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|  | | | | | **ECTS Course Description Form** | | | | | | | | | | | | | | | | | | | | |
| **PART I ( Senate Approval)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Offering School** | | *College of Engineering* | | | | | | | | | | | | | | | | | | | | | | | |
| **Offering Department** | | *Industrial Engineering* | | | | | | | | | | | | | | | | | | | | | | | |
| **Program(s) Offered to** | | *Industrial Engineering* | | | | | | | | | | *Mechanical Engineering* | | | | | | | | | | | | | |
| *Computer Engineering* | | | | | | | | | | *Electrical and Electronics Engineering* | | | | | | | | | | | | | |
|  | | | | | | | | | |  | | | | | | | | | | | | | |
| **Course Code** | | *IE 474* | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Name** | | *Logistics* | | | | | | | | | | | | | | | | | | | | | | | |
| **Language of Instruction** | | *English* | | | | | | | | | | | | | | | | | | | | | | | |
| **Type of Course** | | **Departmental Area Elective** | | | | | | | | | | | | | | | | | | | | | | | |
| **Level of Course** | | Undergraduate | | | | | | | | | | | | | | | | | | | | | | | |
| **Hours per Week** | | **Lecture:** 3 | | | **Laboratory:** | | | **Recitation:** | | | **Practical:** | | | **Studio:** | | | **Other:** *Field Work* | | | | | | | | |
| **ECTS Credit** | | *6* | | | | | | | | | | | | | | | | | | | | | | | |
| **Grading Mode** | | *Curve* | | | | | | | | | | | | | | | | | | | | | | | |
| **Pre-requisites** | | *-* | | | | | | | | | | | | | | | | | | | | | | | |
| **Co-requisites** | | *-* | | | | | | | | | | | | | | | | | | | | | | | |
| **Registration Restriction** | | *-* | | | | | | | | | | | | | | | | | | | | | | | |
| **Educational Objective** | | *1. Conceptualize supply chain designs, which are aligned with business models for manufacturing and service companies*  *2. Configure logistics networks and assess their performance impacts on efficiency and service levels*  *3. Manage inventory efficiently and pool inventory risks across time, products, channels, and geography.*  *4. Design supply chain contracts for effective governance of supply chain relationships.*  *5. Diagnose information integration problems across the supply chain and their consequent impacts in deploying physical and financial resources*  *6. Evaluate alternate information sharing and lead time compression strategies, and supply chain coordination structures, and their organizational and performance implications.*  *7. Align supply chain integration strategy with the uncertainty conditions of supply and demand.*  *8. Optimally position the push-pull boundary to leverage economies of scale and economies of scope.*  *9. Evaluate distribution strategies to balance responsiveness and efficiency.*  *10. Evaluate strategic alliances for logistics and retailer-supplier relationships, such as vendor managed inventory.*  *11. Design implementation processes for partnerships, such as vendor managed inventory, that involve information sharing and shared governance of processes and infrastructure.*  *12. Evaluate outsourcing decisions by applying the buy-make framework.*  *13. Manage the benefits and risks of outsourcing.*  *14. Design e-procurement strategies for a firm’s procurement portfolio of products and services.*  *15. Evaluate how the logistics process can be constrained by product design, and the implications of constraint reduction on logistics performance and market responsiveness.*  *16. Determine when and how a supplier should be integrated into the new product development process.*  *17. Determine the IT infrastructure requirements and IT integration strategy for supply chain management.*  *18. Determine the decision support system requirements for supply chain management.*  *19. Evaluate the risks and advantages of international supply chains.*  *20. Evaluate the implications of regional differences in logistics while designing international supply chains.* | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Description** | | *Supply chain operating practices and principles (i.e., the fundamentals of materials and logistics management). Studies and analyzes the dynamic nature of supply chain management for products and services and addresses the impact of the global economy on the management process. The course also develops a solid grounding in the theory of supply chain design, which includes strategies for customer service, quality, logistics, inventory management, and integrated supply chain management. Includes forecasting, postponement, sourcing (in particular, global sourcing), and network design, and illustrates these concepts through cases.* | | | | | | | | | | | | | | | | | | | | | | | |
| **Learning Outcomes** | | **LO1** | | 1. *Examine the design and performance of supply networks and processes in different business contexts.* 2. *Develop capabilities in logistics, digital coordination for supply chain integration, inventory management, risk pooling, procurement, product and process design, and international supply chain management.* | | | | | | | | | | | | | | | | | | | | |
