Course Code	Course Title	ECTS Credits
MATH-422	Applied Multivariate Analysis	6
Department	**Semester**	**Prerequisites**
Mathematics	Fall, Spring	MATH-325, MATH-326
Type of Course	**Field**	**Language of Instruction**
Required	Mathematics	English
Level of Course	**Year of Study**	**Lecturer(s)**
1st Cycle	3rd	Dr Haritini Tsangari
Mode of Delivery	**Work Placement**	**Co-requisites**
Face-to-face	N/A	None

Objectives of the Course:

The main objectives of the course are to:

- cover various multivariate statistical methods
- provide students with the necessary skills to identify the best method according to their data and research aims
- provide students with the necessary skills to use the appropriate computer software (e.g. SPSS) to analyze real data with the corresponding multivariate method

Learning Outcomes:

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

1. Use multiple regression analysis
2. Use multiple logistic regression
3. Perform data reduction with principal components and factor analysis
4. Perform data reduction with cluster analysis
5. Use ANOVA and MANOVA
6. Use the SPSS package for analyzing real data.
7. Concisely summarize and explain their results from data analysis

Course Contents:

1. Multiple regression analysis
2. Multiple Logistic Regression
3. Principal Components Analysis and Factor Analysis
4. ANOVA and Multivariate ANOVA (MAVONA)
5. ANCOVA and multivariate ANCOVA (MANCOVA)
6. Cluster analysis.

Learning Activities and Teaching Methods:

Lectures, Practical Exercises and Assignments.

Assessment Methods:

Homework, Mid-Term, Final Exam.

Required Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Johnson, R.A. and Wichern, D.W.	Applied Multivariate Statistical Analysis	Pearson	2008	978-0131877153

Recommended Textbooks/Reading:

Authors	Title	Publisher	Year	ISBN
Morrison, D.F.	Multivariate statistical methods	Cengage Learning, Duxbury Advanced Series	2004	978-0534387785
Hair, J.F., Black, W.C., Babin, B.J., and Anderson, R.E.	Multivariate Data Analysis	Prentice Hall	2009	978-0138132637