**3.2. Course description**

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| **Generic information** |
| Head of Course | Dražen Žgaljić |
| Course | Logistics Engineering |
| Study Programme | Logistic and Management in Maritime Industry and Transport |
| 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 |

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| **1. GENERAL COURSE DESCRIPTION** |
| *1.1. Course Objectives*  |
|  *This subject is a survey of analytic tools, approaches, and techniques that are useful in the design and operation of logistics systems and integrated supply chains in the transportation environment. The four primary objectives of this course are:**1. Introduce students to the analytic model-based approach for analyzing logistics problems,**2. Reinforce the importance of using total supply chain costs in all analysis,**3. Provide students with techniques for measuring and managing supply chain uncertainty, and**4. Introduce the idea of using a portfolio of solutions, rather than a single approach, for real-world logistics problems.* |
| *1.2. Prerequisites for Course Registration*  |
| Essential economy, Cargo flows, English |
| *1.3. Expected Learning Outcomes*  |
| After passing the exam, the students will be able to:1. Understand and use the basic concepts of logistics, modern theoretical, and practical achievements in the field of logistics and supply chain.
2. Understand the complex and interactive flows and functions of logistics.
3. Analyze and understand the physical, information, and cash flows in logistics.
4. Acquire knowledge of the models and budgets of logistics systems.
5. Detect the anticipated logistics needs.
6. Calculation of logistics network, resource allocation, vehicle routing, logistics costs, supply management, and determination of the optimal position of logistics resource.
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| *1.4. Course Outline*  |
| Logistics. Logistic planning. Logistic strategies. Quality and sustainability in logistics. Distribution systems. Distribution channels. Transport modes analyses. Multimodal transport from Logistic view. Road transport. Railroad transport. Maritime transport. Air transport. Transport in manufacturing. Transport costs. Logistics of maritime transport. Logistic networks modelling. Document flow models. Cargo flow models. Logistic cost concept Origin inventory costs. In transit inventory costs. Safety stock costs. Perishable costs. Costs of transportation. Origin warehouse costs. Logistic cost model for maritime transport. BPD technologies in logistics. Business process reengineering. Case studies |
| *1.5. Modes of* *Instruction*  | [x] Lectures[ ]  Seminars and workshops [x]  Exercises [x]  E-learning[ ]  Field work | [ ]  Practical work [ ]  Multimedia and Network [ ]  Laboratory[ ]  Mentorship[ ]  Other \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| *1.6. Comments*  |       |
| *1.7. Student Obligations*  |
| 1. Class attendance
2. Active participation during class
3. Active participation in the e-learning system
4. Taking mid-term exams
5. Active participation during practical class (on computers)
6. Taking the final exam
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| *1.8. Assessment1 of Learning Outcomes*  |
| Course attendance | 0,5 | Class participation |     | Seminar paper |     | Experiment |     |
| Written exam | 2,5 | Oral exam |     | Essay |     | Research |     |
| Project |     | Continuous Assessment | 3 | 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.

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| *1.9. Assessment of Learning Outcomes and Examples of Evaluation during Classes and on the Final Exam*  |
| *Examples of assessing the learning outcomes:*1. *Explain the basic concepts of logistics and supply chain management.*
2. *Explain logistics flows and components.*
3. *Calculation of vehicle routing.*
4. *Using the computer program Excel, calculate the quantity of goods and the time of the order.*
5. *Predict customer needs based on historical data.*
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| *1.10. Main Reading*  |  |  |
| 1. Čišić, D.: Inženjerska logistika, on-line predavanja, http://moodle.srce.hr/2016-2017/course/view.php?id=12969
2. Taylor, G. Don: Introduction to Logistics Engineering, CRC Press, 2009
3. Čišić, D.: Zbirka zadataka iz logistike, PFRI, Rijeka, 2008
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| *1.11. Recommended Reading*  |  |  |
| 1. Ballou, R. H.: Business logistics/supply chain management, Pearsons, 2004
2. Brandimarte, P., Zotteri, G.: Introduction to Logistics Systems Management, Willey, 2013
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| *1.12. Number of Main Reading Examples*  |  |  |
| *Title*  | *Number of examples*  | *Number of students*  |
| Introduction to Logistics Engineering | 5 | 70 |
| Workbook in Logistics | 10 | 70 |
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| *1.13. Quality Assurance*  |
| The quality of study is monitored in accordance with the ISO 9001 system and with the European standards and guidelines for quality assurance carried out at the Faculty of Maritime Studies in Rijeka. |