



Course Syllabus

Course Code	Course Title	ECTS Credits
MATH-426	Linear Models II	6
Prerequisites	Department	Semester
MATH-326	Computer Science	Fall/ Spring
Type of Course	Field	Language of Instruction
Elective	Mathematics	English
Level of Course	Lecturer(s)	Year of Study
1 st Cycle	Dr Stavros Pouloukas	4 th
Mode of Delivery	Work Placement	Corequisites
Face to face	N/A	None

Course Objectives:

The main objectives of the course are to:

- Provide the students with in-depth knowledge of the multiple linear regression model.
- Familiarize the students with matrix approach to multiple regression models.
- Familiarize the students with extra sum of squares.
- Summarize tests concerning regression coefficients.
- Provide the students with knowledge in coefficients of partial determination.
- Provide the students with knowledge in building a regression model.
- Familiarize the students with diagnostics and remedial measures in multiple regression models.
- Acquaint the students with computer software in multiple regression analysis.

Learning Outcomes:

After completion of the course students are expected to be able to:

- Develop the multiple linear regression model.
- Develop the skills to design linear models with extra sum of squares.

- Develop valid designs of multiple linear models.
- Develop the skills to build a multiple regression model..
- Employ techniques, skills and modern statistical tools required to solve real-life problems in multiple regression analysis.

Course Content:

- The multiple linear regression model.
- General linear regression models in matrix terms.
- Extra Sum of Squares.
- The model building process in multiple linear models.
- Diagnostics in multiple regression models.
- Remedial measures and validation.

Learning Activities and Teaching Methods:

Lectures, Handouts, Assignments and In-class Exercises.

Assessment Methods:

Final Examination, Midterm Examinations, Assignments and Participation

Required Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Applied Linear Statistical Models	M. Kutner, C. Nachtsheim, J. Neter, W. Li	McGraw-Hill/Irwin	2004	978-0073108742

Recommended Textbooks / Readings:

Title	Author(s)	Publisher	Year	ISBN
Linear Statistical Models: An Applied Approach	B.L. Bowerman, R. O'Connell	Duxbury Press	2000	978-0534380182
Applied Regression Analysis and Generalized Linear Models	J. Fox	Sage Publications	2016	978-1452205663