with selected topics
- speech acts and linguistic functions (orders, requests, instructions, information, advice, intention, warning, prohibition, etc.) in maritime communication (discourse)
- grammar: pronunciation and intonation; syntax (dominant grammar structures in a maritime text/discourse)

<i>1.5. Modes of Instruction</i>	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
<i>1.6. Comments</i>							
<i>1.7. Student Obligations</i>							
Class attendance, activities, continuous assessment and final exam							
<i>1.8. Assessment¹ of Learning Outcomes</i>							
Course attendance	0,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio		Final exam	1,5				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Learning outcomes are assessed in class through two written exams (midterm exams) (70 %) and the final written exam (30%)

1st midterm exam for the outcomes 1,2 (35%)

2nd midterm exam for the outcomes 3, 4, 5 (35%)

Final exam for the outcomes 1-6 (30%)

Examples of assessment for individual outcomes in midterm exams and the final exam:

1. Compose the conversation between two ships taking into consideration the speech acts and the standard marine communication phrases - SMCP (outcomes 1 and 2)
2. Write a distress message following the guidelines (outcome 3)
3. Write an urgency message following the guidelines (outcome 4)
4. Interpret a safety message (outcome 5)
5. Translate a weather report (outcome 6)

1.10. Main Reading

- Pritchard, B. (1995) Maritime English 1, Školska knjiga, Zagreb: Units: 11 (Marine Meteorology), Unit 20 (Meeting Heavy Weather), Units 36-38 (Maritime Communications) – accessible on Merlin (moodle.srce.hr)

- Pritchard, B. Maritime Communications & IMO SMCP 2001 (Sections I-IV) - accessible on Merlin (moodle.srce.hr)

- Standard Marine Communication Phrases (IMO SMCP 2001). Pomorski fakultet u Rijeci, 2006.

- MarEng, Web-based Maritime English Learning Tool, EU Leonardo Project - http://mkkdok.utu.fi/mat/marengplus_learning_tool/index.html

- Activities and materials on e-learning platform Merlin (moodle.srce.hr)

1.11. Recommended Reading

- Kluijven, P. van (2003) International Maritime English Programme. Alk&Heijnen, Alkmaar

- Luzer-Spinčić: Gramatička vježbenica za pomorce, Pomorski fakultet, Rijeka 2001.

- Search and Rescue - SAR Seamanship Reference Manual - Chapter 11: <http://www.dfo-mpo.gc.ca/Library/253768.pdf>

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Pritchard, B. (1995) Maritime English 1, Školska knjiga, Zagreb: Units: 11 (Marine Meteorology), 20 (Meeting Heavy Weather), 36-38 (Maritime Communications).	accessible on Merlin (moodle.srce.hr)	60
Pritchard, B. Maritime Communications & IMO SMCP 2001 (Sections I-IV)	accessible on Merlin (moodle.srce.hr)	60
Standard Marine Communication Phrases (IMO SMCP 2001). Pomorski fakultet u Rijeci, 2006.	10	60
MarEng, Web-based Maritime English Learning Tool, EU Leonardo Project	Accessible online http://mkkdok.utu.fi/mat/marengplus_learning_tool/index.html	60

1.13. Quality Assurance

The quality of the course is monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the course are analyzed and a survey is conducted among the students once per semester.



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3.2. Course description

Generic information		
Head of Course	Albin Redžić, mag.cin.	
Course	Physical education 3	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	UNDERGRADUATE DEGREE PROGRAMME	
Type of Course	core	
Year of Study	2nd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	1
	Number of Hours (L+E+S)	0+30+0 (0+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Introduce students to the importance of continuing to maintain the health of seafarers through physical training, basic, general and specific motor skills: climbing rope and sailboats, drowning, swimming, sailing and rowing. adaptive and creative abilities in contemporary living and study conditions.

In addition, the objective of the Physical and Health Culture course is to convey basic health and work-life information to students.

1.2. Prerequisites for Course Registration

Prerequisite for enrollment is a passed Physical and Health Education course 2

1.3. Expected Learning Outcomes

After completing the course, students will be able to:

1. Better mental and physical health
2. Maintain health status by exercising
3. pursuing a physically active lifestyle
4. promoting the value of an active and healthy lifestyle

1.4. Course Outline

Personal implementation program for continuous physical training of seafarers during navigation (2, 4, 6, 8 monthly programs). Maintaining the health of seafarers through physical exercise. Measuring heart rate at rest, after exertion (running) and after recovery (2 minutes after running). Flight, reflection, boredom on the run and in the boat and possible accidents. Running to the alarm site. Climbing and descending the ladder. Work, fatigue, rest. Climbing up and down rope and sail ladder. Optional activity. General and specific physical preparation of seafarers.



Explosive power of seafarers and reactions during an accident on board. Flexibility, balance of the organism. Precision. Speed of movement of seafarers. Lifting loads. Typical right and wrong movements. Breathing exercises. Chest breathing. Belly breathing. Importance of kinesiological education, recreation, agonistics, kinesitherapy of seafarers. Health (WHO). Swimming: skating, floating, breathing technique, arm work, leg work, correcting typical breathing errors, strains and legs. Swimming exercises in pain of various parts of the spine: neck. cross. rump. Chest Swimming Technique. Breathing, breathing techniques, leg work. Dolphin swimming technique: hand work, foot work, breathing, coordination of work of hands, feet and breathing, work of hips. Swimming start, turn, jumps, jumps of your choice. Polystructural complex motions: volleyball with elemental techniques. Determination of the personal student status of a course or class completed based on the arrivals or non-attendance of classes and activities or inactivity in teaching.

1.5. Modes of Instruction

Lectures

Seminars and workshops

Exercises

E-learning

Field work

Practical work

Multimedia and Network

Laboratory

Mentorship

Other _____

1.6. Comments

1.7. Student Obligations

Active class attendance and activity in at least 70% of classes.

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Active class attendance and activity in at least 70% of classes.

1.10. Main Reading

Recommendation: Heimer, S. (2003) Promicanje zdravstveno-preventivne tjelesne aktivnosti u RH. Sport za sve, 21 (35), 3-4.

1.11. Recommended Reading

1. Volčanšek B.: Bit plivanja, Kineziološki fakultet Sveučilišta u Zagrebu, Zagreb, 2002.
2. Conner D., Levitt M.: Naučite jedriti, Gandalf, Zagreb, 2001.
3. Graver D.K.: Scuba diving, Human Kinetics Publisher, Algoritam, Zagreb, 1993.
4. Anderson B.: Stretching, Vježbe istezanja za svakodnevni fitness: trčanje, plivanje, tenis, biciklizam, skijanje, košarka, nogomet i ostale sportove, Gopal, d.o.o., Zagreb, 1997.
5. Anderson B., Burke E., Pearl B.: Fitnes za sve, Gopal, d.o.o., Zagreb, 19997.
6. Janković V., N. Marelić.: Odbojka, Fakultet za fizičku kulturu Sveučilišta u Zagrebu, Zagreb 1995.

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.12. Number of Main Reading (Examples)

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted. Each class is closely monitored for each (none) arrival and activity of the student on a separate sheet Physical and Health Culture, where the results of longitudinal monitoring are in general and specific psychomotor abilities, knowledge and achievements and functional abilities. The course of Physical and Health Education is evaluated for a particular semester by enrolling in the ISVU system as "PASSED".



3.2. Course description

Generic information		
Head of Course	Željko Sesar , PhD MD , Assistant professor	
Course	Maritime medicine	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	3
	Number of Hours (L+E+S)	(30+15+0) (2+1+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

To train future Merchant marine deck Officers - students of Nautical Studies and Maritime Transport Technology in providing emergency medical assistance independently, using manuals and telemedicine counselling; stabilizing and caring for the patient until the restoration of optimal health status or availability of a higher level of medical care, in accordance with the STCW Convention.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

Students are expected to be able to:

1. Fulfil properly the duties and obligations of a certified ship's officer (medical help) in ship's navigation
2. Provide for crew members of the ship an adequate level of medical assistance and safety of life and health at sea
3. Has developed general competencies for providing first aid; ability to provide urgent medical assistance in different navigation conditions at sea
4. The ability to use telemedicine advice from the mainland.

1.4. Course Outline

Recognizing emergencies. Assessment of the condition of the injured and sick person. Applying appropriate procedures in life-threatening situations. Stabilizing and maintaining a critically ill patient. Exchange of Medical Information (Radio Medico). Primary patient care to stabilize or restore optimal health condition using telemedicine procedures and appropriate manuals. Use of maritime medical manuals.

1.5. Modes of Instruction

- | | |
|--|---|
| <input checked="" type="checkbox"/> Lectures X | <input type="checkbox"/> Practical work |
| <input checked="" type="checkbox"/> Seminars and workshops X | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises X | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations



Active attendance at classes. At least 70% of course attendance.

Successful demonstration of medical skills and passing the final oral exam .

1.8. Assessment¹ of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	0,5	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final oral exam (according to the Regulations on studies of the University of Rijeka and the Regulations on studies at the Faculty of Maritime Studies in Rijeka).

Continuous assessment: Test covering practical knowledge from the course material - a minimum of 60% of knowledge is required.

Final oral exam:

The final oral exam checks the completeness of theoretical knowledge in the course material, both theoretical part and practical skills - it is necessary to acquire at least 50% of knowledge.

1.10. Main Reading

1. . Mulić R., Ropac D.: Medicina za pomorce
2. "Osposobljenost za pružanje medicinske skrbi na brodu" (autorizirana predavanja)
3. Soldo I., Sesar Ž.: Zdravstveni savjeti za pomorce

1.11. Recommended Reading

1. WHO International Medical Guide for Ships
2. Medical First Aid Guide (MFAG) for use in Accidents Involving Dangerous Goods, 2010
3. Međunarodni Signalni Kodeks (Part 3: Medical Signal Code)

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Medicina za pomorce	20	80
Osposobljenost za pružanje medicinske skrbi na brodu (autorizirana predavanja)	20	80
Zdravstveni savjeti za pomorce	20	80

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted .

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



3.2. Course description

Generic information		
Head of Course	Robert Mohović, PhD, Full professor	
Course	Cargo Handling 1	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	30+30+0 (2+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Introduce students to International regulations, recommendations and standards related to handling, stowing, securing and transporting cargo. Introduce students to ship's tables and other ship's documentation related to cargo handling and cargo transportation. Introduce students to calculation of ship's stability and ship's strength in exploitation. Introduce students to loading calculation and problems in waters of different densities, stowing, securing and transportation of dangerous goods by sea. Introduce students to methods of draft survey.

1.2. Prerequisites for Course Registration

Ship design and construction 2 and Cargo carried by sea - attended lectures

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

- 1. analyse and properly interpret the basics of cargo handling and influencing factors for cargo stowage*
- 2. correctly interpret International regulations, recommendations and standards related to technology of cargo transportation*
- 3. use of tables and other ship's documentation related to cargo handling and transportation of cargo by sea*
- 4. solve problems related to ship's stability and stress in exploitation*
- 5. solve problems related to loading cargo in waters of different densities*
- 6. solve problems related to stowing and securing of cargo*
- 7. know the technology of transporting of dangerous goods and stowing and segregation of dangerous goods*
- 8. know how to use methods of draft survey*

1.4. Course Outline

International regulations, recommendations and standards related to cargo handling. Capacity plan and Deadweight of the vessel. Use of ship's tables. Basic principles of stowage plans. Ship's stress in exploitation. Influence of cargo and cargo operations on the transverse and longitudinal stability of the vessel. Characteristics of the equipment for dunnaging, lashing and securing cargo, Methods to assess the efficiency of securing arrangements. Loading in salt, brackish and fresh water. Transportation of dangerous goods by sea. Determining the weight of loaded/discharged cargo with draft survey methods.



1.5. Modes of Instruction	<input type="checkbox"/> Lectures X <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises X <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
1.6. Comments	Practically use of various ship's tables and other ship's documentation related to cargo handling and solving various problems in the field of planning and transportation of cargo by sea.						
1.7. Student Obligations							
Active attendance of classes and at least 70% of completed classes for admission to the exam. Successful passing 2 colloquiums (numerical problem solving in the field of planning and transportation of cargo by sea) and the final oral exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio		Final exam	2				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final oral exam (according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka)

Continuous assessment:

-2 colloquiums with numerical problem solving in the field of planning and transportation of cargo by sea, all tasks need to be solved

Final exam:

Final exam (oral exam) checks the completeness of theoretical knowledge in the field of course Cargo handling 1, it is necessary to achieve a minimum of 50% of the required theoretical knowledge.

1.10. Main Reading

1. Cargo Handling 1, Lectures and Exercises on Robert Mohović's personal web site, Faculty of Maritime Studies University of Rijeka
2. D. Vranić, R. Ivče: Tereti u pomorskom prometu, Pomorski fakultet Rijeka, Rijeka, 2007.
3. Biblioteka pomorskog časnika, sv.1, sv.2, sv.3, sv.4

1.11. Recommended Reading

1. Thomas Stowage 8th edition, Brown Son & Ferguson Ltd., London 2012.
2. Buljan, I.: Krcanje i slaganje tereta, Ognjen priča, Zagreb, 1980.
3. House, D.J.: Cargo Work 7th edition, Butterworth-Heinemann, UK, 2005.
4. Uršić, J.: Stabilitet broda I dio, Sveučilište u Zagrebu, Zagreb, 1962.
5. Derrett, D.R., Barrass, C.B.: Ship Stability for the Masters and Mates, Butterworth-Heinemann, Oxford, 2011.
6. Clark, I.C.: The Management of Merchant Ship Stability, Trim and Strenght 6th edition, The Nautical Institute, London, 2006.
7. Milošević, M.: Nauka o brodu III dio, Pomorska škola Kotor, Kotor, 1961.
8. Vademecum Maritimus, Podsjetnik pomorcima, Pomorski fakultet u Rijeci, Rijeka, 2014.
9. Pravila za tehnički nadzor pomorskih brodova, Dio 4. – Stabilitet, Hrvatski registar brodova, Split, 2013.
10. Pravila za tehnički nadzor pomorskih brodova, Dio 23. – Prijevoz tereta, Hrvatski registar brodova, Split, 2009.
11. Code of Safe Practice for Cargo Stowage and Securing, IMO, 2011 with amendments
12. SOLAS, Consolidated 2014, IMO
13. International Maritime Solid Bulk Cargoes Code (IMSBC), IMO, London, 2018.
14. IMDG Code, IMO, London, 2018.
15. Code of Safe Practice for Ships Carrying Timber Deck Cargoes, IMO, London, 2011.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Cargo Handling 1, Lectures and Exercises on Robert Mohović's personal web site	web	
Tereti u pomorskom prometu	Library 11	
Biblioteka pomorskog časnika	Library 10	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	PhD Đani Šabalja, Assistant Professor	
Course	Astronomical Navigation	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate Degree Programme	
Type of Course	mandatory	
Year of Study	II	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	6
	Number of Hours (L+E+S)	2 + 2

1. GENERAL COURSE DESCRIPTION

1.1. The objective of the course is to provide students with a basic knowledge of the apparent daily movement of celestial bodies and the determination of the position of the ship by various methods of astronomical navigation, with the practical use of sextants and publications necessary to obtain the precise position of the ship

1.2. Prerequisites for Course Registration

1.3. Students will be able to:

- display the position of celestial bodies using different coordinate astronomical navigation systems.
- Convert the time,
- Determine the beginning and end of the twilight as well as the time of the true sunrise / sunset
- Make adjustments to the sextant and measure the height of the celestial body,
- Determine the latitude of the ship's position using the Sun and Polaris
- Determine the position of the ship by the direct method,
- Determine the position of the ship by Marcq St. Hilaire method

1.4. Course Outline

1. Basic concepts in astronomy and astronomical navigation,
2. Determination of the celestial sphere. Coordinate systems: horizontal, equatorial, , ecliptic. The apparent motion of the celestial bodies,
3. The first astronomical spherical triangle. Second Astronomical Spherical Triangle,
4. The celestial bodies of the solar system. Geocentric and heliocentric systems. The relationship between earthly and celestial coordinates. The true motion of the c,
5. Phenomena that seemingly alter the position of the celestial bodies on the celestial sphere. Astronomical Refraction. Parallax. Aberration. Precession and nutrition,
6. Navigation instruments for measuring altitude. Historical overview (quadrant, astrolabe, backbone,...). Ship sextant. Sextant optical principle. Sextant errors and their correction.
7. Correcting measured altitude . Corrections, types, method and sequence of application,
8. Determination of ship position by astronomical navigation methods. Indirect method - (altitude - Marcq de Saint Hilaire method). The direct method., Running Fix.



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input checked="" type="checkbox"/> Field work		<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____	
1.6. Comments					
1.7. Student Obligations					
1.8. Assessment ¹ of Learning Outcomes					
Course attendance	(1)	Class participation	(1)	Seminar paper	Experiment
Written exam	(1)	Oral exam	(2)	Essay	Research
Project		Continuous Assessment	(1)	Presentation	Practical work
Portfolio					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final exam (according to the Regulations on Studies of the University of Rijeka and the Regulations. Faculty of Maritime Studies in Rijeka). Continuous assessment: a pre-requisite exam, a minimum of 50% correct answers should be obtained (I1, I2, I3, I4). Final exam: oral exam. A minimum of 50% correct answers (I5) must be obtained.

Examples of evaluating learning outcomes:

1. Explain the movement of celestial bodies in the vertical and parallel spheres. (I1)
2. Explain the procedure for determining the time of passage of the Sun through the upper meridian and the time of beginning and end of nautical twilight (I2)
3. Explain the positioning of the ship by the direct method.
4. Explain the determination of the sextant index correction value and the sequence of procedures preceding it (I4)
5. Explain what are the options for determining the value of the magnetic compass deviation in astronomical navigation. (I5)

1.10. Main Reading

1. Astronomical Navigation / Miloš Š. Lipovac
2. A Short Guide to Celestial Navigation

1.11. Recommended Reading

1. Astronomical Navigation 2 / Maks Klarin

1.12. Number of Main Reading Examples

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
1. Astronomical Navigation / Miloš Š. Lipovac	4	
2. A Short Guide to Celestial Navigation	unlimited	

1.13. Quality Assurance



3.2. Course description

Generic information		
Head of Course	Renato Ivče, PhD, Full professor	
Course	Cargo handling 2	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+30+0 (2+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the characteristics of cargo in maritime transport, the principles of handling with all types of cargo, planning loading cargo on the vessels with different technologies, safety measures for cargo transportation

1.2. Prerequisites for Course Registration

Passed Cargo handling 1 exam

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

- 1. define cargo stowage on vessels of different technologies*
- 2. interpret application of rules and codes related to cargo handling and transporting by sea*
- 3. define and explain the requirements related to transportation of dry cargo by sea*
- 4. define and explain the requirements related to transportation of liquid cargo by sea*
- 5. use of computer programs "Loading master" applicable for various cargo*
- 6. analyse transporting and handling outputs for different categories of vessels*

1.4. Course Outline

Transportation of general cargo by sea. Transportation of containers by sea. Transportation of bulk cargo by sea. Transportation of grain by sea. Transportation of liquid cargo by sea. Transportation of crude oil and products by sea. Transportation of chemicals in bulk by sea. Transportation of liquefied gases by sea. Transportation of timber cargo by sea. Transportation of refrigerated cargo by sea. Transportation of cargo by RO-RO vessels (Ships for carry pallets), LASH vessels. Transportation of heavy cargo by sea. Transportation of various types of cargo by sea. Comparative analysis of transporting and handling outputs of the considered categories of vessels.

1.5. Modes of Instruction

- | | |
|---|---|
| <input type="checkbox"/> Lectures X | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises X | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |



1.6. Comments							
1.7. Student Obligations							
<i>Active attendance of classes and at least 70% of completed classes for admission to the exam. Successful passing colloquiums and the final oral exam.</i>							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio		Final exam	1,5				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam is carried out in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

Through continuous assessment during the course, 70% of the acquired learning outcomes are evaluated through 1st colloquium - learning outcomes 1-3 (0,75 ECTS (35%)), 2nd colloquium - learning outcomes 3-5 (0,0,75ECTS (35 %)), whereby the student must achieve a minimum of 52% of points in each exam, at the final part of the exam it is evaluated (1.5 ECTS (30%)) acquired learning outcomes (1-5) whereby a student must pass a minimum of 52% of points for passing the final exam.

