

Department of Mathematics

Course Profile

Course Number : MATH 232	Course Title : Statistics II
Required / Elective : Elective	Pre-requisite : MATH 231
Catalog Description: Two-sample hypothesis testing; analysis of variance; linear regression and correlation; multiple regression and correlation analysis; chi-square applications for nominal data; timeseries analysis.	Textbook / Required Material : Douglas A. Lind, William G. Marchal, Samuel A. Wathen, <i>Basic Statistics for Business and Economics</i> , McGraw-Hill, New York, 2008 (6 th Edition)
Course Structure / Schedule: (3+0+0) 3 / 5 ECTS	
Extended Description : The course is the continuation of MATH231. To this end, the course covers conceptual as well as practical skills, including: <ul style="list-style-type: none"> ● Two-sample tests of hypothesis ● Analysis of variance (ANOVA) ● Linear regression and correlation analysis ● Multiple regression and correlation analysis ● Chi-square applications 	
Design content: None	Computer usage: None
Course Outcomes: [relevant program outcomes in brackets]: By the end of this course, students will be able to: <ol style="list-style-type: none"> 1. demonstrate an understanding of two-sample hypothesis testing [1,2,6] 2. compute and interpret correlation between two variables [1] 3. distinguish between one-sample and two-sample tests of hypothesis [1,2,6] 4. interpret and use a linear and multiple regression model for purposes of description and prediction [2] 5. recognize the basic logic of ANOVA [1,2] 6. interpret and use ANOVA tables to draw conclusions about populations [2] 7. interpret and use the chi-square goodness of fit test to ascertain whether the data from a process fit a specified distribution [2] 8. demonstrate the ability to apply appropriate statistical techniques to analyze data [2,7] <p>[1] demonstrate the ability of solving problems by using techniques from calculus, linear algebra, differential equations, probability and statistics, [2] demonstrate knowledge of mathematics to construct, analyze and interpret mathematical models, [6] have a basic knowledge of the main fields of mathematics, including analysis, algebra, differential equations, differential geometry, [7] have an ability to function both independently and as a member of a multidisciplinary team,</p>	

Recommended reading Irwin Miller, Marylees Miller, *Mathematical Statistics*, Houghton Mifflin Company, 2000 (6th Edition)

Teaching methods: Lectures.

Assessment methods: Midterm exams, final exam.

Student workload:

Preparatory reading	50 hrs
Lectures, workshop, discussions	50 hrs
Homework	20 hrs
Examinations	5 hrs
TOTAL	125 hrs

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