| **LO2** | |
| **n..** | |
| **PART II ( Faculty Board Approval)** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Basic Outcomes (University-wide)** | **No.** | | **Program Outcomes** | | | | | | | | | | | | **LO1** | **LO2** | |  |  |  |  | | | | |
| **PO1** | | **Ability** to communicate effectively and write and present a report in Turkish and English. | | | | | | | | | | | | 🗸 🗸  🗸 🗸  🗸 🗸  🗸 🗸  🗸 🗸  🗸 🗸    🗸 🗸  🗸 🗸    🗸 🗸  🗸 🗸  🗸 🗸  🗸 🗸  🗸 🗸 | | | | | | | | | | |
| **PO2** | | **Ability** to work individually, and in intra-disciplinary and multi-disciplinary teams. | | | | | | | | | | | |
| **PO3** | | **Recognition** of the need for life-long learning and **ability** to access information, follow developments in science and technology, and continually reinvent oneself. | | | | | | | | | | | |
| **PO4** | | **Knowledge** of project management, risk management, innovation and change management, entrepreneurship, and sustainable development. | | | | | | | | | | | |
| **PO5** | | **Awareness** of sectors and **ability** to prepare a business plan. | | | | | | | | | | | |
| **PO6** | | **Understanding** of professional and ethical responsibility and **demonstrating** ethical behavior. | | | | | | | | | | | |
| **Faculty Specific Outcomes** | **PO7** | | Ability to develop, select and use modern techniques and tools necessary for engineering applications and ability to use information technologies effectively. | | | | | | | | | | | |
| **PO8** | | Recognition of the effects of engineering applications on health, environment and safety in the universal and societal dimensions and the problems of the time and awareness of the legal consequences of engineering solutions. | | | | | | | | | | | |
| **PO9** | | Ability to identify, define, formulate and solve complex engineering problems; and electing and applying appropriate analysis and modeling methods for this purpose. | | | | | | | | | | | |
| **Discipline Specific Outcomes (program)** | **PO10** | | Sufficient knowledge in mathematics, science and Industrial engineering; and the ability to apply theoretical and practical knowledge in these areas to model and solve engineering problems. | | | | | | | | | | | |
| **PO11** | | Ability to design a complex system, process, device or product to meet specific requirements under realistic constraints and conditions of economic, environmental, sustainability, manufacturability, ethics, health, safety, social and political issues; and the ability to apply modern design methods for this purpose. | | | | | | | | | | | |
| **PO12** | | Ability to design systems, conduct experiments, collect data, analyze and interpret results for the examination of Industrial engineering problems. | | | | | | | | | | | |
| **Specialization Specific Outcomes** | **PO N….** | | Ability to simulate a given real life problem and analyze the real problem using the simulation and recommend solutions to the real life problem | | | | | | | | | | | |
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| **PART III ( Department Board Approval)** | | | | | | | | | | | | | | | | | | | | | | | |
| **Course Subjects, Contribution of Course Subjects to Learning Outcomes, and Methods for Assessing Learning of Course Subjects** | | **Subjects** | | **Week** | | |  | | | | | | | | | **LO1** | **LO2** | |  |  |  |  | |
| **S1** | | *1* | | | *Introduction and overview* | | | | | | | | | *A1* | *A2* | |  |  |  |  | |
| **S2** | | *2* | | | *Single-warehouse* | | | | | | | | |  |  | |  |  |  |  | |
| **S3** | | *3* | | | *Single-product deterministic inventory models: Constant demand, infinite horizon* | | | | | | | | | *A1* | *A2* | |  |  |  |  | |
| **S4** | | *4* | | | *Single-warehouse, multi-product inventory model* | | | | | | | | | *A1* | *A2* | |  |  |  |  | |
| **S5** | | *5* | | | *Single-warehouse, multi-retailer models* | | | | | | | | | *A1* | *A2* | |  |  |  |  | |
| **S6** | | *6* | | | *Time-varying demand* | | | | | | | | |  |  | |  |  |  |  | |
| **S7** | | *7* | | | *Stochastic inventory models: Newsvendor models* | | | | | | | | | *A1* | *A2* | |  |  |  |  | |
| **S8** | | *8* | | | *Midterm* | | | | | | | | |  |  | |  |  |  |  | |
| **S9** | | *9* | | | *Supply contracts* | | | | | | | | |  |  | |  |  |  |  | |
| **S10** | | *10* | | | *Stochastic inventory models: Multi-period, finite horizon* | | | | | | | | |  |  | |  |  |  |  | |
| **S11** | | *11* | | | *Pricing models* | | | | | | | | |  |  | |  |  |  |  | |
|  | | **S12** | | *12* | | | *The bullwhip effect* | | | | | | | | |  |  | |  |  |  |  | |
|  | | **S13** | | *13* | | | *Green logistics* | | | | | | | | |  |  | |  |  |  |  | |
|  | | **S14** | | *14* | | | *Vendor-managed inventory* | | | | | | | | |  |  | |  |  |  |  | |
|  | | **S15** | | *15* | | | *Final Review* | | | | | | | | |  |  | |  |  |  |  | |
|  | | **S16** | | *16* | | | *Finals Week* | | | | | | | | |  |  | |  |  |  |  | |