Examples of evaluation of a particular learning outcome during class and at the final exam

1. Explain the cargo plan.
2. Define the requirements for stowage general cargo ,
3. Define requirements for grain transportation by sea.
4. Define requirements for bay plan on container ship.,
- 5.Explain crude oil washing

1.10. Main Reading

1. House D.J., *Cargo Work 7th edition, Butterworth-Heinemann, UK 2005.*
2. Vranić, D., Kos, S., *Morska kontejnerska transportna tehnologija, Pomorski fakultet, 2008*
3. Komadina P., *Prijevoz ukapljenih plinova morem, Pomorski fakultet, 1992*
4. Komadina P. *Tankeri, Pomorski fakultet, 1994*

1.11. Recommended Reading

1. Vranić D., Ivče R., *Tereti u pomorskom prometu, Pomorski fakultet, 2006*
2. *Biblioteka pomorskog časnika, sv. 1,*
3. *Biblioteka pomorskog časnika sv. 2,*
4. *Biblioteka pomorskog časnika sv. 3,*
5. *Biblioteka pomorskog časnika sv. 4.*
6. *International regulations and codes related to cargo handling and transportation of cargo by sea*

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
<i>Cargo Work</i>	<i>unlimited</i>	
<i>Morska kontejnerska transportna tehnologija</i>	7	
<i>Prijevoz ukapljenih plinova morem</i>	6	
<i>Tankeri</i>	5	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Serdjo Kos, PhD, Full professor (tenured), David Brčić, PhD, Assistant professor	
Course	Electronic navigation	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	(30+30+0) (2+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the course Electronic Navigation is to acquaint students with the basic principles of modern electronic technologies and navigation and non-navigation devices used in maritime navigation, and with the correct using of these devices, crucial for quality and safe conducting of maritime navigation.

1.2. Prerequisites for Course Registration

Attended and passed the courses: Mathematics and Ship Electrical Engineering. Students who have not completed nautical schools are required to attend and successfully pass the Introductory Differential Program (Monitoring and plotting with a radar device and the use of ARPA devices, working level).

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Analyze and correctly interpret the principles of operation of hyperbolic navigation.
2. Analyze and correctly interpret the principles of operation and features of radar navigation.
3. Analyze and correctly interpret the principles of satellite navigation.
4. Analyze and correctly interpret the principles of inertial navigation.
5. Interpret important elements of ship conducting using electro-magnetic waves.
6. Analyze and correctly interpret the use of electronic echo sounder.
7. Analyze and correctly interpret the use of various types of ship's speed logs.
8. Analyze and correctly interpret the use of VDR, AIS and TV in maritime navigation.
9. Analyze and correctly interpret the principle of operation of the ECDIS system with all its associated subsystems.
10. Analyze and correctly interpret the concept of Integrated Navigation System (INS) and Integrated Bridge System (IBS).
11. Analyze and correctly interpret and calculate avoidance maneuvers in radar plotting
12. Apply the acquired knowledge in the conducting of maritime navigation in terms of:
 - Determining the coordinates of the position of the ship at sea by electronic navigation systems.
 - Analyzing and correct choice of individual methods for determining the accurate position of the ship.
 - Proper use of various electronic systems when measuring the depth of the sea, measuring the speed and distance traveled by the ship, and when different types of ship maneuvers are in use.



- Practical operation of the ECDIS system and the correct use of electronic nautical charts and digital publications.

1.4. Course Outline

Radio-goniometric principles. Hyperbolic navigation. Working principles. Impulse and phase systems. E-Loran system. Working principle and errors. Radar navigation - principle of operation and errors. Application of radar in navigation. Characteristics of navigation radars. ARPA system - working principle and characteristics. Satellite navigation. GNSS. PNT. Working principles. GPS. DGPS. Glonass. Galileo. Beidou / Compass. SBAS. Errors in satellite navigation systems. Ionospheric disturbances and geomagnetic storms. Gyrocompasses. Performances, types, working principle, errors. Inertial navigation. History. Accuracy. Electronic echo sounders. Working principle and errors. Ship's speed logs. Working principle and errors. Fundamentals of maritime kinematics (Radar plotting in avoiding collisions at sea). VDR. AIS. TV in maritime navigation. Integrated navigation systems / Integrated bridge systems. E -Navigation. ECDIS system.

1.5. Modes of Instruction

- | | |
|---|---|
| <input type="checkbox"/> Lectures X | <input type="checkbox"/> Independent tasks X |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises X | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work X | <input type="checkbox"/> Other X practical work on a navigation simulator / laboratory |

1.6. Comments

Lectures in the course Electronic Navigation cover material in accordance with the STCW Convention, the part related to electronic navigation systems and navigation guidance in general (Model Course 7.01; Function 1).
The course exercises are divided as follows:
- practical work on a navigation simulator / laboratory, which includes knowledge, use and application of electronic navigation devices,
- numerical exercises in the classroom, which refers to radar plotting tasks,
- navigation practice.

1.7. Student Obligations

Active attendance of classes and at least 70% of course (for obtaining a confirmation for STCW certificate at least 95% of attended course).
Passed colloquiums (with mandatory homework) and successful demonstration of acquired knowledge related to describing and interpreting the work of individual electronic navigation systems and practical guidance of electronic navigation with their help and passed the final oral exam.

1.8. Assessment¹ of Learning Outcomes

Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment 2 written colloquiums	2	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The procedure for evaluating the acquired learning outcomes takes place according to the Rule book on Studies of the University of Rijeka and the Rule book on Studying at the Faculty of Maritime Studies in Rijeka as follows: 70% in classes and 30% in the final oral exam.
Continuous assessment:

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



- Theoretical colloquium in the field of basics of electronic navigation - it is necessary to achieve a minimum of 50% of the total result (learning outcomes 1, 2, 4, 6, 7).

- Theoretical colloquium in the field of satellite and inertial navigation - it is necessary to achieve a minimum of 50% of the total result (learning outcomes 3, 4, 5, 8, 9, 10).

- Numerical / graphic colloquium in radar plotting - it is necessary to achieve a minimum of 90% of the task (learning outcome 11/).

Final oral exam:

At the final oral exam / colloquiums, the integrity of theoretical knowledge from the course material is evaluated - It is necessary to achieve a minimum of 50% of the required theoretical knowledge (all learning outcomes, especially the learning outcome 12).

Examples of evaluating learning outcomes in relation to defined learning outcomes are:

1. Describe the principle of operation of the e-Loran system.
2. Describe the principle of measuring angles and distances by a radar system.
3. Explain position errors determined by satellite navigation systems.
4. Describe the working principle of inertial navigation.
5. Explain the propagation characteristics of UHF and VHF radio waves.
6. Describe the principle of operation of an ultrasonic depth sounder.
7. Highlight the differences between the types of ship's speed logs used in marine surface navigation.
8. Describe the purpose and principle of operation of VDR and AIS devices.
9. Describe the purpose of the ECDIS system and interpret the basic navigation information within the system.
10. Describe the concept of INS and IBS systems.
11. Describe and numerically determine avoidance maneuvers using a maneuvering diagram.
12. Apply different methods of determining position in conducting coastal navigation.

1.10. Main Reading

1. Bowditch: American Practical Navigator, Vol. I, Defense Mapping Agency, Washington, USA, 1984.
2. Kos, S., Zorović, D. & Vranić, D: Terestrička i elektronička navigacija, monografija, Pomorski fakultet u Rijeci, Rijeka, 2010.
3. Kos S., Vranić D. & Zorović D: Elements of Electronic Navigation for Deck Officers and Masters, Faculty of Maritime Studies, Rijeka, 2005.

1.11. Recommended Reading

1. Admiralty Manual of Navigation, Vol. I and Vol. IV, The Stationary Office, London, 1999.
2. Appleyard, S.F. et al: Marine Electronic Navigation, Routledge & Kegan Paul, London, 1988.
3. Benković F. i grupa autora: Terestrička i elektronska navigacija, Hidrografski institut Ratne mornarice, Split, 1986.
4. Global Positioning System – Navigation, Vol. V, The Institute of Navigation, Alexandria, 1998.
5. Sušanj, J: Navigacijski radar, Pomorski fakultet u Rijeci, Rijeka, 2006.
6. Sušanj J: Instrumenti elektroničke navigacije, Pomorski fakultet u Rijeci, Rijeka, 1996.
7. Sušanj J: Radar i radarsko osmatranje, Pomorski fakultet u Rijeci, Rijeka, 2001.
8. Tetlay L. & Calcutt D: Electronic Navigation System, Butterworth Heineman, Oxford, 2001.
9. Weintrit, A: The Electronic Chart Display and Information System (ECDIS): An Operational Handbook, Taylor & Francis, Abingdon, 2009.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
American Practical Navigator, Vol. I	1	85
Terestrička i elektronička navigacija	20	85
Teaching material for e-course available on the Merlin learning system	-	85

1.13. Quality Assurance



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The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Sandra Tominac Coslovich, PhD, Associate professor	
Course	Maritime English 4	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	core	
Year of Study	2nd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours(L+E+S)	15+30+0 (1+2+0)

1.GENERAL COURSE DESCRIPTION

1.1.Course Objectives

The objective of the course is to master the basic and specialized linguistic knowledge and skills required for education and training for certification under the provisions of IMO STCW Convention 1995 as amended for a watch-keeping officer on ships of 500 GT or more, Chief Mate and Master of ships of 3000 GT or more, as well as to acquire communicative competence in English for the purpose of ensuring safety of navigation and marine environment protection in the field of ship handling, collision avoidance and nautical marks, aids and navigational equipment. Furthermore, the goal is to develop the level of knowledge of maritime and general English language, as well as to master the linguistic knowledge and skills to enable students to learn, gain knowledge and follow the technological advances in the global maritime industry and further develop the four language skills: reading, listening, writing and speaking and the team work abilities

1.2.Prerequisites for Course Registration

Passing the course Maritime English 3.

1.3.Expected Learning Outcomes

After taking the course, the student will be able to:

1. understand and describe different ways of ship handling (berthing, unberthing, mooring, unmooring, anchoring, piloting, towing) by using relevant terminology in English
2. distinguish, define and apply terms in the field of ship handling (berthing, unberthing, anchoring, piloting and towing)
3. distinguish and apply terms pertaining to collision avoidance and compare them in Croatian and English
4. interpret and apply terms regarding navigational marks, aids and modern navigational equipment
5. make an oral presentation on a maritime topic in English

1.4.Course Outline



The course content meets the requirements of the IMO STCW Convention 1995.

The communicative approach to learning is a dominant characteristic of learning since it focuses on student-centered language learning, group work and developing cognitive abilities in language learning.

The course focuses on the following:

- professional maritime lexis/terms in nautical, information-communication and technical register of Maritime English (simple lexical forms, compounds, collocations, lexical sets), in the field of manoeuvring (berthing, unberthing, mooring, unmooring, anchoring, piloting, towing), collision avoidance, interpreting markings and aids in navigation and using modern navigational equipment
- maritime VHF communication in English (ITU Radio Regulations and IMO SMCP 2001) in manoeuvring (berthing, unberthing, mooring, unmooring, anchoring, piloting, towing), collision avoidance, interpreting markings and aids to navigation and using modern navigational equipment
- application of Standard Marine Communication Phrases (SMCP 2001) and ITU Radio Regulations with selected topics (berthing, unberthing, mooring, unmooring, anchoring, piloting, towing, collision avoidance, arrival/departure, communicating with the VTS, etc.)
- speech acts and linguistic functions (orders, requests, instructions, information, advice, intention, warning, prohibition, etc.) in maritime communication (discourse)
- grammar: pronunciation and intonation; syntax (dominant grammar structures in a maritime text/discourse)

<i>1.5. Modes of Instruction</i>	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____
----------------------------------	--	--

1.6. Comments

1.7. Student Obligations

Class attendance, activities, continuous assessment and final exam

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,5	Class participation		Seminar paper	0,5	Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	2	Presentation		Practical work	
Portfolio		Final exam					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Learning outcomes are assessed in class through two written exams (midterm exams), a presentation and the final exam (oral) – 80 % in class (two midterm exams 60 %, presentation 20 %), 20 % on the final exam (oral)

1st midterm exam for the outcomes 1, 2 (25 %)

2nd midterm exam for the outcomes 3, 4 (25 %)

Presentation for the outcome 5 (20 %)

Final exam for the outcomes 1-5 (30 %)

Examples of assessment for individual outcomes in midterm exams and the final exam:

1. Describe the Mediterranean moor (outcome 1)
2. Describe the anchoring procedure (outcome 2)
3. Describe the procedure of the give-way vessel and the stand-on vessel (outcome 3)
4. Describe the north cardinal buoy (outcome 4)
5. Name the aids to navigation (outcome 4)

1.10. Main Reading

- Pritchard, B. (1995) Maritime English 1, Školska knjiga, Zagreb, (Units: 18 Unberthing and leaving dock, 19 Vessel underway, 21 Arrival at a port, 22 Anchoring, 23 Berthing, 26 NavAids, 33 Colregs, 35 Aids to Navigation, Buoyage) – available in Merlin (moodle.srce.hr)

- Standard Marine Communication Phrases (IMO SMCP 2001). Pomorski fakultet u Rijeci, 2006.

- MarEng, Web-based Maritime English Learning Tool, EU Leonardo Project - http://mkkdok.utu.fi/mat/marengplus_learning_tool/index.html

- Activities and materials on e-learning platform Merlin (moodle.srce.hr)

1.11. Recommended Reading

- Kluijven, P. van (2003) International Maritime English Programme. Alk&Heijnen, Alkmaar

- Luzer-Spinčić: Gramatička vježbenica za pomorce, Pomorski fakultet, Rijeka 2001.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Pritchard, B. (1995) Maritime English 1, Školska knjiga, Zagreb, (Units: 18 Unberthing and leaving dock, 19 Vessel underway, 21 Arrival at a port, 22 Anchoring, 23 Berthing, 26 NavAids, 33 Colregs, 35 Aids to Navigation, Buoyage)	Available online Merlin (moodle.srce.hr)	90
Standard Marine Communication Phrases (IMO SMCP 2001). Pomorski fakultet u Rijeci, 2006.	10	90
MarEng, Web-based Maritime English Learning Tool, EU Leonardo Project	Available online http://mkkdok.utu.fi/mat/marengplus_learning_tool/index.html	90

1.13. Quality Assurance

The quality of the course is monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the course are analyzed and a survey is conducted among the students once per semester.



3.2. Course description

Generic information		
Head of Course	Albin Redžić, mag.cin.	
Course	Physical education 4	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	UNDERGRADUATE DEGREE PROGRAMME	
Type of Course	core	
Year of Study	2nd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	1
	Number of Hours (L+E+S)	0+30+0 (0+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Introduce students to the importance of continuing to maintain the health of seafarers through physical training, basic, general and specific motor skills: climbing rope and sailboats, drowning, swimming, sailing and rowing. adaptive and creative abilities in contemporary living and study conditions.

In addition, the objective of the Physical and Health Culture course is to convey basic health and work-life information to students.

1.2. Prerequisites for Course Registration

Prerequisite for enrollment is a passed Physical and Health Education course 3

1.3. Expected Learning Outcomes

After completing the course, students will be able to:

1. Better mental and physical health
2. Maintain health status by exercising
3. pursuing a physically active lifestyle
4. promoting the value of an active and healthy lifestyle

1.4. Course Outline

Jumping off the ship, diving under an imagined seaside of half the fuel from the ship, diving mode during a shipwreck. Diving for breath, time and length. Rescue of drowners. Careful approach to the drowning man. Capture of drowning men. Mode of suffocation in the sea and waters. Testing the body's motor knowledge and functional abilities. Basic dance structures. Technique of volleyball elements. Volleyball tactics. Basketball Element Technique. Basketball tactics.



Basics of the English waltz. Navy rowing in a lifeboat with skills and abilities. Function, orders, choices and jobs of the helmsman in the lifeboat. Function of broker (C1 and Z1) and rower. Sowing. Function of each rower individually (C2, Z2, C3, Z3, C4, Z4, C5, Z5, C6, Z6). Non-paddle function. The function of the bowler. The function of shears. The basics of the Wiener waltz. Sport, health and disease prevention with the development of recreational kinesiological activities of seafarers. Changing the position of a Navy rower: Forward, Back, Left, Bottom. Fine co-ordination paddles each rower to coordinate team Navy rowing. Mastering the technique of starting, turning and entering the finish with a life-boat. Testing and evaluation of the motor abilities of the organism. Optional kinesiological activity. Determination of the personal student status of a course or class completed based on the arrivals or non-attendance of classes and activities or inactivity in teaching.

1.5. Modes of Instruction

- | | |
|---|---|
| <input type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active class attendance and activity in at least 70% of classes.

1.8. Assessment¹ of Learning Outcomes

Course attendance	0,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Active class attendance and activity in at least 70% of classes.

1.10. Main Reading

Recommendation: Heimer, S. (2003) Promicanje zdravstveno-preventivne tjelesne aktivnosti u RH. Sport za sve, 21 (35), 3-4.

1.11. Recommended Reading

1. Volčanšek B.: Bit plivanja, Kineziološki fakultet Sveučilišta u Zagrebu, Zagreb, 2002.
2. Conner D., Levitt M.: Naučite jedriti, Gandalf, Zagreb, 2001.
3. Graver D.K.: Scuba diving, Human Kinetics Publisher, Algoritam, Zagreb, 1993.
4. Anderson B.: Stretching, Vježbe istezanja za svakodnevni fitness: trčanje, plivanje, tenis, biciklizam, skijanje, košarka, nogomet i ostale sportove, Gopal, d.o.o., Zagreb, 1997.
5. Anderson B., Burke E., Pearl B.: Fitnes za sve, Gopal, d.o.o., Zagreb, 19997.
6. Janković V., N. Marelić.: Odbojka, Fakultet za fizičku kulturu Sveučilišta u Zagrebu, Zagreb 1995.

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.12. Number of Main Reading (Examples)

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted. Each class is closely monitored for each (none) arrival and activity of the student on a separate sheet Physical and Health Culture, where the results of longitudinal monitoring are in general and specific psychomotor abilities, knowledge and achievements and functional abilities. The course of Physical and Health Education is evaluated for a particular semester by enrolling in the ISVU system as "PASSED".



3.2. Course description

Generic information		
Head of Course	PhD Mirano Hess	
Course	Ship organization and management	
Study Programme	Nautical studies and maritime transport technology	
Level	Undergraduate study	
Type of Course	Compulsory course	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	3
	Number of Hours (L+E+S)	3 + 0 + 0

1. GENERAL COURSE DESCRIPTION
<i>1.1. Course Objectives</i>
To train students to understand and apply the procedures of organized teamwork, human resources management and on-board management in accordance with the latest maritime recommendations and
<i>1.2. Prerequisites for Course Registration</i>
/
<i>1.3. Expected Learning Outcomes</i>
<ol style="list-style-type: none"> 1. Indicate, explain, and interpret procedures for conducting navigational watch 2. Define, explain and differentiate the factors that influence the planning and organization of teamwork 3. Describe, explain and compare elements of human resources management on board 4. Explain, separate and compare the influence of human and other factors on the awareness of the real situation and the decision-making process 5. Highlight and point out similarities and differences in the form of leadership
<i>1.4. Course Outline</i>
<ol style="list-style-type: none"> 1. Organization of duties and allocation of crew responsibilities, ship master, keeping navigational watch 2. Keeping a port watch, general requirements for the crew of a ship 3. Human resources management, error chain, analysis and prevention, awareness of the real situation 4. Management and organization of work, relationship between team members, management and attitude, communication 5. International and national rules and recommendations, maritime organizations and institutions 6. Emergency and emergency preparedness, planning of work activities 7. Forms of leadership and teamwork, ability to perform work tasks, and workload management 8. Working knowledge of crew management and training 9. Knowledge and necessary ability to apply effective resource management and to apply decision-making methods 10. Correlation of human factor and marine accident, analysis of selected marine accident



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work			<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input checked="" type="checkbox"/> Presentation		
1.6. Comments							
1.7. Student Obligations							
Active attendance at classes. Passed a midterm exam and final exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1.5	Class participation	0.3	Seminar paper		Experiment	
Written exam	0.5	Oral exam		Essay		Research	
Project		Continuous Assessment	0.7	Presentation		Practical work	
Portfolio							

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam		
<p>70% in class and 30% in final exam (according to the Regulations on studies of the University of Rijeka and the Regulations on study at the Faculty of Maritime Studies in Rijeka). Continuous assessment: a midterm exam, a minimum of 50% correct answers (I1, I2, I3) must be obtained, and a presentation of the subject for a maximum of 20% of credits in the course. Final exam: written exam in the course subject. A minimum of 50% correct answers should be obtained (I4, I5).</p> <p>Examples of evaluating learning outcomes:</p> <ol style="list-style-type: none"> 1. Explain what officers must agree on and what to consider when taking on navigational watch. (I1) 2. List and explain what factors a master must consider when organizing a navigational watch. (I2) 3. Compare and explain ways in which particular types of complacency affect the degradation of the team work and how to prevent them. (I3) 4. List the indicators of a decrease or loss of the situation awareness and explain ways in which we can maintain awareness. (I4) 5. Explain what a manager doing on the principle of situational leadership does. (I5) 		
1.10. Main Reading		
Hess, M.: Ship organization and management, script on web pages of Faculty of Maritime Studies University of Rijeka, 2020		
1.11. Recommended Reading		
<ol style="list-style-type: none"> 1. Bridge Procedures Guide, ICS, 2016 2. Bridge Team Management, Nautical Institute, 2004 3. Maritime Law, RH 4. STCW Convention, IMO, 2010 5. Code of Safe Working Practices for Merchant Seafarers, TSO, 2018 6. ILO Document for Guidance, 1985 7. SOLAS Convention, IMO, 1974 		
1.12. Number of Main Reading Examples		
	<i>Title</i>	<i>Number of examples</i>
	Hess, M.: Ship organization and management, script on web pages of Faculty of Maritime Studies University of Rijeka, 2020	unlimited
		70



1.13. <i>Quality Assurance</i>		
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies University of Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted.		



