Güz Dönemi Yüksek Lisans Ders İçerikleri

Dersin Kodu	Dersin Adı	Kredisi			AKTS
IE 511	**Quality Assurance & Management**	**3**	**0**	**3**	**8**
The total quality management philosophies of dening, juran, and Crosby are the basis for exploring modern concepts of kaizen, quality control, taguchi, evop, etc.. The course will include learning the techniques used in tqm as well as gaining an understanding of how major corporations implement tqm programs.					
IE 501	**Production Planning, Scheduling, Inventory Contol**	**3**	**0**	**3**	**8**
An analysis of Production-Inventory systems. Discussion of commonly used planning and scheduling techniques. Introduction to use of math modeling for solution of planning and scheduling problems. Interface with quality control and information systems.					
IE 513	**Operations Management**	**3**	**0**	**3**	**8**
Models and techniques for managing inventory systems and for planning production, Topics include single item and multi-item inventory models, production planning and control and performance evaluation of manufacturing systems.					
IE 516	**Multi Attribute Decision Analysis**	**3**	**0**	**3**	**8**
This course aims to provide the students with the skills to apply the techniques of quantitative analysis in many types of organizational decision making situations. Most of the major topics in the quantitative analysis / management science field are covered by this course.					
IE 503	**Industrial System Engineering**	**3**	**0**	**3**	**8**
Application of principles of Industrial Engineering from throughout the curriculum to a design project. Written and oral reports, design reviews, final project report and presentation.					
IE 504	**Human Factors Engineering**				
Analysis and design of man-machine systems using human performance models and data. Emphasis on systems involving communication and control. Projects using digital and analog computer simulation techniques for system design.					
IE 518	**Research Methods & Ethics in Industrial Engineering**	**3**	**0**	**3**	**8**
The history of science and research design, ethical issues in scientific research, integrated framework for research, qualitative and quantitative approaches to research, experimental, correlational, and survey research, mixed method and developmental research methods.					
IE 507	**Linear Programming**	**3**	**0**	**3**	**8**
Primal-dual algorithm. Resolution of degeneracy, upper bounding. Variants of simplex method. Geometry of the simplex method, application of adjacent vertex methods in non-linear programs, fractional linear programming. Decomposition principle, generalized linear programs. Linear programming under uncertainty. Ranking algorithms, fixed charge problem. Integer programming. Combinatorial problems.					
IE 810	**M.S. Seminar**	**0**	**2**	**6**	**10**
For the seminar course, it is envisaged that the student will prepare a seminar on a topic to be determined together with his / her supervisor, present it in a suitable way within the pre-defined period and submit the seminar report to his / her supervisor.					
IE 820	**M.S. Thesis**	**0**	**1**	**0**	**30**
Students who have successfully completed their credit courses and seminar course are the work of the department and the thesis supervisor.					

Bahar Dönemi Yüksek lisans Ders İçerikleri

Dersin Kodu	Dersin Adı	Kredisi			AKTS
IE 518	**Research Methods & Ethics in Industrial Engineering**	**3**	**0**	**3**	**8**
The history of science and research design, ethical issues in scientific research, integrated framework for research, qualitative and quantitative approaches to research, experimental, correlational, and survey research, mixed method and developmental research methods.					
IE 502	**System Engineering II**	**3**	**0**	**3**	**8**
The complexities of systems, design, sustainment, and modernization in the context of systems engineering.					
IE 510	**Supply Chain Management**	**3**	**0**	**3**	**8**
The course has strong emphasis on providing analytical skills, critical thinking, and managerial insights. The topics we will cover in this course could be grouped into four main modules: • Supply chain strategy: strategic fit, network design, global dual sourcing • Managing supply chain risks: risk-sharing contracts, risk pooling, risk hedging • Coordinating supply chain: sales & operations planning, bullwhip effect • Guest lecture: there will be one or two guest lectures and the topics are to be determined.					
IE 508	**Advanced Linear Programming**	**3**	**0**	**3**	**8**
Modeling, theorems of alternatives, convex sets, convex and generalized convex functions, convex inequality systems, necessary and sufficient optimality conditions, duality theory, algorithms for quadratic programming, linear complementary problems and fixed point computing. Methods of direct search, Newton and Quasi-Newton, gradient projection, feasible direction, reduced gradient; solution methods for nonlinear equations.					
IE 506	**Engineering Economy & Investment Analysis**	**3**	**0**	**3**	**8**
This course is mainly concerned with economic analysis for engineering and managerial decision making. It consists of techniques for evaluating the worth of prospective projects, investment opportunities and design choices.					
IE 504	**Human Factors in System Design**	**3**	**0**	**3**	**8**
Introduction to problems of the systems development cycle, including human-machine function allocation, military specifications, display-control compatibility, the personnel sub-system concept and maintainability design. Detailed treatment given to people as information processing mechanisms.					
IE 516	**Multi-Attribute Decision Analysis**	**3**	**0**	**3**	**8**
Specification of attributes/criteria/objectives for complex decisions. Determination of alternatives, attribute weights and decision-making process. Graphical and weighted evaluation techniques. Multi-attribute utility, multi-objective/goal programming and analytic hierarchy process methodologies. Computer applications and case studies.					
IE 810	**M.S. Seminar**	**0**	**2**	**6**	**10**
For the seminar course, it is envisaged that the student will prepare a seminar on a topic to be determined together with his / her supervisor, present it in a suitable way within the pre-defined period and submit the seminar report to his / her supervisor.					
IE 820	**M.S. Thesis**	**0**	**1**	**0**	**30**
Students who have successfully completed their credit courses and seminar course are the work of the department and the thesis supervisor.					