**3.2. Course description**

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| **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](http://www.pfri.uniri.hr/web/hr/studij_pre_N.php) | | |
| 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 |

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| **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* | | Lectures X  Seminars and workshops  Exercises X  E-learning  Field work | | | Practical work  Multimedia and Network  Laboratory  Mentorship  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. Assessment1 of Learning Outcomes* | | | | | | | | |
| Course attendance | 2 | Class participation |  | Seminar paper | | 0,5 | Experiment |  |
| Written exam |  | Oral exam |  | Essay | |  | Research |  |
| Project |  | Continuous Assessment | 1,0 | Presentation | |  | Practical work |  |
| Portfolio |  | Final exam | 1,5 |  | |  |  |  |

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.

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| *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* | | | | |
| *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.* | | | | |