3.2. Course description

Generic information		
Head of Course	Biserka Rukavina, PhD	
Course	Maritime roperty law	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Compulsory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	2+ 1 + 0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Provide students with basic knowledge of the legal principles and standards relating to the essential institutes of maritime property law, as well as to instruct students in the legality of the functioning of the essential participants of the navigation business. The aim is to enable students to understand the fundamental legal concepts on which maritime property law bases, to the extent necessary for the successful and sovereign performance of deck officers on merchant ships.

1.2. Prerequisites for Course Registration

No.

1.3. Expected Learning Outcomes

After the exam is passed, students will be able to do the following:

1. Define and interpret the basic legal principles and norms relating to the essential institutes of maritime property law.
2. Explain the basic concepts of proprietary rights on a ship and distinguish and describe the specifics of right of ship owner and other proprietary rights on a ship (mortgage and maritime lien).
3. Define and explain the rights, obligations and responsibilities of the essential participants of navigation business on the basis of international and national maritime property law.
4. Distinguish and interpret the contracts for the exploitation of ships and the documents used in the sea trade.
5. Explain and interpret the basic features of maritime accident, general average, ship collisions, prevention of marine pollution and rescue at sea.
6. Explain the role and importance of insurance in maritime sector, interpret the specificities of the hull and machinery insurance, the insurance of goods and describe the organization, activities and function of P&I clubs.

1.4. Course Outline



The legal sources of maritime private law. The proprietary rights on board (the right of the ship owner - concept, acquisition and loss of rights; modern structure of shipping company; lien on board - term and type, acquisition, termination, settlement). Persons in maritime trade (charterer, shipper, consignee, maritime agent, freight forwarder, stevedore, ship owner and operator; insurer). Contracts for the exploitation of merchant ships - term and division; bareboat charter; contracts for the carriage of goods by sea; contract for the carriage of passengers and luggage; towage contract. Contractual and non-contractual liability of ship owners and operators in the maritime business. General average – term; liquidation. The role of master in the event of general average. Collision of ships – term; civil liability rules. The role of the master in the event of a collision. Rescue at sea – concept and division; salvage reward; specific compensation; standard forms. The role of the ship's master in the salvage operation. Pollution of the marine environment with oil – the responsibility of the ship owner for damage; the role of the ship's master commander in preventing marine pollution. Maritime insurance – concept and division; characteristics and elements of insurance contracts; insurance policy; hull and machinery insurance; insurance of goods in maritime transport; P&I Insurance; co-insurance and reinsurance. Arrest of ship.

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input checked="" type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Presentation					
1.6. Comments							
1.7. Student Obligations							
Class attendance. Practical work (Power Point presentation). The colloquiums. Final exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper	0,25	Experiment	
Written exam	0,5	Oral exam		Essay		Research	
Project		Continuous Assessment	0,75	Presentation		Practical work	
Portfolio							

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam



70 % in class and 30% on the final exam (according to the Ordinance on Studies of the University of Rijeka and the Ordinance on Studies of the Faculty of Maritime Studies in Rijeka).

Continuous knowledge assessment:

2 colloquiums ((1. colloquium 27 points, 2. colloquium 28 points).

Practical work/seminar paper (15 points).

Final exam.

The final exam (written exam) checks the integrity of knowledge and a minimum of 50% correct answers (15 points out of total 30 points) must be obtained.

1. Specify and compare the international and national legal sources governing charter parties.
2. Explain the basic characteristics of maritime liens, especially on the example of seafarers' wages.
3. Describe the difference between the owner of the ship, the operator and the company
4. Indicate the fundamental differences between the time charter party and voyage charter party.
5. Explain the role of the ship's master and crew in the event of a collision.
6. Interpret the Certificate on civil liability for oil pollution damage caused by ships.

1.10. Main Reading

1. Pavić, Drago, Pomorsko imovinsko pravo, Književni krug, Split, 2006.
2. Pomorski zakonik, pročišćeni tekst.

1.11. Recommended Reading

1. Pavić, Drago, Pomorsko osiguranje, Pravo i praksa, Split, 2012.
2. Pavić, Drago, Pomorsko pravo, Knjiga druga: Pravo pomorskih prijevoza, Split, 2002.
3. Pavić, Drago, Pomorsko pravo, Knjiga treća: Pomorske nezgode-pomorsko osiguranje, Split, 2000.
4. Grabovac, Ivo, Pomorsko pravo Republike Hrvatske, Split, 1997.
5. Grabovac, Ivo, Temelj odgovornosti u prometnom pravu, Književni krug, Split, 2000.
6. Grabovac, Ivo, Ogledi o odgovornosti brodarka, Književni krug, Split 1997.
7. Bolanča Dragan, Odgovornost brodarka za izuzete slučajeve, Pravni fakultet, Split, 1996.

1.12. Number of Main Reading Examples

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Pavić, Drago, Pomorsko imovinsko pravo, Književni krug, Split, 2006.	5	60
Pomorski zakonik, pročišćeni tekst.	Unlimited – Official Gazette	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies University of Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Đani Šabalja, PhD, David Brčić, PhD	
Course	Integrated Navigation Systems	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Elective	
Year of Study	3	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	(30+30+0) (2+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the proposed Course is to introduce the students with terms and handling on new technologies' navigational equipment, which is increasingly taking place on-board vessels. It primarily reflects on mandatory equipment which is replacing the traditional navigational means. Other directly or indirectly related instruments and equipment is also included in the Course.

Also, through the planned Course framework, one of the objectives is the ability of students to develop a desired level of critical thinking, based on knowledge gained through classes, exercises and independent and team work.

The latter especially refers to the merging of traditional and new technologies, raising awareness on potential risks when handling sophisticated technologies, and overreliance.

Another aim is the transfer of knowledge related to individual navigational equipment, instruments which are acting as integrated navigation systems, as well as same systems being part of the integrated bridge.

The transfer of knowledge also implies equipment inter-connection, standardised communication protocols, communication towards the shore and vice-versa.

1.2. Prerequisites for Course Registration

The prerequisite of Course Registration is attendance of the Course Electronic navigation, while the prerequisite for the final exam is that the student have passed the same Course.

1.3. Expected Learning Outcomes

Expected learning outcomes are referring to operational and management level.

a) Operational level – expected outcomes:

After the course attendance and the fulfillment of other Course obligations, it is expected that the students will gain the knowledge and improve the skills and competences in handling with the following equipment (which implies an adequate background):

- Global Positioning System (GPS) and Global Navigation Satellite System (GNSS) in function of Electronic Position Fixing Services/Systems (EPFS); basic and related services;
- Individual navigational equipment, as well as the same equipment integrated in complex systems (gyro-compass, Heading Control System – HCS, Tracking Control System – TCS, Speed and Distance Measuring Equipment – SDME, etc.)
- Radar equipment, with emphasis on new generation radar systems (e.g. Chart Radar)



- Automatic Identification System (AIS); general and specific applications, guidelines, the further development of the system towards communication and data transfer;
- Long Range Identification and Tracking System (LRIT);
- Voyage Data Recorder (VDR);
- Bridge Navigational Watch Alarm System (BNWAS);
- Bridge Alarm Management (BAM);
- Electronic Chart Display and Information System;
- Integrated Navigation Systems (INS);
- Integrated Bridge System (IB).

b) Management level – expected outcomes:

Expected learning outcomes at management / decision-making level:

- Connection of navigation equipment as a part of the integration;
- Data flows, reception and data processing and related terms (e.g. Consistent Common Reference System – CCRS, Consistent Common Reference Point – CCRP, etc.)
- Features of e-Navigation;
- Development of critical thinking based on previously described operational level (as a prerequisite), together with investigation of maritime accidents, near-misses and other relevant case studies.
- Development of the individual, independent work based on accidents' investigation, elaboration and analyses.
- The use of all described equipment towards situational awareness and decision-making in various navigational situations (based on exercises and related other student's obligations)

1.4. Course Outline

Introduction to the Course. Application and relevance of the regulations and standards from relevant Organizations (International Maritime Organization – IMO, International Hydrographic Organization – IHO, International Electrotechnical Committee – IEC). Basis of vector graphics. Geographical Information System. Horizontal and vertical reference systems. Information and operational features of integrated systems. Standardized presentation of navigation-related information. Electronic Chart Display and Information System. Features and components of ECDIS. ECDIS in the function of integrated navigation systems. Standardized communication protocols. Integrated Navigation Systems (INS). Features and components of the INS. Integrated Bridge (IB). IB hardware. Navigational and related programming tools, applications and software. Development of the new integrated navigational and non-navigational systems. Features of e-Navigation. User Interface of the Officer of the navigational Watch (OOW HMI).

1.5. Modes of Instruction

- X Lectures
- X Seminars and workshops
- X Exercises
- X Field work

X Independent tasks X

Multimedia and Network

Laboratory

X Mentorship

X Other: Practical work in the navigational simulator/laboratory

1.6. Comments

“Students are at the center of the learning process and are co-responsible for the success of the educational process.” - Strategy of the University of Rijeka 2014/2020.

1.7. Student Obligations

Practical and theoretical exams, homework, seminars/presentations, continuous knowledge evaluation



1.8. Assessment¹ of Learning Outcomes

Course attendance	2	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam	0,5	Essay		Research	
Project		Continuous Assessment 2 written colloquiums	0,5	Presentation		Practical work	0,5
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The procedure for evaluating the acquired learning outcomes takes place according to the Rulebook on Studies of the University of Rijeka and the Rulebook on Studying at the Faculty of Maritime Studies in Rijeka as follows: 70% in classes and 30% in the final oral exam.

1.10. Main Reading

Teaching material for e-course *Integrated Navigation Systems* available on the *Merlin* learning interface.
 International Maritime Organization. 2010. Performance Standards for Shipborne Radio-communications and Navigational equipment. IMO, London, UK.
 International Hydrographic Organization. 2016. Current IHO ECDIS and ENC Standards. IHO, Monaco.
 Norris, A. 2008. *Integrated Bridge Systems Vol. 1: Radar and AIS*. The Nautical Institute, London, UK.
 Norris, A. 2010. *Integrated Bridge Systems Vol. 2: ECDIS and positioning*. The Nautical Institute, London, UK.
 ECDIS Ltd. 2015. *The ECDIS Manual*. ECDIS Limited. Fareham, UK.

1.11. Recommended Reading

Brčić, D. & Žuškin, S. (2018). Towards paperless vessels: A Master's perspective. *Pomorski zbornik - Journal of Maritime & Transportation Sciences*, ISSN: 0554-6397, 55 (1), pp. 183-199.
 Brčić, D., Kos, S. & Žuškin, S. (2015). Navigation with ECDIS: Choosing the proper secondary positioning source. *TransNav: International Journal on Marine Navigation and Safety of Sea Transportation*, ISSN: 2083-6473, 9 (3), pp. 317-326.
 Brčić, D., Kos, S. & Žuškin, S. (2016). Partial structural analysis of the ECDIS EHO research: The handling part. *Proceedings of the 24th International Symposium on Electronics in Transport (ISEP)*, ISBN: 978-961-6187-56-5, 8 p. Electrotechnical Association of Slovenia & ITS Slovenia, Ljubljana, Slovenia, 29-30 March 2016.
 Brčić, D., Žuškin, S. & Barić M. (2017). Observations on ECDIS education and training. *Proceedings of 12th International Conference on Marine Navigation and Safety of Sea Transportation*, ISBN: 978-1-138-29762-3, str. 29-36. London: CRC Press, Taylor & Francis Group. Gdynia, Poljska, 21-23 June 2017.
 Brčić, D., Žuškin, S., Valčić, S. & Frančić, V. (2018). Implementation of the ECDIS system: An OOW perspective as an integral part of educational improvement. *Proceedings of 19th IAMU AGA Conference*, ISBN: 978-84-947311-7-4, pp. 121-128. Universitat Politècnica de Catalunya (UPC)/ International Center for Numerical Methods in Engineering (CIMNE), Barcelona, Spain, 17-19 October 2018.
 Brčić, D., Žuškin, S., Valčić, S. & Rudan, I. (2019). ECDIS transitional period completion: Analyses, observations and findings. *WMU Journal of Maritime Affairs*, ISSN: 1651-436X, 18(2), pp. 359-377.
 Car, M., Vujičić, S., Žuškin, S. & Brčić, D. (2019). Human Machine Interface: Interaction of OOWs with the ECDIS system. In: Koboević, Ž. (ed.). *Proceedings of the 1st International Conference of Maritime Science & Technology – Naše More 2019*, ISBN 978-953-7153-52-6, pp. 74-85. Dubrovnik: Sveučilište u Dubrovniku, Pomorski odjel. Dubrovnik, Croatia, 17-18 October 2019.
 Šakan, D., Žuškin, S., Brčić, D., Valčić, S. (2019). Analysis of Primary Position Validation in ECDIS system. U: Weintrit, A & Neumann, T. (eds.). *Advances in Marine Navigation and Safety of Sea Transportation: Proceedings of 13th International Conference on Marine Navigation and Safety of Sea Transportation*, ISBN: 978-0-367-35760-3, pp. 5-15. Leiden: CRC Press, Taylor & Francis Group. Gdynia, Poland, 12-14 June 2019.
 Žuškin, S., Brčić, D. & Kos, S. (2016). Partial structural analysis of the ECDIS EHO research: The safety

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



contour. *Proceedings of 7th International Conference on Maritime Transport*, ISBN: 978-84-9880-591-8, pp. 246-262. Universitat Politecnica de Catalunya, Barcelona. Barcelona, Spain, 27-29 June 2016.

Žuškin, S., Brčić, D. & Šabalja, Đ. (2013). A contribution to improving the standards of ECDIS training. *Pomorstvo: Scientific journal of maritime research*, ISSN: 1332-0718, 27 (1), pp. 131-148.

Žuškin, S., Brčić, D. & Valčić, S. (2017). ECDIS possibilities for Ballast Water Exchange adoption. *TransNav - International Journal on Marine Navigation and Safety of Sea Transportation*, ISSN: 2083-6473, 11(3), pp. 477-482.

Weintrit, A. 2009. *The Electronic Chart Display and Information System (ECDIS) – An Operational Handbook*. Taylor & Francis, Abingdon.

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
All materials	Online	

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Sandra Tominac Coslovich, PhD, Associate professor	
Course	Maritime English 5	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Elective	
Year of Study	2rd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours(L+E+S)	15+30+0 (1+2+0)

1.GENERAL COURSE DESCRIPTION

1.1.Course Objectives

Course objectives meet the requirements of the enrichment level of the IMO STCW Convention 1995 and the requirements for obtaining a B.Sc. degree in Maritime Transport – Nautical Science and Safety of Navigation

- Maritime English education and training of students for shore-based jobs and duties on the managerial level
- Acquiring specialized linguistic knowledge and English language skills required for education and training for the management level of certification under the provisions of the IMO STCW Convention 1995
- Furthermore, the goal is to develop the level of knowledge of maritime and general English language, as well as to master the linguistic knowledge and skills to enable students to learn, gain knowledge and follow the technological advances in the global maritime industry and further develop the four language skills: reading, listening, writing and speaking

1.2.Prerequisites for Course Registration

Passing the course Maritime English 4.

1.3.Expected Learning Outcomes

After taking the course, the students will be able to:

1. Distinguish, define and apply different terms from the field of shipping industry - shipping economics, port economics, shipping agency and maritime property law and compare them in English and Croatian
2. Interpret and communicate information in spoken and written form from the field of shipping industry - shipping economics, port economics, shipping agency and maritime property law and compare them in English and Croatian
3. To express themselves in speech and in writing and discuss specialist topics in English
4. To translate specialized texts from English into Croatian and vice versa
5. To use language skills in written and verbal communication in English among different specialists in the field of maritime transport



1.4. Course Outline

The course is based on the *communicative approach* to learning and teaching English as a Foreign Language and English as a Second Language. It is also focused on *content-based Learning* and *student-centered approach*. The course focuses on the acquisition and practical use of: vocabulary/terminology skills (terms, polysemous words, multiple-word lexical units, collocations, lexical sets), discourse and pragmatic elements of shipping-related texts and communication, most frequent and typical grammatical structures and features restricted to maritime discourse (written and spoken) regarding the following topics: the structure of shipping – ship's interest, cargo interest, ancillary services, shipping procedure and documents, Bill of lading – types, functions, samples, receiving and delivering cargo, charter parties, contracts of affreightment, notice of readiness, cargo damage, cargo claims, note of protest, sea protest, maritime correspondence

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Class attendance, activities, continuous assessment and final exam

1.8. Assessment¹ of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio		Final exam					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

- 2 continuous written assessments/tests + final oral exam
2. Explain the terms 'shipper' and 'carrier' and provide the Croatian equivalents
 1. Describe the shipping procedure
 3. Enumerate and explain the different types and functions of the Bill of lading
 4. Translate the text on Voyage charter parties from English into Croatian using the appropriate terminology
 5. Write a Note of protest against the negligent work of stevedores

1.10. Main Reading

- Pritchard, B. (1994) *Ship's Business in English*. Pomorski fakultet, Rijeka, selected units on Merlin (moodle.srce.hr)
- L. Jones & R. Alexander (2000) *New International Business English*. Cambridge Univeristy Press
- Teaching materials on e-learning platform Merlin (moodle.srce.hr)

1.11. Recommended Reading

- *MarEng & MarEng+*, Web-based Maritime English Learning Tool, EU Leonardo Project, http://mkkdok.utu.fi/mat/marengplus_learning_tool/index.html
- Kluijven, P. van (2003) *International Maritime English Programme*. Alk & Heijnen, Alkmaar
- Luzer-Spinčić (2002) *Gramatička vježbenica za pomorce*, Pomorski fakultet, Rijeka

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Pritchard, B. (1994) <i>Ship's Business in English</i> . Pomorski fakultet, Rijeka, selected units	Available online Merlin (moodle.srce.hr)	40
L. Jones & R. Alexander (2000) <i>New International Business English</i> . Cambridge Univeristy Press	10	40
Teaching materials on e-learning platform Merlin (moodle.srce.hr)	Available online Merlin (moodle.srce.hr)	40

1.13. Quality Assurance

The quality of the course is monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the course are analyzed and a survey is conducted among the students once per semester.



3.2. Course description

Generic information		
Head of Course	Full Professor Tanja Poletan Jugović, Ph.D.	
Course	Trade routes	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate/Bachelor	
Type of Course	Elective	
Year of Study	3	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+15+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The main objectives of the course are to acquire knowledge of the basic elements, principles and geo-transport, socio-economic and logistical factors for formation and distribution of the trade routes; analysis of relevant indicators for the formation of trade routes in the world, with an emphasis on the maritime and the land transport, and gaining knowledge of the basic assumptions for attracting the trade routes and valorizing traffic routes in the transport services market.

