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| Course number and name | END 451/ Logistics Management |
| Credits, contact hours, categorization of credits | 3 credits / 42 hours / Engineering topic |
| Instructor or course coordinator | Şeyda SERDAR ASAN |
| Text book and other supplemental materials | <ul style="list-style-type: none"> • Lasch, R. (2016) Strategisches und operatives Logistikmanagement: Distribution, Springer Gabler • Lasch, R. (2017): Strategisches und Operatives Logistikmanagement: Beschaffung, Springer Gabler • Lasch, R. (2018) Strategisches und operatives Logistikmanagement: Prozesse, Springer Gabler |

| Course information | |
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| Content | Definition of Logistics, Logistics Management, Supply Chain Management, Logistics Activities, Outsourcing in Logistics, Logistics Network Design, Transportation Management, Warehouse Management, Inventory Management. |
| Prerequisites | END 331 Operations Research I and END 252 Theory of Probability |
| Type | Selected elective |

| Course learning outcomes |
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| <p>At the end of this course the students will gain the following abilities:</p> <ol style="list-style-type: none"> Knowledge about logistics and supply chain concepts and interpret the importance of logistics in supply chain Knowledge about the production, distribution, procurement and reverse logistics systems Choose the most suitable mode of transport for a given product/customer Understand basic processes warehouse management Create integrated logistics solutions (inventory, warehousing and transportation), Design and optimize logistics systems |

| Student outcomes | Level of contribution |
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| SO1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. | Partial |
| SO2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors. | High |
| SO3. An ability to communicate effectively with a range of audiences. | Not applicable |
| SO4. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts. | Partial |
| SO5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives. | Not applicable |
| SO6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions. | High |
| SO7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies. | Not applicable |

| Week | Topics | Learning outcome(s) |
|-------------|-------------------------------------------------------------------------------------------------------------|----------------------------|
| 1 | Introduction to logistics | I-II |
| 2 | Distribution Logistics: Transport and transshipment problems | VI |
| 3 | Distribution Logistics: Designing the structure of physical distribution, mode selection | I-II |
| 4 | Distribution Logistics: Planning of tours and round trips, shipping route optimization | VI |
| 5 | Distribution Logistics: warehouse location theory, models and methods of optimizing location and allocation | V |
| 6 | Selected applications of distribution logistics | VI |
| 7 | Production logistics: In-house transport, warehousing, commissioning | V |
| 8 | Selected applications of production logistics | VI |
| 9 | Procurement logistics | III |
| 10 | Selected applications of procurement logistics | VI |
| 11 | Reverse Logistics | VI |
| 12 | Selected applications of reverse logistics | VI |
| 13 | Spare parts logistics, Selected applications of spare parts logistics | IV-VI |
| 14 | Trends in Logistics Management | VI |