|  | | **S17** | | *17* | | | *Finals Week* | | | | | | | | |  |  | |  |  |  |  | |
|  | |  | |  | | |  | | | | | | | | |  |  | |  |  |  |  | |
| **Assessment Methods, Weight in Course Grade, Implementation and Make-Up Rules** | | **No.** | | **Type** | | | | | | **Weight** | **Implementation Rule** | | | | | | **Make-Up Rule** | | | | | | |
| **A1** | | **Midterm Exam** | | | | | | *40%* | *In class Exam* | | | | | | *If a student misses an exam and provides an acceptable legitimate document, a make-up exam should be provided for the midterm.* | | | | | | |
| **A2** | | **Quizzes** | | | | | | *10%* | *In Class Quizzes* | | | | | |  | | | | | | |
| **A3** | | **Homework** | | | | | | *10%* | *Take Home* | | | | | | *50% deduction of points due to late submission* | | | | | | |
| **A4** | | **Final Exam** | | | | | | *40%* | *In class Exam* | | | | | |  | | | | | | |
| **A5** | | **Other** | | | | | |  |  | | | | | |  | | | | | | |
| **TOTAL** | | | | | | | | **100%** | | | | | | | | | | | | | |
| **IV. PART** | | | | | | | | | | | | | | | | | | | | | | | |
| **Evidence of Achievement of Learning Outcomes** | | *Letter grades depend on the weighted total of the*  *scores attained from homework, midterm, final, quiz*  *according to the weights given above.* | | | | | | | | | | | | | | | | | | | | | |
| **Method for Determining Letter Grade** | | *Best Result of a Curve in class or the Catalog System given below:*  *A+:100 A: 95-99 A-: 90-94*  *B+: 85-89 B: 80-84 B-: 75-79*  *C+: 70-74 C: 65-69 C-: 60-64*  *D+: 55-59 D: 50-54 F:0-50*  **Explanation** | | | | | | | | | | | | | | | | | | | | | | |
| **Teaching Methods, Student Work Load** | | **No** | | **Method** | | | | **Explanation** | | | | | | **Hours** | | | | | | | | | |
| ***Time applied by instructor*** | | | | | | | | | | | | | | | | | | | | | | |
| **1** | | **Lecture** | | | | *14 weeks 3 hours* | | | | | | *42* | | | | | | | | | |
| **2** | | **Preliminary preparation and finalizing**  **of course notes** | | | | *14 weeks 2 hours* | | | | | | *28* | | | | | | | | | |
| **3** | | **Self-Study for Mid-term exam** | | | | *1 week 15 hours* | | | | | | *15* | | | | | | | | | |
| **4** | | **Mid-term Exam** | | | | *1 week 3 hours* | | | | | | *3* | | | | | | | | | |
| **5** | | **Self-study for Final Exam** | | | | *1 week 15 hours* | | | | | | *15* | | | | | | | | | |
| **6** | | **Final Exam** | | | | *1 week 3 hours* | | | | | | *3* | | | | | | | | | |
| **7** | | **Assignment** | | | | *14 weeks 3 hours* | | | | | | *42* | | | | | | | | | |
| **8** | | **Field Work** | | | |  | | | | | |  | | | | | | | | | |
| ***Time expected to be allocated by student*** | | | | | | | | | | | | | | | | | | | | | | |
| **9** | | **Pre-class Learning of Course Material** | | | |  | | | | | |  | | | | | | | | | |
| **10** | | **Review of Course Material** | | | |  | | | | | |  | | | | | | | | | |
| **11** | | **Studio** | | | |  | | | | | |  | | | | | | | | | |
| **12** | | **Office Hour** | | | |  | | | | | |  | | | | | | | | | |
| **TOTAL** | | | | | | *148* | | | | | | | | | | | | | | | | |
| ***IV. PART*** | | | | | | | | | | | | | | | | | | | | | | | | |
| **Instructor** | | **Name** | | | | | | *Dr. Semail Ülgen* | | | | | | | | | | | | | | |
| **E-mail** | | | | | | *sulgen@antalya.ed.tr* | | | | | | | | | | | | | | | |
| **Phone Number** | | | | | | *0242 2452307* | | | | | | | | | | | | | | | |
| **Office Number** | | | | | | *A1-33* | | | | | | | | | | | | | | | |
| **Office Hours** | | | | | | *2 hours per week* | | | | | | | | | | | | | | | |
| **Course Materials** | | **Mandatory** | | | | | | *Bowersox, Donald J., David J. Class and Omar K. Helferich. Logistical Management McGraw Hill, 1996, Chapter 1 (Logistical Management)* | | | | | | | | | | | | | | | |
| **Recommended** | | | | | | *Anderson, David L, Frank F. Britt and Donovan J., Favre. “The Seven Principles of Supply Chain Management,” Supply Chain Management Review, Spring 1997* | | | | | | | | | | | | | | | |
| **Other** | | **Scholastic Honesty** | | | | | | *Violations of scholastic honesty include, but are not limited to cheating, plagiarizing, fabricating information or citations, facilitating acts of dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Any form of scholastic dishonesty is a serious academic violation and will result in a disciplinary action.* | | | | | | | | | | | | | | | |
| **Students with Disabilities** | | | | | | *Reasonable accommodations will be made for students with verifiable disabilities.* | | | | | | | | | | | | | | | |
| **Safety Issues** | | | | | | *The course does not require any special safety precautions.* | | | | | | | | | | | | | | | |
|  | | | | | | *Circumstances may arise during the course that prevents the instructor from fulfilling each and every component of this syllabus; therefore, the syllabus is subject to change.  Students will be notified prior to any changes.* | | | | | | | | | | | | | | | |
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