1.2. Prerequisites for Course Registration

-

1.3. Expected Learning Outcomes

After passing the exam, students will be able to do the following:

1. Properly define basic elements, legality and particularities for the formation of the trade routes.
2. Differentiate types of the trade routes according to different criteria.
3. Describe and interpret the geo-traffic, socio-economic and other logistical factors for the scheduling and consolidation of the trade routes.
4. Explain the general and specific characteristics of the state of development of contemporary traffic at world, regional and national level.
5. To substantiate the significance of the components for the valorisation and competitiveness of the transport routes (corridors) in the transport services market.
6. Analyze and interpret the intensity, dynamics and directions (international, national) of the trade routes with an emphasis on the maritime routes and the corridors as well as the other types of the transport routes (land, river and air corridors).
7. Compare the intensity, dynamics and structure of the trade routes according to the transport modes, types of goods and directions of movement (at world, regional and national levels).
8. Analyze and demonstrate the conditionality for the formation of the trade routes on major maritime routes, land corridors and reference terminals (port, land....)



1.4. Course Outline

Relevant theoretical elements and determinants of the formation and distribution of trade routes. Geo-transport factors for the formation and distribution of the trade routes. Socio-economic factors for the formation and distribution of the trade routes. Other assumptions and criteria for the formation and distribution of the trade routes. The state and general characteristics of the trade routes in the world. International trade routes in the maritime transport. International trade routes in the land transport. International trade routes in the inland waterways transport. International trade routes in the air transport.

1.5. Modes of Instruction

- | | |
|---|--|
| <input checked="" type="checkbox"/> Lectures | <input checked="" type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Seminar paper, seminar presentation, 1st colloquium, 2nd colloquium, the final exam.

1.8. Assessment¹ of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper	1	Experiment	
Written exam	1	Oral exam		Essay		Research	
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The procedure for evaluation of the acquired learning outcomes is carried out according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

- 70% of the acquired learning outcomes within the 1st colloquium (25%), the 2nd colloquium (25%) and through the presentation of a research assignment - seminars (20%) are evaluated through continuous assessment during the class; the student must achieve at least 50% of points in each colloquium, and the presentation of the research assignment is evaluated on the basis of elaborated evaluation criteria;
- at the final exam 30% of the obtained learning outcomes are evaluated whereby the student must pass at least 50% of the points for passing the final exam.

Examples of evaluating learning outcomes in relation to the learning outcomes are:

1. Define the basic elements of the formation of maritime trade routes.
2. Classify the trade routes according to the criterion of territorial coverage and orientation of the trade routes.
3. State the geo-traffic factors for the formation of the trade routes and argue for their relative or absolute significance.
4. List the leading maritime regions and associated major ports in the context of worldwide container cargo flows.

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



5. List and explain the economic and qualitative criteria (sub-criteria) in examining the competitiveness of the intermodal transport route.
6. Define and display the most significant maritime routes of the liquid cargo flows in the world.
7. Explain the intensity, structure and dynamics of the trade routes, using the example of a selected seaport.
8. Formulate and systematize commodity affirmation factors using the example of the Pan-European Corridor V - Branch Vb.

1.10. Main Reading

- Tanja Poletan Jugović, „Robni tokovi“, Pomorski fakultet, Sveučilište u Rijeci, 2014.
- Course materials available at e-learning platform Merlin (<https://moodle.srce.hr>)

1.11. Recommended Reading

- Jean-Paul Rodrigue „The Geography of Transport Systems“, Fourth Edition, (2017), New York, selected chapters; <https://transportgeography.org/>
- Statistic sources with recent statistical data (available at web): Statistical Yearbook of the Republic of Croatia, Croatian Bureau of Statistics, CRO, Zagreb etc.

1.12. Number of Main Reading Examples

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Tanja Poletan Jugović, „Robni tokovi“, Pomorski fakultet, Sveučilište u Rijeci, 2014.	5	55
Course materials available at e-learning platform Merlin (https://moodle.srce.hr)	+	55

1.13. Quality Assurance

The quality of study is constantly monitored in accordance with the ISO 9001 standard implemented at the Faculty of Maritime Studies in Rijeka. An analysis of the exams is made annually, and a student survey is conducted once a semester.



3.2. Course description

Generic information		
Head of Course	Robert Mohović, PhD, Full professor, Đani Mohović, PhD, Associate professor	
Course	Ship handling	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	45+30+0 (3+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to familiarize students with the factors that influence ship maneuvering, ship maneuvering characteristics, maneuvering with different types of ships in all conditions, including extraordinary circumstances, safety measures during maneuvering and during the stay of the ship at the berth. A detailed introduction and analysis of the International Rules on avoidance of collisions at sea. Practical work on drills and navigation practice requires students to acquire skills in accordance with the STCW Convention. Also, the course provides a scientific basis for a more detailed study of this field.

1.2. Prerequisites for Course Registration

Ship design and construction 1 - attended lectures

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

- 1. analyse and properly interpret the International Regulations for Preventing Collisions at Sea,*
- 2. describe and define the factors that influence ship maneuvering,*
- 3. analyze and correctly interpret the ship's maneuverability,*
- 4. correctly interpret the principles of maneuvering for different types of ships in all conditions, including extraordinary circumstances,*
- 5. analyze and correctly interpret safety measures during maneuvering and during the stay of the ship at the berth,*
- 6. be able to operate the ship in navigation simulators and navigation practice,*
- 7. apply skills in the field of ship maneuvering in accordance with the requirements of the STCW 1978 Convention.*

1.4. Course Outline

Introduction, concept and division of ship handling. Analysis of International Rules for the Prevention of Collisions at Sea. Influence of geometric and structural features on the maneuverability of a ship. Rudder and rudder action. Ships propulsion. External factors - influence on ship maneuvering. Interaction. Types of maneuvers and safety during ship maneuvering. Types and technical and technological characteristics of tugboats - influence on ship maneuvering. Ship maneuvering with and without tugboats in all conditions. Safety during the stay of the ship at the berth. Special cases of maneuvering. Emergency maneuvering.



<p>1.5. Modes of Instruction</p>	<input type="checkbox"/> Lectures X <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises X <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
<p>1.6. Comments</p>	<p>Part of the exercises related to the International Rules for the Prevention of Collisions at Sea are related to the "case study" and contain an analysis of events and conclusions in accordance with the Rules. The second part of the exercises refers to the practical work of students on specialized simulators of navigation and ship maneuvering.</p>						
<p>1.7. Student Obligations</p>							
<p>Active attendance of classes and at least 70% of completed classes for admission to the exam. Passed midterm colloquiums and successful demonstration of ship handling techniques using ship's simulator.</p>							
<p>1.8. Assessment¹ of Learning Outcomes</p>							
<p>Course attendanc</p>	<p>2.5</p>	<p>Class participation</p>		<p>Seminar paper</p>		<p>Experiment</p>	
<p>Written exam</p>		<p>Oral exam</p>		<p>Essay</p>		<p>Research</p>	
<p>Project</p>		<p>Continuous Assessment</p>	<p>1</p>	<p>Presentation</p>		<p>Practical work</p>	
<p>Portfolio</p>		<p>Final exam</p>	<p>1.5</p>				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final oral exam (according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka) Continuous assessment:

-2 colloquiums in the field of International rules on collision avoidance at sea - minimum 80% of correct answers required

-2 colloquiums in the field of ship handling technique (ship maneuvering) - theoretical part - must be accomplished a minimum of 60% correct answers.

-Exercises in the navigation simulator where it is necessary to show the ship's handling skills - should be shown minimally 80% of the required skills.

Final exam:

Final exam (oral exam) checks the completeness of theoretical knowledge in the field of course Ship handling, it is necessary to achieve a minimum of 50% of the required theoretical knowledge.

1.10. Main Reading

1. R. Mohović, Ship handling, lectures on the web pages of the Faculty of Maritime Studies in Rijeka, Faculty of Maritime Studies, University of Rijeka, 2011.

2. R.W. Rowe, The Shiphandler's Guide, The Nautical Institute, London, 2000.

3. Sijekavica, I., Kačić, H., Pravila za izbjegavanje sudara na moru, Školska knjiga Zagreb

1.11. Recommended Reading

1. H. Hensen, Tug Use in Port, A practical guide, The Nautical Institute, London, 1997.

2. Mooring Equipment Guidelines, Oil Companies International Marine Forum, Witherby & Co. Ltd., London, 1997.

3. D.H. MacElrevey, Shiphandling for the Mariner, Cornell Maritime Press, Ins. Centerville, 1998.

4. Pilotage and Shiphandling, The Nautical Institute, London, 1990.

5. A.Vučinić, Hidrodinamika plovnih objekata (Otpor i propulzija), Tehnički fakultet Sveučilišta u Rijeci, Rijeka, 1997.

6. R. Ratko, Manevriranje brodom, Profil International d.o.o., Zagreb, 2001.

7. Vademecum Maritimus, Podsjetnik pomorcima, Pomorski fakultet u Rijeci, Rijeka, 2002.

8. Pomorska enciklopedija, Leksikografski zavod Hrvatske, Zagreb

9. P.R. Williamson, Ship Manoeuvring Principles and Pilotage, Witherby & Co. Ltd., London, 2001.

10. K.J. Rawson, E.C. Tupper, Basic Ship Theory, Longman Scientific & Technical, Essex, 1984

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Ship handling technique, lectures on web pages	unlimited	
The Shiphandler's Guide	available on web pages	
International Regulations for Preventing Collisions at Sea		

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Full professor Tanja Poletan Jugović, Ph.D	
Course	International forwarding	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate/Bachelor	
Type of Course	Elective	
Year of Study	3	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+15+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Acquiring knowledge about the contributions and importance of the forwarding logistics in the transport and international trade systems. Legal determination of the system of the international forwarding. Knowledge of the international forwarder job structures, activities and tasks in the (international) physical and documentation flows of goods (cargo). Defining and simulating the tasks and activities of the forwarder and documentation and forms in the organization and providing of the import, export or transit job. Knowledge, interpretation and use of the Incoterms terms. Knowledge and monitoring of modern trends and choice in the business of international forwarders as logistics

1.2. Prerequisites for Course Registration

-

1.3. Expected Learning Outcomes

After passing the exam, students will be able to do the following:

1. Define the relevant terms, characteristics and role of the forwarding in the modern traffic environment.
2. Define and interpret the role and importance of the forwarding logistics in the international trade system and the transport system.
3. Distinguish between legal sources, contracts, documents and documents governing the rights, obligations and responsibilities of the forwarder and other stakeholders in the international trade business.
4. Know and distinguish the basic tasks, activities and role of the international forwarder in the planning, organization and implementation of the import, export or transit business.
5. Know the specific operations and activities of the forwarder in the provision of complete logistics services that impose cargo specifics, customer and market requirements.
6. Distinguish the forms, transport documents and other documents within the import, export or transit business.
7. Know, interpret and use communication specifics of foreign trade entities using the Incoterms term.
8. Explain current trends, challenges and strategies in the development and affirmation of an international forwarder as a logistics operator.



1.4. Course Outline

The concept and relevant characteristics of the forwarders and forwarding (affirmation and development of the forwarding and logistics operators (3PL, 4PL ...) in the modern transport environment. Importance of the forwarding logistics in the transport system and in the international trading system. International forwarding as a system (characteristics, organizations for international forwarding, national and international forwarding associations). Legal regulation of the forwarding (legal framework, rights and obligations of the freight forwarders). Basic and special jobs, activities and tasks of the international freight forwarder. Incoterms terms. Modern trends and challenges in the business of international freight forwarders as logistics operators (global trends in logistics market, modern strategies of logistics operator, ...).

1.5. Modes of Instruction

- | | |
|---|--|
| <input checked="" type="checkbox"/> Lectures | <input checked="" type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Seminar work presentation, 1st colloquium, 2nd colloquium, final exam

1.8. Assessment¹ of Learning Outcomes

Course attendanc	1,5	Class participation		Seminar paper	0,5	Experiment	
Written exam	0,5	Oral exam		Essay		Research	
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The procedure for evaluation of the acquired learning outcomes is carried out according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

- 70% of the acquired learning outcomes within the 1st colloquium (25%), the 2nd colloquium (25%) and through the presentation of a research assignment - seminars (20%) are evaluated through continuous assessment during the class; the student must achieve at least 50% of points in each colloquium, and the presentation of the research assignment is evaluated on the basis of elaborated evaluation criteria;
- at the final exam 30% of the obtained learning outcomes are evaluated whereby the student must pass at least 50% of the points for passing the final exam.

Examples of evaluating learning outcomes in relation to set learning outcomes are:

1. Define and explain the terms: forwarder, forwarding, logistics operator, 3PL, 4PL., ...
2. Explain the role and importance of forwarding logistics in international trade business.
3. List the basic legal sources governing the forwarding business and interpret the rights, obligations and responsibilities of the forwarder.
4. List and explain the basic tasks of the forwarder: Instruction, delivery of goods, conclusion of contracts and transportation, conclusion of transport insurance contracts, (...) and interpret the legal status and role of the forwarder within them.

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



5. Give and explain an example of a specific forwarder's business conditioned by a specific cargo / goods (...) and interpret the legal status, role of the shipper, and specific documents and documents within them.
6. Explain the purpose, function and information contained in the document - forms (... bill of lading / consignment note / customs declaration ...)
7. Explain the role of the Incoterms term and interpret the obligations of the seller and buyer in the example of concrete parity (EXW, CIF, FOB, ...).
8. Explain and describe the impact and effects of contemporary trends and phenomena on the logistics services market (globalization, computerization,...) on the development and affirmation of the logistics operators.

1.10. *Main Reading*

- Course materials available at e-learning platform - Merlin (<https://moodle.srce.hr>)
- Zelenika, R., Temelji logističke špedicije, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2005.

1.11. *Recommended Reading*

- Andrijanić, I., Aržek, Z., Prebežac, D., Zelenika, R., Transportno i špeditersko poslovanje, Zagreb, 2001.
- Incoterms 2010, Pravila tumačenja trgovinskih termina Međunarodne trgovinske komore, HGK, 2010
- Zelenika, R. Incoterms 2000 u teoriji i praksi – 100 savjeta i 100 primjera , Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2002.
- Zelenika, R., Međunarodna špedicija, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2000.
- Zelenika, R., Logistički sustavi, Ekonomski fakultet u Rijeci, Rijeka, 2005.

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Course materials available at e-learning platform - Merlin (https://moodle.srce.hr)	+	55
Zelenika, R., Temelji logističke špedicije, Ekonomski fakultet Sveučilišta u Rijeci, Rijeka, 2005.	5	55

1.13. *Quality Assurance*

The quality of study is constantly monitored in accordance with the ISO 9001 standard implemented at the Faculty of Maritime Studies in Rijeka. An analysis of the exams is made annually, and a student survey is conducted once a semester.



3.2. Course description

Generic information		
Head of Course	Renato Ivče, PhD, Full professor	
Course	Ship maintenance	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	3
	Number of Hours (L+E+S)	30+15+0 (2+1+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the importance of ship maintenance system, methods of maintenance, direct and indirect costs of maintenance. Introduce students to corrosion processes, effects on ship's structure, need for corrosion protection and methods of corrosion protection. Especially, indicates to the importance of maintaining handling and deck equipment, and other parts of vessel which have significant impact on its safety.

1.2. Prerequisites for Course Registration

Passed Ship design and construction 1 exam

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

- 1. recognize the importance of maintaining ship system*
- 2. use and explain the specifics of particular maintenance methods*
- 3. define maintenance costs*
- 4. determine the effects of corrosion*
- 5. know the division of corrosion and determine the characteristics*
- 6. define the corrosion forms of individual technical metals*
- 7. determine corrosion protection*
- 8. apply cathodic and anodic corrosion protection*
- 9. maintain handling equipment*
- 10. maintain deck equipment and systems*

1.4. Course Outline

Introductory considerations. Importance of ship maintenance system. Methods of maintenance. Maintenance costs. Material degradation. Corrosion of metals and forms of corrosion. Corrosion properties of individual technical materials. Corrosion protection. Cathodic and anodic protection. Protection of the underwater part of the hull with anti-fouling coatings. Maintenance of handling equipment. Maintenance of significant deck appliances and systems.



1.5. Modes of Instruction		<input type="checkbox"/> Lectures X <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises X <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____				
1.6. Comments							
1.7. Student Obligations							
Active attendance of classes and at least 70% of completed classes for admission to the exam. Successful passing colloquiums and the final oral exam							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	0,4	Presentation		Practical work	
Portfolio		Final exam	1,1				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam is carried out in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

Through continuous assessment during the course, 70% of the acquired learning outcomes are evaluated through 1st colloquium - learning outcomes 1-3 (0.55 ECTS (35%)), 2nd colloquium - learning outcomes 3-5 (0,55 ECTS (35 %)), whereby the student must achieve a minimum of 52% of points in each exam, at the final part of the exam it is evaluated (0,4 ECTS (30%))) acquired learning outcomes (1-5) whereby a student must pass a minimum of 52% of points for passing the final exam.

Examples of evaluation of a particular learning outcome during class and at the final exam

1. Explain the importance of ship's maintenance
2. Define effect of corrosion
3. Explain pitting corrosion
4. Define cathodic protection
- 5. Explain kinetic of sefpolishing coatings**

1.10. Main Reading

1. Zorović, D. *Zaštita materijala*, Fakultet za pomorstvo i saobraćaj, Rijeka, 1991.
2. Zorović D. Renato Ivče, Mohović R., Mohović Đ., *Održavanje broda – Zaštita materijala*, Rijeka 2008.
3. Lovrić: *Osnove brodske terotehnologije*, Pomorski fakultet, Dubrovnik, 1989;

1.11. Recommended Reading

1. Kenneth A., *MARINE AND OFFSHORE CORROSION*, Butterworth, 1985.
2. Caridis P., *INSPECTION, REPAIR AND MAINTENANCE OF SHIP STRUCTURE*, Witherby Co, London 2001
3. Dugi Z. i Esib I., *TEHNOLOGIJA ZAŠTITE OD KOROZIJE*, Školska knjiga, Zagreb, 2003.
4. Francis L. La Que, *MARINE CORROSION*, Copyright by John Wiley & Sons, 1975.
5. Hrvatski registar brodova, *PRAVILA ZA TEHNIČKI NADZOR BRODOVA*, Dio 24, Split, 2000.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
<i>Zaštita materijala</i>	9	
<i>Održavanje broda – Zaštita materijala</i>	10	
<i>Osnove brodske tehnologije</i>	3	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted



3.2. Course description

Generic information		
Head of Course	Biserka Rukavina PhD	
Course	Shipping agencies	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Elective	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	2+ 0 + 0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

Acquiring knowledge of the basic characteristics of maritime agents. Understanding of the historical development of the genesis of maritime agencies and the purpose of their establishment. Knowledge of the structure of the functions of maritime agents and identification of the role and significance of maritime agents in the transport process. Affiliation this content with related courses in order to achieve and implement a multidisciplinary approach.

1.2. Prerequisites for Course Registration

/

1.3. Expected Learning Outcomes

1. Distinguish and compare the international and national legal sources governing the organization and activities of maritime agencies and explain the role of international and national professional associations.
2. Highlight and justify certain types of the maritime agent (port agent, shipbroker, special operations).
3. Describe and justify ship arrival and departure procedures.
4. Explain and identify the essential elements of the maritime agency contract and analyze and compare individual types of contracts.
5. Analyze, compare and demonstrate the specifics of the operations of maritime agents on the example of concrete maritime agencies.

1.4. Course Outline

The term and types of maritime agents. International and national legal sources governing the organization and activities of maritime agencies. Organization of maritime agencies. Port agent activities. Shipbroker activities. Disbursement account. Maritime Agency Contract – parties, subject matter of the contract, duration and termination of the contract. Analysis of individual type contracts (Agency Appointment Agreement, General Agency Agreement). The rights, obligations and liability of the maritime agent.



1.5. Modes of Instruction		<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input checked="" type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Presentation			
1.6. Comments							
1.7. Student Obligations							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1	Class participation	0,5	Seminar paper		Experiment	
Written exam	1	Oral exam		Essay		Research	
Project		Continuous Assessment	1,5	Presentation		Practical work	
Portfolio							

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70 % in class and 30% on the final exam (according to the Ordinance on Studies of the University of Rijeka and the Ordinance on Studies of the Faculty of Maritime Studies in Rijeka).

Continuous knowledge assessment:

2 colloquiums (30 points each).

