

Content

Course Code	Course Name	Semester	Theory	Practice	Lab	Credit	ECTS
ML517	Quantitative Methods	1	3	0	0	3	6

Prerequisites	
Admission Requirements	

Language of Instruction	Turkish
Course Type	Compulsory
Course Level	Masters Degree
Objective	This course aims to teach the basic concepts, principles and applications related to research methodology and techniques of digital logistics management.
Content	1) Research project, organization and analysis of data. Measures of central tendency and dispersion. 2) Probability and laws of probability. Elementary probability distributions of discrete and continuous random variables. 3) The sampling and statistical inference methods (Estimating the average and the proportion of a population). 4) Parametric hypothesis tests (tests of the mean and the proportion of a population). 5) Parametric hypothesis tests - Comparison of means of two or more populations. Analysis of variance. 6) Parametric hypothesis tests - Comparison of proportions of two populations. Parametric hypothesis tests (Comparison of proportions of multiple populations, Chi2 tests for homogeneity and conformity). 7) Regression analysis - Simple linear regression analysis, multiple regression analysis on Excel and SPSS. 8) Logistics strategy and planning. Forecasting logistics requirements. 9) Inventory policy decisions. Methods and models of inventory management. 10) Purchasing decisions and order quantity. 11) Linear programming and resolution of models with Simplexe algorithm. Resolution of integer and binary LP problems in Excel. 12) Transportation problem and decisions.
References	Daniel Wayne W. & Terrell James C., Business Statistics, 5. edition, Houghton Mifflin, USA, 1989. Kobu, Bülent. Üretim Yönetimi, Genişletilmiş ve güncelleştirilmiş 11. baskı. İstanbul, Avcıol Basım Yayın, 2003. Newbold, Paul, Statistics for Business and Economics, 7. edition, Pearsons Education, NJ 2010. Newbold, Paul, İşletme ve İktisat için İstatistik, Çeviren Ümit Şenesen, Literatür Yayıncılık. Orhunbilge, Prof. Dr. Neyran, Örneklem Yöntemleri ve Hipotez Testleri, İ.Ü.İşletme Fak. Yayınları Avcıol Basım Yayın, 2. Baskı, İstanbul 2000. Orhunbilge, Prof. Dr. Neyran, Uygulamalı Regresyon ve Korelasyon Analizi, 2. B., İ.Ü.İşletme Fak. Yayınları, İ.Ü. Basım ve Yayınevi Md., İstanbul 2002 Ronald, H Ballou, Business Logistics Management, Prentice-Hall Inc., 3rd Edition, NY 1992. Ronald, H Ballou, Business Logistics/Supply Chain Management, Pearson Prentice Hall Inc., 5th Edition, NJ 2004. Stock, James R. ve Douglas M. Lambert. Strategic Logistics Management, 4. b. Singapore, Mc Graw-Hill, 2001. Zipkin, Paul H., Foundations of Inventory Management, USA: Mc Graw-Hill, 2000.

Theory Topics

Week	Weekly Contents
1	Introduction to logistics management, research project, organization and analysis of data. Measures of central tendency and dispersion.
2	Probability and laws of probability. Elementary probability distributions of discrete and continuous random variables.
3	The sampling and statistical inference methods (Estimating the average and the proportion of a population).
4	Parametric hypothesis tests (tests of the mean and the proportion of a population).
5	Parametric hypothesis tests - Comparison of means of two or more populations. Analysis of variance.
6	Parametric hypothesis tests - Comparison of proportions of two populations. Parametric hypothesis tests (Comparison of proportions of multiple populations, Chi2 tests for homogeneity and conformity).
7	Regression analysis - Simple linear regression analysis, multiple regression analysis on Excel and SPSS.
8	Mid term.
9	Logistics strategy and planning. Forecasting logistics requirements.
10	Inventory policy decisions. Methods and models of inventory management.
11	Purchasing decisions and order quantity.
12	Linear programming and resolution of models with Simplex algorithm. Resolution of integer and binary LP problems in Excel.
13	Transportation problem and decisions.
14	Transportation problem and decisions.