Practical work (10 points).

Final exam.

The final exam (written exam) checks the integrity of knowledge about maritime agencies and a minimum of 50% correct answers (15 points out of total 30 points) must be obtained.

1. Explain the legal status of the maritime agent in the Croatian legal system.
2. Provide two examples of shipbroker functions.
3. Describe one document to be provided by the ship/master/agent in international navigation in the document Notice of Arrival and explain the purpose of obtaining it.
4. Explain the possible consequences of the agent's conduct contrary to the principal's order.
5. Describe the procedure for establishing a maritime agency in the Republic of Croatia in accordance with national regulations.

1.10. Main Reading

Teaching material is available in the e-learning system.

1.11. Recommended Reading

1. Borčić, Vojslav, Ugovor o pomorskoj agenciji, Komentar Pomorskog zakonika, Udruga pomorskih agenata Hrvatske, Rijeka, 1999.
2. Pomorski zakonik (pročišćeni tekst) - Ugovor o pomorskoj agenciji čl. 674. – 683.
3. Opći uvjeti poslovanja pomorskih agenata, 2009.; Udruga pomorskih agenata Hrvatske.

1.12. Number of Main Reading Examples

Title

Number of examples

Number of students



Teaching material is available in the e-learning system.		40
<i>1.13. Quality Assurance</i>		
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies University of Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted.		



3.2. Course description

Generic information		
Head of Course	Doc. dr. sc. Zoran Mrak	
Course	Maritime radiocommunications	
Study Programme	Marine Electronic Engineering and Information Technology	
Level	Undergraduate	
Type of Course	Compulsory	
Year of Study	3	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 45 + 0 (2 + 3 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objectives of this unit are to gain knowledge of the GMDSS system required to properly handle communications devices on board, and to prepare students for the title of General Operator (GOC). The course syllabus is based on the STCW Convention and "IMO Model Course 1.25", with the addition of a necessary part in which the required backgrounds in electronic communications are addressed.

1.2. Prerequisites for Course Registration

1.3. Expected Learning Outcomes

It is expected that students, after regulating the anticipated obligations from this course, will be able to:

1. Describe the modes of propagation of electromagnetic waves as a function of frequency bands
2. Describe the basic elements of radio communication systems (receiver, modulation transmitter, antennas, transmission lines)
3. Indicate the role of individual maritime communications institutions
4. Define and describe the individual elements of the GMDSS system
5. Describe individual communication equipment
6. Indicate the purpose of each communication equipment
7. Handle all ship communication equipment in the GMDSS system
8. Use the devices in the proper manner for the purpose of proper communication
9. Use the supporting literature of the ship's radio station and keep documentation properly.

1.4. Course Outline

Development of maritime communications; The role of individual institutions; Introduction to radiocommunication systems; Information; Analog and digital systems; Electromagnetic waves, modulations, antennas, transceiver ...; GMDSS system; Communication functions; Areas of navigation; MSI Transmission Systems; Marine Communication Equipment (DSC system; VHF radiotelephone transceiver; MF / HF radiotelephone device; NAVTEX system and receiver; INMARSAT devices; SART and AIS SART device; EPIRB devices); Procedures in radio communications (routine communications, communications in the event of danger, emergency and safety ...); Use of compulsory marine literature and radio logging.



1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input checked="" type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
1.6. Comments	The lectures and exercises are fully compliant with the STCW Convention and "IMO Model Course 1.25". The exercises take place in a specialized simulator for GMDSS communication devices.						
1.7. Student Obligations							
Active attendance and at least 70% of course attendance; 2 written and one oral colloquium; final written exam.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam	2	Oral exam	1	Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio							

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The total number of credits consists of 10% attendance and activity in teaching, 60% achieved through continuous examination and 30% in the final exam.

Continuous assessment:

- 1st colloquium, written test 20 questions, learning outcomes 1-3 (20%)
- 2nd colloquium, written test 20 questions, learning outcomes 4-6 (20%)
- 3rd colloquium, oral-practical simulator work - knowledge of devices, procedures and communication, learning outcomes 4-9 (20%)

Final exam:

- final exam is a 30-question test, learning outcomes 1-9 (30%). The passage requires a minimum of 50% points

Examples of evaluating learning outcomes in relation to set learning outcomes are:

1. Describe the propagation of the electromagnetic waves of the HF region.
2. Describe the SSB modulation technique and indicate what types of communications are used.
3. List the communication functions for the needs of the GMDSS system prescribed by the SOLAS Convention.
4. Describe the role of MRCC in the GMDSS system.
5. Describe the parts of the MF DSC equipment.
6. Specify the purpose of the SART equipment.
7. Distress alerting procedure with the INMRSAT F-77.
8. Demonstrate the process of sending a SAFETY priority message using a VHF equipment.
9. Perform a weekly test of the device and record the test results.



1.10. *Main Reading*

1. Tehnički temelji GMDSS sustava; Josip Sušanj
2. Komunikacijski uređaji i postupci u GMDSS sustavu; Zoran Mrak
3. GMDSS sustav i sigurnost plovidbe; Damir Zec
4. Handbook for marine radio communication; Graham D. Lees, William G. Williamson

1.11. *Recommended Reading*

1. Manual for use by the Maritime Mobile and Maritime Mobile-Satellite Services; ITU
2. GMDSS/GOC Model Training Course 1.25; IMO
3. Standard Marine Communication Phrases; IMO
4. International Code of Signals; IMO

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Teaching materials (Lectures) available on the Merlin e-learning system	unlimited	
Teaching materials (Exercises) available on the Merlin e-learning system	unlimited	
Tehnički temelji GMDSS sustava; Josip Sušanj	faculty library	
Komunikacijski uređaji i postupci u GMDSS sustavu; Zoran Mrak	faculty library	
GMDSS sustav i sigurnost plovidbe; Damir Zec	faculty library	

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for insurance quality that is implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of transience are analyzed and yielded appropriate measures.



3.2. Course description

Generic information		
Head of Course	Đani Mohović, PhD, Associate professor	
Course	Technology of transportation of bulk and special cargoes	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+30+0 (2+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

To acquaint students with the specifics of the technology of transportation of bulk, general and special cargoes by sea. In accordance with the requirements and recommendations of the STCW Convention, students are introduced to the International Regulations, Rules, Recommendations and standards related to the technology of transportation of bulk, general and special cargoes.

The aim is to get acquainted in detail with the structural features and equipment of bulk carriers, general cargo vessels, heavy lift ships and refrigerated cargo ships. Also, students are introduced to the specifics of cargo handling, loading / discharging and transportation of this type of cargo.

1.2. Prerequisites for Course Registration

Passed Cargo Handling 1 and Cargo Handling 2 exam

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. describe and analyze the specifics of the technology of bulk, general and special cargo transportation;
2. analyze and properly interpret international regulations, rules, recommendations and standards related to technology of transportation of these cargoes;
3. describe and analyze the structural specifics of bulk, general and heavy lift ships;
4. describe and analyze the specifics of the technology of transportation of bulk, general and special cargoes by sea;
5. be able to apply the specific principles of loading / discharging and transportation of bulk, general and special cargoes.

Planned learning outcomes should be met for:

- technology and specifics of bulk cargo transportation by sea,
- the technology and specifics of the carriage of general cargo by sea,
- technology and specifics of the transport of dangerous goods by sea (packaged and solid bulk),
- technology and specifics of heavy cargo transportation by sea,
- technology and specifics of transportation of refrigerated cargo by sea.

1.4. Course Outline

Historical development of bulk and special cargo transportation by sea. International regulations, rules, recommendations and standards that relate to the technology of transportation of bulk and special cargoes (general cargo, dangerous cargo (packaged and solid bulk), heavy cargo, refrigerated cargo). Characteristics of bulk, general and heavy lift ships, construction and equipping. The technology of loading / discharging and transportation of mentioned cargoes by sea. Familiarization with ship's documentation related to cargo handling and transportation. Planning and creating stowage plans. Creating cargo loading/discharging plans. Exercises with cargo calculations in the area of bulk and special cargo transportation by sea.



1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
1.6. Comments	<i>In the course of the exercises, students solve various problematic tasks in the field of planning and transportation of bulk and special cargoes by sea, while using all types of ship tables and other documents related to the transport of cargo by sea. In addition, they also use computer programs related to planning, loading / discharging and cargo transportation.</i>						
1.7. Student Obligations							
<i>Active attendance of classes and at least 70% of completed classes. Create a program for cargo calculations where tasks with practical examples of planning and transportation of bulk and special cargo should be solved.</i>							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	1	Presentation		Practical work	
Portfolio		Final exam	2				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final oral exam (according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka)

Continuous assessment:

- Create a program for cargo calculations where tasks with practical examples of planning and transportation of bulk and special cargo should be solved - all tasks from the program need to be solved.

Final exam:

Final exam (oral exam) checks the completeness of theoretical knowledge in the field of course Technology of transportation of bulk and special cargoes, it is necessary to achieve a minimum of 50% of the required theoretical knowledge.

1.10. Main Reading

1. R. Mohović, *Cargo Handling 1, lectures and exercises on the web pages of the Faculty of Maritime Studies in Rijeka, Faculty of Maritime Studies, University of Rijeka, 2011.*
2. D. Vranić, R. Ivčević, *Tereti u pomorskom prijevozu, Pomorski fakultet Rijeka, Rijeka, 2010.*
3. *Vademecum Maritimus, Podsjetnik pomorcima, Pomorski fakultet u Rijeci, Rijeka, 2002.*
4. *Biblioteka pomorskog časnika, sv. 1, sv. 2, sv. 3, sv.*
5. *Krcanje i slaganje tereta, Ivo Buljan, Ognjen Prica Zagreb 1980.*

1.11. Recommended Reading

1. *Thomas Stowage 6 th edition, Brown Son & Ferguson Ltd., London 2012.*
2. *Krcanje i slaganje tereta, Ivo Buljan, Ognjen Prica Zagreb 1980.*
3. *D.J.House, Cargo Work 7 th edition, Butterworth-Heinemann, UK 2005.*
4. *J. Uršić, Stabilitet broda I dio, Sveučilište u Zagrebu, Zagreb, 1962.*
5. *D. R. Derrett, C. B. Barrass, Ship Stability for the Masters and Mates, Butterworth-Heinemann, Oxford, 2011.*
6. *I.C. Clark, The Management of Merchant Ship Stability, Trim and Strength 6 th edition, The Nautical Institute, London, 2006.*
7. *M. Milošević, Nauka o brodu III dio, Pomorska škola Kotor, Kotor, 1961.*
8. *D. Tinsley, Short Sea Bulk Trades, , Fairplay Publications, UK 1984.*
9. *W.D. Ewart, Bulk Carriers, Fairplay Publications, London 1983.*
10. *K.J. Rawson, E.C. Tupper, Basic Ship Theory, Vol.1, Butterworth Heinemann, Boston 2001.*
11. *Bulk Carriers – Guidelines for Surveys, Assessment and Repairs of Hull structure, IACS 2004.*
12. *Pravila za tehnički nadzor pomorskih brodova, Dio 4. - Stabilitet, Hrvatski registar brodova, Split, 2013.*
13. *Pravila za tehnički nadzor pomorskih brodova, Dio 23. – Prijevoz tereta, Hrvatski registar brodova, Split, 2009.*
14. *SOLAS, Consolidated 2009, IMO*
15. *International maritime solid bulk cargoes code (IMSBC Code), IMO, London 2012, with supplements*
16. *IMDG Code, IMO, London 2012.*
17. *Code of Safe Practice for Cargo Stowage and Securing, IMO, 2011 with Amendments*
18. *Code of Safe Practice for Ships Carrying Timber Deck Cargoes, IMO, London 2011.*

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
<i>Cargo Handling 1, lectures and exercises on web pages</i>	<i>unlimited</i>	
<i>Cargoes in maritime transport</i>	10	100
<i>Vademecum Maritimus – A reminder to seafarers</i>	10	
<i>Marine officer's library</i>	10	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analyzed and appropriate measures are adopted.



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3.2. Course description

Generic information		
Head of Course	Igor Rudan, PhD	
Course	Carriage of liquid cargoes by sea	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Elective	
Year of Study	3 st	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	45 + 30 + 0 (3 + 2 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim is to introduce students to the specifics of liquid cargo ships (tankers) and the liquid cargo transportation market. Students are introduced to International Regulations, Recommendations and Standards regarding Tankers. Detailed introduction and analysis of the structural characteristics of liquid cargo ships. Through practical work on the exercises, students need to acquire skills in cargo scheduling, on-boarding and unloading on board ships, and on the specifics of loading / unloading and transporting liquid cargo by sea.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Parse and analyse the structural characteristics of oil tankers, and to explain and know the characteristics of cargo systems used on oil tankers
2. Parse and analyse the structural characteristics of chemical tankers, and explain and know the characteristics of cargo systems used on chemical tankers
3. Parse and analyse the structural properties of liquefied gas vessels, and explain and know the characteristics of cargo systems used on LNG and LPG vessels
4. Analyse and explain cargo plan and break down the planning of loading and unloading of cargo on oil carriers
5. Analyse and explain cargo plan and break down the planning of loading and unloading of cargo on chemical carriers
6. Analyse and explain cargo plan and to analyse the planning of loading and unloading of cargo on LNG and LPG vessels
7. Formulate and propose a loading/unloading procedure and procedures during the transportation of oil by sea
8. Formulate and propose a loading/unloading procedure and procedures during the transport of chemicals by sea
9. Formulate and propose loading/unloading procedure and procedures for the transport of liquefied gases by sea



1.4. Course Outline

Structural properties of oil tankers. Characteristics of cargo systems used on oil tankers. Analyse and explain cargo plan and parse the planning of loading and unloading of cargo on oil tankers. Construction characteristics of chemical tankers. Analyse and explain cargo plan and parse the planning of loading and unloading of cargo on chemical carriers. Characteristics of cargo systems used on chemical tankers. Structural properties of liquefied gas vessels (LNG, LPG, ...). Characteristics of the cargo systems used on liquefied gas vessels. Analyse and explain cargo plan and to parse the planning of loading and unloading of cargo on LNG and LPG vessels. International regulations, recommendations and standards related to tanker ships technology.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input checked="" type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active attendance of classes over 70 %. Longitudinal and transversal ship drawing – student task. Passed two written exams. Final oral exams.

1.8. Assessment¹t of Learning Outcomes

Course attendance	2.5	Class participation	0.25	Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	1.25	Presentation		Practical work	
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70 % of the course grade is based through 2 written exams in class and 30 % of the course grade is based in the oral final exam according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka.

Continuous assessment: Each written exam must have at least 60 % score.

Final oral exam (learning outcomes 1- 7) checks the competences of theoretical knowledge where it is necessary to achieve a minimum of 50 % of the required theoretical knowledge.

1.10. Main Reading

- Rudan, I., teaching materials from the course *Ship design and construction* on the teacher's personal web site (MERLIN) of the Faculty of Maritime Studies in Rijeka
- Sumner, M., Tehnologija prijevoza ukapljenih plinova morem- Merlin (<https://moodle.srce.hr>)
- Videotel - Videotel's training solutions
- Komadina, P., Tankeri, Pomorski fakultet u Rijeci, Rijeka, 1994.

1.11. Recommended Reading

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1. Capt. C. Baptist, Tanker Handbook for Deck Officers, Brown, Soon, & Ferguson, LTD., Glasgow 1993.
2. International Chamber of Shipping, International Safety Guide for Oil Tankers & Terminals, Witherby & Co. LTD., London 2006.
3. Ship/Shore Interface for LPG/Chemical Gas Carriers and Terminals, Sigitto, Witherby Seasmanship, 2019.
4. IMO, Tanker familiarization, IMO Model Course 1.01, Portsmouth 2000
5. Group of authors, Prijevoz kemijskim tankerima, Pomorski fakultet, Rijeka, 1997.
6. Group of authors, Prijevoz ukapljenih plinova morem, Pomorski fakultet, Rijeka, 1992

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Teaching materials from the course Carriage of liquid cargoes by sea	MERLIN – online	
Sumner, M., Tehnologija prijevoza ukapljenih plinova morem	MERLIN – online	
Videotel - Videotel's training solutions	Web - online	
Komadina, P., Tankeri, Pomorski fakultet u Rijeci, Rijeka, 1994.	20	

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Renato Ivče, PhD, Professor	
Course	Container transport technology and ro ro technology	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Optional	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30+30+0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the characteristics of container ships, ro ro-ships, types of containers and ro-ro units, the principles of stowing and securing the considered cargoes and the relevant legal regulations for the considered categories of ships. Students are also introduced to the characteristics of container shipping companies, their associations, the trend of development of considered technologies and terminals

1.2. Prerequisites for Course Registration

Passed Cargo handling II exam

1.3. Expected Learning Outcomes

1. - Define and explain the division and characteristics of container vessels and ro ro ships.
2. - Define container and ro-ro unit types, and apply stowing and securing principles
- 3 - Define and explain the legislation applicable to container and ro-ro vessels
4. - Define, explain and compare the characteristics of container shipping companies, their associations, and, on the basis of their knowledge, predict the trend of development of the considered technologies
5. - Define and compare container terminals.

1.4. Course Outline

Introductory considerations with an overview of the historical evolution of container transportation by sea. Classification and relevant characteristics of container vessels. Rules, recommendations and standards for container transportation. Classification, types and characteristics of containers. Planning of containers stowing on board ship. Principles and procedures for loading, stowing, securing and transporting cargo by container ships. Container Terminals. Development trend and perspective of container technology. the importance of container shipping associations. Historical development of ro-ro unit transport vessels. Features of ro-ro ships and ro-ro units. International regulations concerning the transport of ro-ro units. Planning of ro-ro cargoes stowing on board ship. Principles and procedures for loading and carriage ro-ro cargo by ro-ro ships. Development trend and perspective of ro-ro technology. Final considerations - comparative analysis of container and ro - ro technology



1.5. Modes of Instruction		<input type="checkbox"/> Lectures X <input type="checkbox"/> Seminars and workshops <input type="checkbox"/> Exercises X <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____																
1.6. Comments																			
1.7. Student Obligations																			
Active attendance of classes and at least 70% of completed classes for admission to the exam. Successful passing colloquiums and the final oral exam.																			
1.8. Assessment ¹ of Learning Outcomes																			
Course attendance	2	Class participation	<table border="1"> <tr> <td>Seminar paper</td> <td>0,5</td> <td>Experiment</td> <td></td> </tr> <tr> <td>Written exam</td> <td></td> <td>Oral exam</td> <td></td> </tr> <tr> <td>Project</td> <td></td> <td>Continuous Assessment</td> <td>1,0</td> </tr> <tr> <td>Portfolio</td> <td></td> <td>Final exam</td> <td>1,5</td> </tr> </table>	Seminar paper	0,5	Experiment		Written exam		Oral exam		Project		Continuous Assessment	1,0	Portfolio		Final exam	1,5
Seminar paper	0,5	Experiment																	
Written exam		Oral exam																	
Project		Continuous Assessment	1,0																
Portfolio		Final exam	1,5																
			<table border="1"> <tr> <td>Essay</td> <td></td> <td>Research</td> <td></td> </tr> <tr> <td>Presentation</td> <td></td> <td>Practical work</td> <td></td> </tr> </table>	Essay		Research		Presentation		Practical work									
Essay		Research																	
Presentation		Practical work																	

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam is carried out in accordance with the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka as follows:

Through continuous assessment during the course, 70% of the acquired learning outcomes are evaluated through 1st colloquium - learning outcomes 1-3 (0.75 ECTS (35%)), 2nd colloquium - learning outcomes 3-5 (0.75 ECTS (35 %)), seminar presentation - learning outcomes 1-5 (0.5 ECTS (20%)), whereby the student must achieve a minimum of 52% of points in each exam, at the final part of the exam it is evaluated (1.0 ECTS (30%))) acquired learning outcomes (1-5) whereby a student must pass a minimum of 52% of points for passing the final exam.

Examples of evaluation of a particular learning outcome during class and at the final exam

1. Explain the generational division of container ships.
2. Define the characteristics of bulk containers,
3. Define CSS code requirements.
4. Define a consortium as an association of container shipping companies,
5. Compare container traffic of the world's largest ports

1.10. Main Reading

1. Vranić, D., Kos, S., *Morska kontejnerska transportna tehnologija*
2. Vranić, D., Kos, S., *Morska kontejnerska transportna tehnologija I*
3. D.J.House, *Cargo Work*, Butterworth-Heinemann

1.11. Recommended Reading

1. Kos S., Zenzerović Z. : *Modelling the Transport Process in Marine Container Technology*, *Promet*, Vol. 15, No. 1, Zagreb, 2003.
2. Kos S., Zenzerović Z. : *Model of Optimal Cargo Transport Structure by Full Container Ship on Predefined sailing Route*, *Promet*, Vol. 16, No. 1, Zagreb, 2004.
3. Kos S., Bukša J. : *Komparativna analiza Ro-Ro/Kontejnerski brod Feeder servisa Lošinjske plovidbe*, *Pomorstvo*, God./Vol. 18, Rijeka, 2004.
4. Kos S., Koljatić V. : *Structural elements of container transportation systems*, *Proceedings ISEP 2002*, Ljubljana, 2002.
5. Kos S., Bukša J. : *Feeder service of Lošinjska plovidba – Base of Multimodalism in the Republic of Croatia*, *Proceedings ISEP 2004*, Ljubljana, 2004.
6. Vranić D., Kos S. : *Prijevoz kontejnera morem I*, *nastavni video film u trajanju od 100 minuta*, Pomorski fakultet, Rijeka, 1989.
7. Vranić D., Kos S. : *Prijevoz kontejnera morem II*, *nastavni video film u trajanju od 85 minuta*, Pomorski fakultet, Rijeka, 1990.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Morska kontejnerska transportna tehnologija	7	75
Morska kontejnerska transportna tehnologija I	7	
Cargo Work	unlimited	
Nastavni materijal za e-kolegij dostupan na sustavu za e-učenje - Merlin	75	

1.13. Quality Assurance



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3.2. Course description

Generic information		
Head of Course	Sandra Tominac Coslovich, PhD, Associate professor	
Course	Maritime English 6	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Elective	
Year of Study	3rd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours(L+E+S)	15+30+0 (1+2+0)

1.GENERAL COURSE DESCRIPTION

1.1.Course Objectives

Course objectives meet the requirements of the enrichment level of the IMO STCW Convention 1995 and the requirements for obtaining a B.Sc. degree in Maritime Transport – Nautical Science and Safety of Navigation

- Maritime English education and training of students for shore-based jobs and duties on the managerial level
- Acquiring specialized linguistic knowledge and English language skills required for education and training for the management level of certification under the provisions of the IMO STCW Convention 1995
- Furthermore, the goal is to develop the level of knowledge of maritime and general English language, as well as to master the linguistic knowledge and skills to enable students to learn, gain knowledge and follow the technological advances in the global maritime industry and further develop the four language skills (reading, listening, writing and speaking), presenting skills and ability to engage in business communication in the global maritime industry

1.2.Prerequisites for Course Registration

Passing the course Maritime English 5

1.3.Expected Learning Outcomes

After taking the course, the students will be able to:

1. Distinguish, define and apply different terms from the field of shipping industry - shipping economics and maritime property law and compare them in English and Croatian
2. Interpret and communicate information in spoken and written form from the field of shipping industry - shipping economics and maritime property law and compare it in English and Croatian
3. To express themselves in speech and in writing and discuss specialist topics in English
4. To translate specialized texts from English into Croatian and vice versa
5. To use language skills in written and verbal communication in English among different specialists in the field of maritime transport
6. To deliver a presentation on a relevant topic from the field of shipping industry



1.4. Course Outline

The course is based on the *communicative approach* to learning and teaching English as a Foreign Language and English as a Second Language. It is also focused on *content-based Learning* and *student-centered approach*. The course focuses on the acquisition and practical use of: vocabulary/terminology skills (terms, polysemous words, multiple-word lexical units, collocations, lexical sets), discourse and pragmatic elements of shipping-related texts and communication, most frequent and typical grammatical structures and features restricted to maritime discourse (written and spoken) regarding the following topics: marine insurance – cargo insurance, hull and machinery insurance, P&I insurance, marine accidents, salvage, marine accident reports, general and particular average, employment of seafarers – FOC vessels, ITF, employment contracts, writing CVs, job interviews, ship management

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
	<input checked="" type="checkbox"/> Exercises	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
	<input type="checkbox"/> Field work	<input type="checkbox"/> Other _____

1.6. Comments

1.7. Student Obligations

Class attendance, activities, continuous written assessment, presentation and final oral exam

1.8. Assessment¹ of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	1	Essay		Research	
Project		Continuous Assessment	1	Presentation	0,5	Practical work	
Portfolio		Final exam					

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

1 written assessment/test (50%) + seminar/presentation (20%) + final oral exam (30%)

1. Explain the difference between general and particular average
2. Define the job of an average adjuster
3. Enumerate and explain the types of risks covered by the P&I insurance
4. Translate the text on ship management from English into Croatian by using the appropriate terminology
5. Deliver a presentation on a maritime accident of your choice

1.10. Main Reading

- Pritchard, B. (1994) *Ship's Business in English*. Pomorski fakultet, Rijeka, selected units on Merlin (moodle.srce.hr)
- L. Jones & R. Alexander (2000) *New International Business English*. Cambridge University Press
- Teaching materials on e-learning platform Merlin (moodle.srce.hr)

1.11. Recommended Reading

- *MarEng & MarEng+*, Web-based Maritime English Learning Tool, EU Leonardo Project, http://mkkdok.utu.fi/mat/marengplus_learning_tool/index.html
- Kluijven, P. van (2003) *International Maritime English Programme*. Alk & Heijnen, Alkmaar
- Luzer-Spinčić (2002) *Gramatička vježbenica za pomorce*, Pomorski fakultet, Rijeka

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Pritchard, B. (1994) <i>Ship's Business in English</i> . Pomorski fakultet, Rijeka, selected units	Available online Merlin (moodle.srce.hr)	40
L. Jones & R. Alexander (2000) <i>New International Business English</i> . Cambridge University Press	10	40
Teaching materials on e-learning platform Merlin (moodle.srce.hr)	Available online Merlin (moodle.srce.hr)	40

1.13. Quality Assurance

The quality of the course is monitored in accordance with the ISO 9001 system implemented at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the course are analyzed and a survey is conducted among the students once per semester.



3.2. Course description

Generic information		
Head of Course		
Course	B.Sc. thesis	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	7
	Number of Hours (L+E+S)	(0 + 30 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of this course is to enable the student to apply theoretical and practical knowledge in the independent processing of a given topic (B.Sc. thesis), to correctly apply the methodology and technology of writing it, and to present relevant conclusions and insights.

1.2. Prerequisites for Course Registration

Final year of study.

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

- Identify and formalize a professional problem
- Methodologically solve the problem properly
- Write a B.Sc. thesis outlining the problem in the introductory section, giving acceptable solutions to the problem and in the concluding section briefly present the results relevant to the solution of the analysed problem.

1.4. Course Outline

1.5. Modes of Instruction

- | | |
|---|--|
| <input type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input checked="" type="checkbox"/> Mentorship X |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Student in agreement with the mentor should select the topic of the paper (B.Sc. thesis) and write it according to the instructions provided on the faculty website:

https://www.pfri.uniri.hr/web/hr/dokumenti/Upute_za_izradu_zavrshnog_rada_PFRI_2019_FINAL.pdf

As well as a template for creating a final paper:

https://www.pfri.uniri.hr/web/hr/dokumenti/Predlozak_za_zavrshni_rad_2019_FINAL.pdf



The B.Sc. thesis must be grammatically, spelling and style correct.

After the first student-mentor consultation meeting, the student consults the assigned literature, studies the matter, consults his own collected resources, and elaborates on the content of the B.Sc. thesis.

When the mentor approves and accepts the final B.Sc. thesis, the student submits the final version to the student service.

1.8. *Assessment¹ of Learning Outcomes*

Continuous student and mentor consultations.

Course attendance		Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	4
Project	3	Continuous Assessment		Presentation		Practical work	
Portfolio							

1.9. *Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam*

The learning outcome check is performed before a expert committee consisting of three members of the Department of Nautical science. Student should defend publicly his / her B.Sc. thesis. After presenting the B.Sc. thesis and answering the questions asked, the expert committee makes a decision on the defense of the B.Sc. thesis and evaluates it taking into account the quality and quantity of the B.Sc. thesis, the answers to the questions asked and the student's ability to understand and properly use the chosen matter.

1.10. *Main Reading*

Defined when selecting the theme of the B.Sc. thesis.

1.11. *Recommended Reading*

Defined when selecting the theme of the B.Sc. thesis.

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



3.2. Course description

Generic information		
Head of Course	Dani Mohović, PhD, Associate professor	
Course	Passage planning	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+30+0 (2+2+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the legal sources of maritime passage planning, the elements of a passage plan, principles and order of analysis of factors affecting the choice of fairway and type of navigation, division of maritime navigation, planning of the ocean, coast and port part of the voyage, vessel traffic management information systems for specific areas, the work of the VTS service and to familiarize students with the principles of international and national regulations of watchkeeping and explain the principles of watchkeeping on deck, at anchorage and in port.

1.2. Prerequisites for Course Registration

Passed Terrestrial Navigation and Electronic Navigation exam

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Describe and explain the elements of a passage plan
2. define and describe the factors that influence the choice of fairway
3. Describe the factors relevant to planning the oceanic, coastal and port portion of the trip
4. Develop a passage plan for the specific voyage of the ship
5. Explain the objectives and the way the navigation guidance system works in specific areas
6. Explain the objectives and operation of the maritime navigation control and management system
7. Explain the principles and technological conditions for optimizing maritime voyage
8. Demonstrate the skill of keeping a deck watch in navigation, at anchorage and in port during navigation practice.

1.4. Course Outline

The concept of maritime voyage. International maritime navigation system. International sources. International official and unofficial organizations. International Navigation Safety Organizations. Shipowners' associations and non-governmental organizations. International and national regulations and rules on the safety of navigation. Basic Maritime Conventions for Navigation Safety. Technology support for navigation safety. Navigation support. World Navigation Alert Service. Characteristics and structure of maritime navigation. Passage planning. Ocean passage Planning. Coastal passage planning. Passage planning in limited waters (inland waterways and ports). Passage planning optimization. Ship operation in time. Passage planning cost model. Keeping deck watch in navigation, at anchorage and in port. Coastal State Rights and Obligations. Domain Theory. Collision hazard coefficient. Navigation guidance. Service control of maritime navigation. Communication with the Navigation Control Service. Models of structure. Means of control and data collection. Navigation management. STCW Convention requirements.



1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures <input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work	<input checked="" type="checkbox"/> Practical work <input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____					
1.6. Comments	<i>During the exercises, students make passage plans for the ships in different navigation areas, working in groups, and each student has to independently create a specific passage plan. In addition, students make passage plans when sailing on navigation practice. Part of the practical work is carried out in the framework of navigation practice on board.</i>						
1.7. Student Obligations							
<i>Active attendance of classes and at least 70% of completed classes and exercises and is required to prepare independently a specific passage plan before taking the exam. The student is required to pass the final exam.</i>							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	2	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	0.5
Portfolio		Final exam	1.5				

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final oral exam (according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka)

Continuous assessment:

-checking the completion of thematic tasks of passage planning on exercises on paper and electronic charts and creating a concrete passage plan - the student must show complete knowledge and skill

Final exam:

Final exam (oral exam) checks the completeness of theoretical knowledge in the field of course Passage Planning, it is necessary to achieve a minimum of 50% of the required theoretical knowledge.

1.10. Main Reading

1. Zec, D., *Planiranje pomorske plovidbe*, Pomorski fakultet u Rijeci, Rijeka, 1997.
2. Đ. Mohović, *Passage planning*, lectures on web sites
3. International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1995.
4. Pravilnik o uvjetima i načinu održavanja straže, te obavljanju drugih poslova na brodu kojima se osigurava sigurna plovidba i zaštita mora od onečišćenja, NN 125/2005, NN 126/2008 (izmjene i dopune)
5. Swift, A. J., *Bridge Team Management*, London, 2004.

1.11. Recommended Reading

1. Master's thesis: Mohović, Đ., *An algorithmic approach to maritime navigation planning*, Faculty of Maritime Studies in Rijeka, Rijeka, 2003.
2. Anwar, N., Khalique, A., *Passage planning – Principles*, Witherbys Publishing, London, 2006.
3. Anwar, N., Khalique, A., *Passage planning – Practice*, Witherbys Publishing, London, 2006.
4. Rowe, R. W., *The Shiphandler's Guide*, London, 2000.
5. *The Nautical Institute on Command*, London, 2000.
6. House, D. J., *Navigation for Master*, London, 1998.
7. *Bridge Watchkeeping*, London, 2003.

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
<i>Passage Planning, lectures on web pages</i>	unlimited	
<i>Maritime navigation planning - textbook</i>	10	70
<i>STCW Convention</i>	3	
<i>Pravilnik o uvjetima i načinu održavanja straže, te obavljanju drugih poslova na brodu kojima se osigurava sigurna plovidba i zaštita mora od onečišćenja, NN 125/2005, NN 126/2008</i>	unlimited	
<i>Bridge Team Management, London, 2004.</i>	2	

1.13. Quality Assurance



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3.2. Course description

Generic information		
Head of Course	Serdjo Kos , PhD , Full professor (tenured)	
Course	Navigation practice	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	3.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	2
	Number of Hours (L+E+S)	(0 + 60 + 0) (0 + 4 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of this course is to acquaint students with the procedures of conducting terrestrial, electronic and astronomical navigation, ship manoeuvring characteristics and factors affecting ship manoeuvring, team work on a navigating bridge, proper use of electronic and classic navigation equipment (especially ARPA devices), proper application rules for avoiding collisions at sea, the organization and management of crews, emergency procedures and the handling of safety and fire-fighting equipment on board.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

Students are expected to be able to:

1. Clarify and demonstrate general knowledge of procedures for safely performing tasks on a navigating bridge,
2. Parse and demonstrate knowledge of the rules for avoiding collisions at sea in all circumstances,
3. Explain the characteristics, analyse and properly use the appropriate navigation system (especially the radar and ARPA device),
4. Parse and analyse the factors that affect the manoeuvring of the ship and take the appropriate manoeuvre,
5. Parse the characteristics and define the proper way of using safety and fire-fighting equipment on board,
6. Explain and demonstrate specific rules for the organization and management of the ship's crew.

1.4. Course Outline

Proper guard posture and use of procedures for working on a bridge. Determining the position of the ship using terrestrial objects and using the radar ARPA device and GPS. Plotting courses and positions on the navigation chart. Reading data from the ECDIS (Electronic chart display and information system). Magnetic compass deviation control by different methods. Proper use of sextant. Determining the beginning and ending of twilight, the time of the right sunrise and sunset, and the passage of the sun through the upper meridian of the observation point. Latitude account of the passage of the sun through the meridian of the observation point. Determining the position of the ship using the following astronomical methods: running fix, direct method and altitude method. Identification of celestial bodies. Use of nautical publications. Creating of a ship's passage plan. Reading synoptic charts. Calculating the height of water (Tides). Application of rules for avoiding collisions at sea. Identification of the navigation lights and day markings of the surrounding vessels. Proper monitoring of the surrounding vessels and collision risk assessment. Use of ARPA radar devices for search and



rescue at sea. Familiarisation with the maneuvering characteristics of the ship. Ship manoeuvring in all conditions (influence of external meteorological factors, interaction with other ships, interaction with the coast). Practical maneuvering by training ship. Anchoring maneuver under different conditions. Embarking and disembarking of pilot. Monitoring the exchange of information between the Master and Pilot. Preparation of a preliminary cargo stowage plan. Use of proper equipment and materials for securing cargo (cargo lashing). Procedures for safe lowering and lifting for loading and unloading ramps. Emergency procedures using rescue and fire fighting equipment.

1.5. Modes of Instruction	<input type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
	<input checked="" type="checkbox"/> Exercises X	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
	<input checked="" type="checkbox"/> Field work X	<input type="checkbox"/> Other _____

1.6. Comments

1.7. Student Obligations

Active class attendance and practical exercises on board training ship - 100%. Successful on-board practical knowledge test.

1.8. Assessment¹ of Learning Outcomes

Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	1
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Knowledge assessment is carried out by practically performing and analysing and solving on-board exam tasks in the field of navigation and use of navigation equipment, ship manoeuvring, organization of work and crew and procedures in extraordinary circumstances - learning outcomes 1 - 6.

A minimum of 80% of knowledge in the above areas and a properly completed practical assignment are required.

1.10. Main Reading

Grupa autora : Vademecum maritimus , podsjetnik pomorcima , Pomorski fakultet u Rijeci, Rijeka, 2014.

1.11. Recommended Reading

Actual annual publications of the next professional literature :

1. Hrvatski hidrografski institut, "Peljar I. Jadransko more – istočna obala".
2. Hrvatski hidrografski institut, "Nautički godišnjak".
3. Hrvatski hidrografski institut, "Tablice morskih mijena".
4. Hrvatski hidrografski institut, "Radio služba za pomorce".
5. Hrvatski hidrografski institut, "Popis svjetala i signala za maglu – Jadransko more"

1.12. Number of Main Reading Examples

Title	Number of examples	Number of students
Vademecum maritimus	10	67

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.13.	<i>Quality Assurance</i>	
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.		



3.2. Course description

Generic information		
Head of Course	PhD Mirano Hess	
Course	Business operations in shipping	
Study Programme	Nautical studies and maritime transport technology	
Level	Undergraduate study	
Type of Course	Optional course	
Year of Study	3	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	2 + 1 + 0

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

To train students to understand the segmentation of the maritime market, the correlation of influencing factors between segments, the position of ship owners and charterers in the conditions of competitiveness of the modern maritime market, and to understand the rights and responsibilities defined by certain documents in the business of stakeholders.

1.2. Prerequisites for Course Registration

/

1.3. Expected Learning Outcomes

1. Describe, explain and compare the principles of movement, elements and organization of the maritime market
2. Explain the correlation between freight, shipbuilding, second-hand and scraping segments and analyze interaction factors
3. Explain and analyze the impact of costs and earnings of owners and charterers and business cycles on the movement of the maritime market
4. Compare the financing forms of carriers with the forecasting and research of the maritime market and explain the methodology of market evaluation of ships
5. Analyze and explain the rights and responsibilities defined by certain documents in the stakeholder business

1.4. Course Outline



1. Principles of maritime trade, organization of the maritime market and demand characteristics of shipping transportation costs and economies of scale
2. Segmentation of the maritime market, demand, supply of ships and freight rates cycles
3. Regional structure of world shipbuilding, shipbuilding process, shipbuilding costs and competitiveness
4. New ship market, used ship market and ship recycling
5. The impact of shipping costs and earnings on the movement of the maritime market
6. Financing of ships and shipping companies
7. Correlation of maritime market forecast and research
8. Market evaluation of ships in overseas trade and factors determining the type of ship ordered
9. Rights and responsibilities arising from certain documents in the business of stakeholders, primarily owners and charterers

1.5. Modes of Instruction

- | | |
|---|--|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input checked="" type="checkbox"/> Presentation |

1.6. Comments

1.7. Student Obligations

Active attendance at classes. Passed a midterm exam and final exam.

1.8. Assessment¹ of Learning Outcomes

Course attendance	1.5	Class participation	0.3	Seminar paper		Experiment	
Written exam	0.8	Oral exam		Essay		Research	
Project		Continuous Assessment	0.4	Presentation	1	Practical work	
Portfolio							

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

70% in class and 30% in final exam (according to the Regulations on studies of the University of Rijeka and the Regulations on study at the Faculty of Maritime Studies in Rijeka). Continuous assessment: a midterm exam, a minimum of 50% correct answers (I1, I2, I3, I5) must be obtained, and a presentation of the subject for a maximum of 20% of credits in the course. Final exam: written exam in the course subject. A minimum of 50% correct answers should be obtained (I4, I5).

Examples of evaluating learning outcomes:

1. List what they are, and explain the impact of production and trade advantage on the organization of the maritime market. (I1)
2. What is the difference, expressed in %, between orders and actual shipments of new ships from the shipyard in the last 5 years and explain why there is a difference. (I2)
3. In addition to the supply and demand of ships, what else affects the level of freight on the open maritime market? (I3)
4. List the institutions and explain how they secure or organize the financing of the ships. (I4)
5. Explain what the Bimco SALEFORM 1993 contract states in "clause 4. Inspections" and how it affects the sale of the ship. (I5)

1.10. Main Reading



1. Hess, M.: Business operations in shipping, script on web pages of Faculty of Maritime Studies University of Rijeka, 2020
2. Hess, M.: Documents, script on web pages of Faculty of Maritime Studies University of Rijeka, 2020

1.11. *Recommended Reading*

1. Hopkins, Business and Law for the Shipmaster, Brown, Son & Ferguson, 2017.
2. Maclachlam M. – The Shipmaster's Business Companion, 4th edition, NI, 2004.
3. Branch, A., Economics of Shipping Practice and Mangement, Chapman and Hall Ltd, London, New York, 2003.
4. Spruyt, J., Ship Management, Lloyd's of London Press Ltd, 2001.
5. Strickland, Thompson, Strategic Management, Irwin, Boston 2005.
6. The Handbook of Maritime Economics and Business, LL, 2010.
7. Maritime law RH

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Hess, M.: Business operations in shipping, script on web pages of Faculty of Maritime Studies University of Rijeka, 2020	unlimited	55
Hess, M.: Documents, script on web pages of Faculty of Maritime Studies University of Rijeka, 2020	unlimited	55

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies University of Rijeka. Once a year, the results of the transience are analyzed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Assist. prof. Livia Maglić	
Course	Port and Terminal Technology	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Bachelor	
Type of Course	Elective	
Year of Study	3rd	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	4
	Number of Hours (L+E+S)	30+15+0 (2+1+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of this course is to study the basic technical and technological features of ports and terminals. Particular emphasis is given to the port infrastructure, superstructure and technical exploitation of port facilities and assets, and different types of warehouses. The goal is to explain the impact of technological changes in shipping on the development of ports and terminals and highlight the need for construction and functioning of port terminals. By studying this course, students will be introduced to basic maritime facilities and the physical conditions considered when constructing ports and terminals infrastructure, superstructure and technical exploitation of port facilities and assets, and to different types of warehouses. The goal is to explain the impact of technological changes in shipping on the development of ports and terminals and highlight the need for construction and functioning of port terminals. By studying this course, students will be introduced to basic maritime objects and the physical conditions considered when constructing ports and terminals.

1.2. Prerequisites for Course Registration

None.

1.3. Expected Learning Outcomes

After passing the exam, students are expected to be able to:

1. Define the basic terms of technology, traffic technology, port, terminal, port, and terminal technology
2. Classify seaports according to different criteria
3. Describe and explain the impact of technological changes in shipping on the development of ports and terminals
4. Describe the port-maritime facilities and determine the importance of each facility in the realization of the port service
5. Analyze the physical conditions that affect the construction of ports and terminals
6. Notice the complexity of the construction and operation of port terminals
7. Describe and explain the technical and technological characteristics of terminals designed for different types of cargo
8. Explain the assessment methodology for port terminal capacity
9. Describe and explain the application and effectiveness of each group of shipping agents at specialized terminals
10. Differentiate and compare technological processes at each terminal

1.4. Course Outline



Conceptual explanations of the port, port system, material handling equipment and cargo handling technology. The term, types, and features of ports. Impact of technological changes in shipping on the development of ports and terminals. Conditions for port planning and terminal design. Basic seaport facilities. Port warehouses. Technological processes of cargo transportation in port. Special purpose ports. River ports - locks. Cranes. Material handling equipment. Specialized handling facilities. Bridge cranes. Elevators. Continuous material handling systems. Comparative analysis of the application of different material handling equipment. Conceptual explanations and types of terminals. Methodology for assessment of port terminal capacity. Multipurpose and universal terminals. Terminals for unified (unit) cargo: container terminals, RO-RO terminals, LUF, and LASH terminals. Terminals for dry bulk cargo: coal and iron ore terminals, grain terminals, terminals for phosphate. Liquid cargo and liquefied terminals: oil and oil derivatives terminals, LNG and LPG terminals, chemical products terminals. Heavy and very heavy cargo terminals. Timber and wood products terminals. Terminals for fruits & foodstuffs. Terminals for livestock. Passenger terminals.

1.5. Modes of Instruction

- | | |
|--|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input checked="" type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input checked="" type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active participation in class and at least 70% of classes attended (lectures and exercises). Colloquiums passed and successfully written seminar paper.

1.8. Assessment¹ of Learning Outcomes

Course attendance	1,5	Class participation		Seminar paper	0,5	Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment	1,0	Presentation		Practical work	
Portfolio		Final exam	1,0				

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

The final grade of the course grade is the sum of the percentages of student achievement during the course (70% of grade) and the percentage of success achieved in the final exam (30% of grade) according to the Regulations on Studies of the University of Rijeka and Rulebook of study at the Faculty of Maritime Studies in Rijeka.

Continuous assessment:

- 2 colloquiums - a minimum of 50% correct answers are required.

- writing and presentation of seminar work - it is necessary to achieve at least 50% of the estimated number of credits.

Final exam:

The final exam (written and oral exam) checks the integrity of theoretical knowledge in the field of port technology and terminals - a minimum of 50% of the theoretical knowledge is required.

1.10. Main Reading

- Dundović, Č., Lučki terminali, Pomorski fakultet u Rijeci, Rijeka, 2002.
- Dundović, Č., Kesić, B.: Tehnologija i organizacija luka, Pomorski fakultet u Rijeci, Rijeka, 2001

1.11. Recommended Reading



1. Dundović, Č., Poletan-Jugović, T., Jugović, A., Hess, S.: Integracija i koordinacija lučkog i prometnog sustava Republike Hrvatske, Pomorski fakultet u Rijeci, Rijeka, 2006.
2. Dundović, Č., Kolanović, I.: Tehničko-tehnološka opravdanost izgradnje višenamjenskog terminala u riječkoj luci, Pomorstvo, god. 16, Rijeka, 2002.
3. Dundović, Č.: Prekrcajna sredstva prekidnog transporta, Pomorski fakultet u Rijeci, Rijeka, 2005.
4. Ivaković, Č.: Božičević, D., Smoljić, Lj., Đaković, N.: Osnove vodnog prometa, Sveučilište u Zagrebu, Fakultet prometnih znanosti, Zagreb, 1997.
5. Agerschou, H., Lundgren, H., Sorensen, T., Ernst, T., Korsgaard, J.: Planning and Design of Ports and Marine Terminals, A. Wiley - Interscience Publication, New York, 1985

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Dundović, Č., Lučki terminali, Pomorski fakultet u Rijeci, Rijeka, 2002.	9	15
Dundović, Č., Kesić, B.: Tehnologija i organizacija luka, Pomorski fakultet u Rijeci, Rijeka, 2001	13	

1.13. *Quality Assurance*

The quality of study is continuously observed under the ISO 9001 system and following European standards and guidelines for quality assurance implemented at the Faculty of Maritime Studies, University of Rijeka. An analysis of the exams is given annually, and a survey among students is conducted by the semester.

¹ **NOTE:** Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities he course. Use empty fields for additional activities.



3.2. Course description

Generic information		
Head of Course	Vlado Frančić, Associate Professor, Ph.D.	
Course	Passenger Transport by Sea	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Bachelor	
Type of Course	Mandatory	
Year of Study	3	Semester 6
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	30 + 15 + 0 (2 + 1 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the subject is to explain students all aspects of the passenger transport by sea, i.e. use of ships, technological systems and techniques for the transportation of the passenger by sea. The student will be familiarized with international regulations, codes, recommendations and standards related to the passenger transport. Additionally, during the course the knowledge related to technical and business management of the passenger ships will be explicated. Especially, all activities carried out in coastal and liner passenger transport as well as in ro-ro passenger and HSC transport will be analysed.

1.2. Prerequisites for Course Registration

Prerequisite for the examination is successfully completed course "Ship design and construction 1" (passed exam requirement).

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Explain international and national legal regulations relating to the carriage of passengers by sea
2. Explain specific design and construction of passenger ships
3. Describe and sketch the basic technical and technological characteristics of passenger ships, ro-ro passengers and high-speed crafts (HSC) as well as equipment used for embarkation of passengers and vehicles.
4. Differentiate special characteristics of passenger, ro-ro passenger and high-speed passenger ships.
5. Analyse developments in the cruise industry.
6. Compare coastal liner shipping activities with different types of passenger ships.
7. Distinguish and compare the specifics of the safety equipment and procedures between passenger and cargo ships.

1.4. Course Outline

History of the passenger transport by sea. Passenger ships classification. International conventions, codes, recommendations and standards related to the passenger transport by sea. Athens convention. Coastal passenger ships. Ocean-going passenger ships. Passenger ship design and construction characteristics. Passenger-cargo ships. High Speed Crafts (HSC). Operation of passenger and passenger-cargo HSC ships. Technical management of passenger and ro-ro passenger ships. Technical systems and environmental protection measure Safe berthing of passenger ships in the port. Crew and the watch keeping. Ship maintenance. Logistic support. Passenger ships market. Terms and conditions of liner passenger transport. Contracting and transport under special requirements. Market characteristic. Cruising market. Passenger and ro-ro passenger terminals.

1.5. Modes of

Lectures

Practical work



<i>Instruction</i>	<input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____				
<i>1.6. Comments</i>	Part of the exercises related to the technical characteristics of the ships is delivered by visiting the appropriate ships in the port or shipyard. Part of the exercises are presented using multimedia. Selected subjects are presented by active captains.						
<i>1.7. Student Obligations</i>							
Active attendance (lectures and exercises) and of regular class attendance (all students are expected to abide by the class attendance policy set forth by the Faculty of Maritime Studies). Presented presentation according to a predefined topic and passed the final exam.							
<i>1.8. Assessment¹ of Learning Outcomes</i>							
Course attendance	1,5	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	2,5	Essay		Research	
Project		Continuous Assessment	1,0	Presentation		Practical work	
Portfolio							
<i>1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam</i>							
70% in class and 30% in final exam (according to the Regulations on studying of the University of Rijeka and the Regulations on studying of the Faculty of Maritime Studies in Rijeka). Continuous assessment:							
- Power point presentation on specific topic - acceptance of presentation is required.							
- Active participation in classes - performing group assignments.							
The final exam (oral exam) evaluation of completeness. A minimum of 50% of the required theoretical knowledge is required.							
Examples of evaluating learning outcomes in relation to set learning outcomes are:							
1. Explain the differences between the technical and technological characteristics of different types of passenger ships.							
2. List and explain the application of dedicated port transshipment equipment for ro-ro passenger ships.							
3. Evaluate the development opportunities for cruise ships worldwide and by region.							
<i>1.10. Main Reading</i>							
1. Lecturer notes published on official webpage.							
2. SHIP DESIGN AND CONSTRUCTION, editor Thomas Lamb, the Society of Naval Architects and Marine Engineers, (SNAME), NY, 2004.							
3. Technical rules for statutory certification of the Croatian Register of Shipping, Croatian Register of Shipping, Split. part 21. Passenger transport.							
4. PRAVILA ZA STATUTARNU CERTIFIKACIJU PUTNIČKIH BRODOVA U NACIONALNOJ PLOVIDBI, Croatian Register of Shipping, Split.							
<i>1.11. Recommended Reading</i>							
1. House, David J.: MARINE FERRY TRANSPORTS – AN OPERATORS GUIDE, Witherby, London, 2002.							
2. International Maritime Organization, HSC Code, London, 2002.							
3. SOLAS Consolidated Edition 2009., Consolidated text of the International Convention for the Safety of Life at Sea, 1974, and its Protocol of 1988: articles, annexes and certificates, IMO, London, 2009.							
4. Jadrolinija Rijeka, BRODOVI I SUDBINE 1947–2007, editor Marijan Žuvić, Jadrolinija, Rijeka, 2007.							
<i>1.12. Number of Main Reading Examples</i>							
<i>Title</i>				<i>Number of examples</i>		<i>Number of students</i>	
Lecturer notes published on official webpage.				Electronic edition		25	

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



TEHNIČKA PRAVILA ZA STATUTARNU CERTIFIKACIJU POMORSKIH OBJEKATA, Croatian Register of Shipping, Split. part 21. Passenger transport.	Electronic Edition	
SHIP DESIGN AND CONSTRUCTION, editor Thomas Lamb, the Society of Naval Architects and Marine Engineers (SNAME), NY, 2004.	1	
<i>1.13. Quality Assurance</i>		
<p>Quality assurance system of educational process is in accordance with ISO 9001:2015 system as implemented on Faculty of Maritime Studies Rijeka. The analyse of the exams is carried out annually. Students' evaluation is carried out each semester (more details provided in part describing organization of the Faculty).</p> <p>Additionally – Internal: Student feedback (SET - Student evaluation of teaching) at the end of academic year. External: Programme quality is reviewed by the QA Agency at regular basis.</p>		

3.2. Course Description

Generic information		
Head of Course	Igor Vio, PhD	
Course	Transport Insurance	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate degree programme	
Type of Course	Elective	
Year of Study	3	
Estimated Student Workload and Methods of Instruction	ECTS Coefficient of Student Workload	4
	Number of Hours (L+E+S)	45 + 0 + 0
1. GENERAL COURSE DESCRIPTION		
<i>1.1. Course Objectives</i>		
<p>Students should become familiar with international and national legal framework regulating transport insurance and gain knowledge on insurance contract features, essential elements and claim types. During this course, the emphasis is on understanding of terms and conditions concerning particular transport insurance types including modalities of insurance in maritime, air, road and railway transport. Course objectives are also to expose international trade insurance scope and modalities, and to display the functioning, significance and types of reinsurance and co-insurance contracts.</p>		
<i>1.2. Prerequisites for Course Registration</i>		
none		
<i>1.3. Expected Learning Outcomes</i>		
<ol style="list-style-type: none"> 1. To indicate and interpret the basic concepts of transport insurance 2. To specify and compare international and national legal sources of transport insurance, taking into account the specific circumstances of maritime, air and land transport 3. To explain and compare the characteristics and elements of individual types of transport insurance contracts, and list and differentiate various types of insurance policy and other documents 4. To interpret the significance, characteristics and impact of the Institute Cargo Clauses for the insurance of goods in domestic and international transport 5. To enumerate and analyse the features of the Institute Hulls Clauses, and compare the conditions for insurance of boats and yachts 6. To describe and interpret the structure, activities and functions of insurance companies and P&I clubs 7. To specify and describe the conditions for insurance in land (road and railway) and air transport 8. To compare and describe procedures for obtaining evidence, drafting documents and reporting damage claims to the insurer 9. To explain the concepts of co-insurance and reinsurance and describe their application 		
<i>1.4. Course Outline</i>		
<p>Transport insurance basic features, insurance contract features, insurance contract documents, transport insurance contract elements, claim types, insurance management, insurance of goods in the national and international transport, marine hull and machinery insurance, P&I insurance, small craft and yacht insurance, foreign trade insurance, credit insurance, coinsurance and reinsurance.</p>		

1.5. Modes of Instruction	<input checked="" type="checkbox"/> Lectures		<input type="checkbox"/> Practical work				
	<input type="checkbox"/> Seminars and workshops		<input type="checkbox"/> Multimedia and Network				
	<input type="checkbox"/> Exercises		<input type="checkbox"/> Laboratory				
	<input type="checkbox"/> E-learning		<input type="checkbox"/> Mentorship				
	<input type="checkbox"/> Field work		<input type="checkbox"/> Other _____				
1.6. Comments							
1.7. Student Obligations							
<p>a) Students' main obligations are active course attendance with the preparation and presentation of seminar paper and they are required to pass three tests as continuous assessment during the term.</p> <p>b) As a prerequisite for the final exam, students must score at least 35 out of a possible 70 points (50%) during the classes.</p> <p>c) Students must score at least 15 out of a possible 30 points on final exams (50%).</p>							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	1,5	Class participation		Seminar paper	0,5	Experiment	
Written exam	1,0	Oral exam		Essay		Research	
Project		Continuous Assessment	1,0	Presentation		Practical work	
Portfolio							
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
<p>The evaluation procedure consists of continuous examination of knowledge in the form of three tests and a final exam. Examples of evaluating learning outcomes during classes and on the final exam:</p> <ol style="list-style-type: none"> 1. Indicate and define the basic concepts and principles of transport insurance 2. List the international and national legal sources of transport insurance and explain their specific solutions for maritime, air and land transport 3. List the basic types of transport insurance contracts and compare their characteristics and elements, and specify and describe types of insurance policy and other relevant documents 4. Explain and discuss the importance of the Institute Cargo Clauses, and in particular elaborate on the application of specific cargo clauses in domestic and international maritime, land and air transport 5. Specify and describe the most important features of the Institute Hulls Clauses, then compare the terms and conditions according to the risks covered, and elaborate the specific insurance terms for boats and yachts coverage 6. Describe the organization of P&I clubs, explain their importance for liability insurance of shipping companies, and list the most important club functions 7. List the specific terms and conditions for land and air transport insurance and explain their application 8. Interpret the features of the procedures for obtaining evidence, analyse the specifics of drafting and collecting documents and demonstrate modalities of reporting damage claims to the insurer 9. Explain the concepts and types of co-insurance and reinsurance, describe their characteristics and elaborate their application. 							

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.

1.10. *Main Reading*

Drago Pavić: Pomorsko osiguranje – pravo i praksa, s osnovama kopnenoga i zračnog transportnog osiguranja, Književni krug, Split, 2012.

Ivan Frančišković: Sustav transportnih osiguranja, Croatia osiguranje d.d., Zagreb, 1994.

Ivan Frančišković: Međunarodna osiguranja, predavanja na mrežnim stranicama Fakulteta.

1.11. *Recommended Reading*

Ivan Frančišković: Ekonomika međunarodnih osiguranja, Ekonomski fakultet Rijeka, 2005.

Drago Pavić, Pomorsko imovinsko pravo, Književni krug, Split, 2006.

Drago Pavić: Pomorsko pravo, knjiga III – Pomorske nezgode i pomorsko osiguranje, Visoka pomorska škola, Split, 2000.

Pomorski zakonik, Narodne novine br. 181/04. (s kasnijim izmjenama i dopunama)

Zakon o pomorskom dobru i morskim lukama, N.N. 158/03. (s kasnijim izmjenama i dopunama)

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Pomorsko osiguranje – pravo i praksa, s osnovama kopnenoga i zračnog transportnog osiguranja	Sufficient (in library and book shop)	12
Sustav transportnih osiguranja	Sufficient (in library and book shop)	12
Međunarodna osiguranja	Available on the website (pfri.uniri.hr)	12

1.13. *Quality Assurance*

Quality assurance of the course performance is continuously monitored according to ISO 9001 system applied at the University of Rijeka Faculty of Maritime Studies. An analysis of results of the final exams and a student survey are conducted and appropriate measures are adopted for each academic year.



3.2. Course description

Generic information			
Head of Course	Vlado Frančić, Associate Professor, Ph.D.		
Course	Safety and Quality Management in Shipping		
Study Programme	Nautical Studies and Maritime Transport Technology		
Level	Bachelor		
Type of Course	Mandatory		
Year of Study	3	Semester	6
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload		3
	Number of Hours (L+E+S)		30 + 15 + 0 (2 + 1 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The aim of the course is to familiarize students with the principles of quality, in general, as well as the principles of safety management systems and quality in shipping. The basic of safety management in shipping is an International Safety Management Code (ISM Code). Students will be familiar with the obligations in accordance with the ISM Code and the application onboard and generally in shipping. In addition, students will be introduced to practical examples of the application of the safety management system on board. Also, students will be able to maintain and improve the general or dedicated safety management systems in ships and in shipping companies by the implementation of the provisions of the ISM Code.

1.2. Prerequisites for Course Registration

Prerequisite for course registration is completed course Safety at Sea (course attendance requirement).
Prerequisite for the examination is successfully completed course Safety at sea (passed exam requirement).

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

- Explain the concept of quality management
- Describe the standardization of quality system.
- Explain the specifics of the development of safety and quality management in shipping.
- Describe the principles of the implementation of the ISM Code in shipping.
- Describe the obligations of shippers and their employees regarding the implementation of the ISM system.
- Explain methods of audit of the safety management systems on board.

1.4. Course Outline

Introduction, the concept of quality. What is quality? Historical development of the quality system. Process of establishing a quality system. Quality standardization (ISO standards). Maritime safety and environmental management system - concepts, legal regulation. Basic principles of maritime safety management. International Safety Management System - ISM Code - concepts, division, general principles and objectives, application. Safety Management System (SMS). The responsibility and authority of the company and the master responsibility and authority. Developing plans for essential shipboard operations and critical situations. Certification, evaluation and control. Amendments to the ISM Rules. Risk assessment and risk management as per of ISM requirements.

1.5. Modes of

Lectures

Practical work



<i>Instruction</i>	<input type="checkbox"/> Seminars and workshops <input checked="" type="checkbox"/> Exercises <input type="checkbox"/> E-learning <input type="checkbox"/> Field work		<input checked="" type="checkbox"/> Multimedia and Network <input type="checkbox"/> Laboratory <input type="checkbox"/> Mentorship <input type="checkbox"/> Other _____				
1.6. <i>Comments</i>	Exercises includes practical work with ship documentation required by the Ism codes (check list, work permit, ...)						
1.7. <i>Student Obligations</i>							
Active attendance (lectures and exercises) and of regular class attendance (all students are expected to abide by the class attendance policy set forth by the Faculty of Maritime Studies). Obligation of independent tasks creation.							
1.8. <i>Assessment¹ of Learning Outcomes</i>							
Course attendance	1,5	Class participation	0,5	Seminar paper		Experiment	
Written exam		Oral exam	1,0	Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	
Portfolio							
1.9. <i>Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam</i>							
70% in class and 30% in final exam (according to the Regulations on Studies of the University of Rijeka and the Regulations Faculty of Maritime Studies in Rijeka).							
Continuous assessment:							
<ul style="list-style-type: none"> - Design and presentation of independent tasks - application of ISM code in shipping companies. - Problem solving in group and individually. 							
The final exam (oral exam) checks the theoretical knowledge in the field of quality and safety management in Maritime industry (shipping). A minimum of 50% of theoretical knowledge is required.							
Examples of evaluating learning outcomes in relation to preset learning outcomes are:							
<ol style="list-style-type: none"> 1. Explain the importance of the Master's overriding authority and responsibility to make safety and environmental decisions and to look for assistance from the Company. 2. List essential shipboard operations and explain the obligations of the company in accordance with ISM regulations. 3. Show risk assessment example. 							
1.10. <i>Main Reading</i>							
<ol style="list-style-type: none"> 1. International safety Management Code, IMO Res A.741(18) with amendments (ISM Code), IMO, London. 2. Technical rules for statutory certification of the Croatian Register of Shipping in relation to certification of quality system and safety management system – part 30. Edition 2010. 3. Revised Guidelines on the Implementation of the International Safety Management (ISM) Code - IMO Resolution A.1118(30). 4. Lazibat Tončić: Quality Management (in Croatian) - M.E.P., 2009. 5. Kondić Živko, Quality and ISO 9000 (in Croatian) – TIVA, Varaždin, 2002. 							
1.11. <i>Recommended Reading</i>							
<ol style="list-style-type: none"> 1. Technical rules for statutory certification of the Croatian Register of Shipping, CRS, split. 2. ANDERSON, P. / WRIGHT, J. / NICHOLLS, S. / NOONAN, S. - Cracking the Code: The relevance of the ISM Code and its impact on shipping practices. London, Nautical Institute, 2003. (ISBN 1- 8700 – 77 – 63 - 6). 3. ANDERSON, P. - ISM Code: A practical guide to the legal and insurance implications. 2nd ed. London, Lloyd's of London Press, 2005. (ISBN 1 – 84311 – 471 – 2) 							

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1.12. Number of Main Reading Examples		
<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Technical rules for statutory certification of the Croatian Register of Shipping in relation to certification of quality system and safety management system – part 30. Edition 2010. www.crs.hr	Electronic edition	40
International safety Management Code, IMO Res A.741(18) with amendments (ISM Code), IMO, London.	2 + Electronic Edition	
Revised Guidelines on the Implementation of the International Safety Management (ISM) Code - IMO Resolution A.1118(30).	2 + Electronic Edition	
Lazibat Tonći: Quality Management (in Croatian) - M.E.P., 2009.	4	
Živko, Kvaliteta i ISO 9000 – primjena	2	
1.13. Quality Assurance		
<p>Quality assurance system of educational process is in accordance with ISO 9001:2015 system as implemented on Faculty of Maritime Studies Rijeka. The analyse of the exams is carried out annually. Students' evaluation is carried out each semester (more details provided in part describing organization of the Faculty).</p> <p>Additionally – Internal: Student feedback (SET - Student evaluation of teaching) at the end of academic year. External: Programme quality is reviewed by the QA Agency at regular basis.</p>		



3.2. Course description

Generic information		
Head of Course	Serdjo Kos , PhD , Full professor (tenured)	
Course	Professional practice	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	2
	Number of Hours (L+E+S)	(0 + 30 + 0) (0 + 2 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the practical work on board (developing knowledge and skills in the field of ship knowledge), safety at sea, steering, practical terrestrial navigation, procedures and means of fire protection on ships (FFE), using all life-saving appliances (LSA) and means of communication. Students are also introduced to the proper way to use signals for danger at sea (distress signals) and basic seamanship skills.

1.2. Prerequisites for Course Registration

No prerequisites

1.3. Expected Learning Outcomes

It is expected that students will be able to:

1. Demonstrate the skills of practical work on board and conducting practical terrestrial navigation
2. Demonstrate skills in using life-saving appliances at sea
3. Demonstrate skills in the use of means of maritime communication
4. Properly carry out the process of leaving the ship and surviving at sea
5. Properly carry out the process of using visual signals, transmitting and receiving messages using Morse code light signals, Morse code signalling and the use of the International Code of signals
6. Demonstrate the skill of making seamanship knots and other seamanship skills

1.4. Course Outline

Practical terrestrial navigation. Types of dangers at sea. General Safety Instructions. Exercise & Readiness to Operate lifeboats. Procedures after advertising a general alarm on board. Procedures when leaving the ship . Lifeboats, life rafts. Collection rescue boats. Davits for lifeboats. Davits for rafts. Davits for collection rescue boats. Davits for freefall lifeboats. Self-releasing marine equipment. Marine evacuation system (MES). Lowering lifeboats . Leaving the vicinity of the ship. Towing life rafts and collecting people from the sea . Lifting lifeboats. Lowering in the storm. Lifting in the storm. Procedures after distancing from the ship. Use of the lifeboats engine and equipment. Use of fire extinguishers. Water cooling formwork system. Air system for protection against toxic gases. Outboard engine of the collection rescue boats. Handling lifeboats in bad weather. Handling of crafts. Handling of life rafts. Putting to shore. Procedures in lifeboats. First procedures. Common Survival Procedures. Use of equipment. Food and water division. Procedures for locating vessels. Simulation of helicopter rescue operations. Suppression of hypothermia. Use of radio equipment. Portable VHF



Transceivers, EPIRB, SART. Distress signals at sea. Signaling equipment and pyrotechnics. Signaling at sea (International Code of Signals). Providing first aid. Practicing lowering and lifting lifeboats. Practicing lowering life rafts. Inspection and repair of fire fighting equipment and resources. Fire alarms. Fire detection equipment. Fire-fighting equipment installed. Fire hydrants, pipelines and nozzles. Portable and mobile fire fighting equipment. Personal firefighting equipment. Fire protection plans. Practicing fire extinguishing in all conditions (fire polygon). Seamanship skills. Use of ship's berth and mooring equipment. Seamanship knots.

1.5. Modes of Instruction	<input type="checkbox"/> Lectures	<input type="checkbox"/> Practical work
	<input type="checkbox"/> Seminars and workshops	<input type="checkbox"/> Multimedia and Network
	<input checked="" type="checkbox"/> Exercises X	<input type="checkbox"/> Laboratory
	<input type="checkbox"/> E-learning	<input type="checkbox"/> Mentorship
	<input checked="" type="checkbox"/> Field work X	<input type="checkbox"/> Other _____

1.6. Comments Practical work is carried out at a maritime training ground on the land, on a training ship and at a specialized fire polygon.

1.7. Student Obligations

Active Class Attendance - 100% of class attendance

1.8. Assessment¹ of Learning Outcomes

Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam		Oral exam		Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	1
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

Students are required to attend 100% of classes. Knowledge assessment is carried out by practically conducting exercises in the field of practical guidance in terrestrial navigation, ship knowledge, safety at sea, communication tools and seamanship skills. - learning outcomes 1 - 6.

A minimum of 80% practical knowledge in the above fields is required.

Students with appropriate certificate Officer in charge of a navigational watch on ships of of 500 GT or more (STCW A -II / 1) or students with appropriate navigation practice are exempted from attending professional practice.

1.10. Main Reading

1. Zec, D., Sigurnost na moru, Pomorski fakultet u Rijeci, Rijeka, 2001.
2. Simović, A., Mornarske vještine, Školska knjiga, Zagreb, 1991.
3. International Code of Signals, IMO, 1987.
4. Grupa autora : Vademecum maritimus , podsjetnik pomorcima , Pomorski fakultet u Rijeci , Rijeka, 2014.

1.11. Recommended Reading

1. IMO model courses 2.03 Advanced training in fire fighting, IMO, London, 2001.
2. IMO model courses 1.23 Proficiency in survival craft and rescue boats (other than fast rescue boats), IMO, London, 2000.
3. IMO model courses 1.19 Proficiency in personal survival techniques, IMO, London, 2000.
4. IMO model courses 1.13 Elementary first aid, IMO, London, 2000.
5. IMO model courses 1.20 Fire prevention and fire fighting, IMO, London, 2000.

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



6. IMO model courses 1.21 Personal safety and social responsibility, IMO, London, 2000

1.12. Number of Main Reading Examples

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Sigurnost na moru	10	120
International Code of Signals	10	120
Vademecum maritimus	10	120

1.13. Quality Assurance

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.



3.2. Course description

Generic information		
Head of Course	Damir Zec, Ph.D.	
Course	Safety at Sea	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	Undergraduate	
Type of Course	Mandatory	
Year of Study	2	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	5
	Number of Hours (L+E+S)	45 + 15 + 0 (3 + 1 + 0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to familiarize students with the international navigation safety system, including the most important maritime conventions and to enable them to perform basic maritime safety tasks independently, including search and rescue at sea, emergency communications, survival at sea and firefighting, in accordance with the provisions of the STCW Convention. Through practical work and exercises, students need to acquire skills required in case of different emergencies, especially in case of on-board fire, vessel abandon, survival at sea and communication using the GMDSS equipment.

1.2. Prerequisites for Course Registration

Students who have not completed maritime nautical schools are required to attend and successfully complete the Introductory program (D2 - Special onboard basic safety program).

1.3. Expected Learning Outcomes

Students are expected to be able to:

1. enumerate and interpret the legal sources of the international and national safety system,
2. control the ship safely,
3. perform basic search and rescue operations at sea,
4. use means of communication in case of emergency,
5. prepare to abandon the ship and use safety crafts and means available on board the ships,
6. recommend survival methods after the ship's abandon,
7. explain the functional characteristics, technological conditions and the way of maintaining fire-fighting devices on ships,
8. use fire-fighting means available on merchant ships.

1.4. Course Outline

International and national maritime safety system, search and rescue at sea, maritime accidents, life-saving means, communications while assisting in danger, leaving the ship and surviving at sea, people at sea, fire protection, maintenance and surveillance of all safety systems on board, development and preparing an emergency plan and organizing and conducting exercises on board.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work | <input type="checkbox"/> Other _____ |



1.6. Comments							
1.7. Student Obligations							
Active participation and at least 70% of class attendance.							
1.8. Assessment ¹ of Learning Outcomes							
Course attendance	2.0	Class participation		Seminar paper		Experiment	
Written exam	1.0	Oral exam	1.0	Essay		Research	
Project		Continuous Assessment		Presentation		Practical work	1.0
Portfolio							
1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam							
<p>1. 70% in class and 30% in final exam (according to the Regulations on studies of the University of Rijeka and the Regulations on study at the Faculty of Maritime Studies in Rijeka)</p> <p>2. Practical work - on a training ground (practicum, firefighting field) (outcomes 2,3,4,5,8)</p> <p>3. Written exam in the field of International Maritime Safety, Search and Rescue at Sea, Maritime Accidents, Life-Saving, Communication during Assistance, Ship's abandon, Survival and Fire Protection (minimum 75% correct answers required, all learning outcomes)</p> <p>4. Oral exam - the completeness of theoretical knowledge in the field of safety at sea is checked (minimum 50% of the required theoretical knowledge is required)</p> <p>Examples of evaluating learning outcomes in relation to set learning outcomes are:</p> <p>1. Sort out ways to help people at sea by type of threat.</p> <p>2. List the maritime communication channels and explain the advantages and disadvantages of each frequency band.</p> <p>3. Explain the ship's abandon procedure.</p> <p>4. List and explain how the ship's firefighting systems work.</p> <p>5. Explain and prepare a muster list.</p>							
1.10. Main Reading							
1. Zec, D., "Sigurnost na moru", izdanje 2001.							
1.11. Recommended Reading							
<p>1. International Maritime Organization, SOLAS, London, 2009.</p> <p>2. International Maritime Organization, SAR, London, 2003.</p> <p>3. International Maritime Organization, IAMSAR, Vol. 1, Vol. 2, Vol. 3, 2006.</p>							
1.12. Number of Main Reading Examples							
Title				Number of examples		Number of students	
Zec, D. Safety at sea				11)		60	
1.13. Quality Assurance							
The quality of study is monitored in accordance with the ISO 9001 system and in accordance with European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, the results of the failure to pass are analysed and appropriate measures are adopted.							

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



3.2. Course description

Generic information		
Head of Course	Serdjo Kos , PhD , Full professor (tenured)	
Course	Terrestrial navigation	
Study Programme	Nautical Studies and Maritime Transport Technology	
Level	University undergraduate study program	
Type of Course	Mandatory	
Year of Study	2.	
Estimated Student Workload and Methods of Instruction	ECTS coefficient of Student Workload	7
	Number of Hours (L+E+S)	(45+45+0) (3+3+0)

1. GENERAL COURSE DESCRIPTION

1.1. Course Objectives

The objective of the course is to acquaint students with the basic concepts in maritime surface navigation, the relevant parameters of running a ship by methods of terrestrial positioning, orientation at sea, earth's and ship's magnetism and magnetic compasses, theoretical basics of mathematical maritime cartography, sea tides and currents, balisage systems, theoretical bases errors in maritime surface navigation positioning (Theory of errors), navigation methods (special cases of navigation, rhumb line and great circle navigation, combined navigation), navigation in difficult navigation conditions, basics of maritime kinematics, speed and distance travelled in navigation, and the drifting of the ship in navigation.

1.2. Prerequisites for Course Registration

Passed Mathematics course II exam

1.3. Expected Learning Outcomes

It is expected that the student will be able to:

1. Parse and correctly use the basic concepts in maritime surface navigation and orientation at sea (course, azimuth, absolute and relative coordinates, conversion of courses and azimuth, conversion of coordinates,)
2. Properly run the ship using the appropriate terrestrial positioning methods
3. Parse and analyse earth's / ship's magnetism and properly use marine magnetic compasses
4. Parse, analyse and properly use maritime cartographic projections, charts and navigation manuals
5. Interpret the basics of the ECDIS system
6. Parse, analyse and correctly calculate the relevant parameters of the sea tides (static / dynamic theory of sea tides, tidal wave equation, tidal window...)
7. Properly apply the knowledge gained from the Theory of errors in the analysis of positioning errors in surface maritime navigation
8. Parse, analyse and correctly calculate the navigation parameters in rhumb line, great circle and combined navigation and in special cases of navigation
9. Apply acquired knowledge in acting during navigation under difficult navigation conditions (ice, fog, tropical cyclone, war zone...)
10. Parse and properly use relevant elements related to speed, distance, distance travelled in navigation, ship's drift and marking of maritime waterways.



1.4. Course Outline

Basic concepts in maritime surface navigation. The position of points on Earth. Orientation at sea. Basic plane angles in navigation. Earth's magnetism. Ship's magnetism. Marine magnetic compasses. Magnetic Compass Corrections. Cartographic projections. Perspective projections. Maritime charts. Navigation publications. ECDIS system. Sea Tides (Tidal wave equation, ...). Marking of maritime waterways (balisage). Theory of errors - Geometric Foundations of Ship's Position. Types and accuracy of positions in terrestrial navigation. Positioning precision. Basic elements of positioning accuracy. Positioning precision parameters. Special cases of navigation in maritime navigation . Rhumb line navigation. Great circle navigation. Combined navigation. Navigation in difficult navigation conditions. Ship speed. Distance and distance traveled. Basics of Maritime Cinematics. Drift.

1.5. Modes of Instruction

- | | |
|---|---|
| <input checked="" type="checkbox"/> Lectures X | <input type="checkbox"/> Practical work |
| <input type="checkbox"/> Seminars and workshops | <input type="checkbox"/> Multimedia and Network |
| <input checked="" type="checkbox"/> Exercises X | <input type="checkbox"/> Laboratory |
| <input type="checkbox"/> E-learning | <input type="checkbox"/> Mentorship |
| <input type="checkbox"/> Field work X (Navigation and Professional practice) | <input type="checkbox"/> Other _____ |

1.6. Comments

1.7. Student Obligations

Active attendance of classes and at least 70% of completed classes for admission to the exam or 95% of completed classes for obtaining a certificate of competency.
Successful passing of 4 tests and the final oral exam .

1.8. Assessment¹ of Learning Outcomes

Course attendance	1	Class participation		Seminar paper		Experiment	
Written exam		Oral exam	2,5	Essay		Research	
Project		Continuous Assessment	3	Presentation		Practical work	0,5
Portfolio							

1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam

60% in class and 40% in final oral exam (learning outcomes 1- 10) according to the Regulations on Studies of the University of Rijeka and the Regulations on Studies at the Faculty of Maritime Studies in Rijeka.

Continuous assessment:

- 1st test - learning outcomes 1-3 (numerical problem solving)
- 2nd test - learning outcomes 4-5 (practical maritime chart work)
- 3rd test - learning outcomes 6 (numerical problem solving)
- 4th test - learning outcomes 8 (numerical problem solving)

Final oral exam - Learning Outcomes 1 - 10 (The student orally answers the questions that are included in the 10 learning outcomes of this course. The questions are selected by random sample method. The questions are publicly posted on the personal teacher's website.

1.10. Main Reading

1. Zorović D. , Kos S., Vranić D. : Brodski magnetski kompasi – teorijske osnove , Pomorski fakultet u Rijeci , Rijeka, 1998.
2. Benković F. i grupa autora : Terestrička i elektronska navigacija , Hidrografski institut Ratne mornarice , Split ,

¹ NOTE: Name the proportion of ECTS credits for each activity so that the total number of ECTS credits is equal to the ECTS value of the course. Use empty fields for additional activities.



1986.

3. Zorović D., Kos S. : Geometrijsko plotiranje u izbjegavanju sudara na moru s riješenim zadacima , Visoka pomorska škola u Rijeci , 2001.
4. Grupa autora : Vademecum maritimus , podsjetnik pomorcima, Pomorski fakultet u Rijeci , Rijeka, 2014.
5. Kos S., Zorović D., Vranić D. : Terestrička i elektronička navigacija , Sveučilište u Rijeci, Pomorski fakultet u Rijeci, Rijeka, 2010.
6. Kos Serđo, teaching materials from the course Terrestrial navigation on the teacher's personal web site of the Faculty of Maritime Studies in Rijeka
7. Kos S. : Aproksimacija plovidbe po ortodromi, Zbornik radova Pomorskog fakulteta u Rijeci br.10, Rijeka, 1996., str. 49-55.
8. Kos S. , Zorović D. : Theoretical views on the navigational seachart , zbornik radova Pomorskog fakulteta u Rijeci br. 11, Rijeka, 1997., str. 139-146.
9. Kos S. : Calculation of Components of the Rhumb Line Intersection with the Equator , Naše more , God. 48, Br. 5-6, Dubrovnik 2001.

1.11. *Recommended Reading*

1. House D. : Navigation for Masters , Whittherby & Co. ,Ltd.,London , 1998.
2. Bowditch N.: American practical Navigator , Vol. I, DMAH/TC Washington , 1984.

1.12. *Number of Main Reading Examples*

<i>Title</i>	<i>Number of examples</i>	<i>Number of students</i>
Terestrička i elektronička navigacija	Library 5 Script shop 70	
Terrestrial Navigation Lectures on Kos Serđo's personal web site	web	
Brodski magnetski kompasi	Library 5 Script shop 70	

1.13. *Quality Assurance*

The quality of study is monitored in accordance with the ISO 9001 system and in accordance with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. Once a year, exam passing results are analysed and appropriate measures are adopted.