

<b>UNIVERSITY OF THESSALY</b>
<b>MSc Course “EXERCISE &amp; HEALTH”</b>
<b>INFORMATION ABOUT THE MODULE</b>

1. **TITLE OF MODULE:** Quantitative data analysis
2. **CODE OF MODULE:** ...
3. **MAIN LECTURER:** Papaioannou Athanasios e-mail: sakispap@otenet.gr
4. **OTHER LECTURERS:** Nikos Zourbanos
5. **WAY OF CONDUCT:** 6 classes using PC
6. **IDENTIFICATION OF MODULE:** Module of the 3<sup>rd</sup> semester

**Key-words:**

Research methods, validity, reliability, Two way-ANOVA, repeated measures, regression analysis, MANOVA

**7. PURPOSES & GOALS**

At the end of this module students should:

- Understand the basic concepts of statistics
- Know what is the purpose of each statistical analysis in which Two or more dependent variables are used
- Be able to develop research hypotheses involving two independent variables and investigate them with the existing statistical techniques
- Understand the concepts of Validity and Reliability
- Plan a small research project and investigate the validity and reliability of the research methods using statistics
- Investigate the above using statistical packages and PC

**8. TEACHING METHODS**

Lectures, labs, presentations, research project

**9. TIMETABLE & PLANNING**

A/A	Lecturer	Topic
1	Zourbanos Nikos	Differences in one dependent variable between three or more than three groups
2	Zourbanos Nikos	Repeated Measures in one dependent variable.
3	Zourbanos Nikos	Differences in two dependent variables and one independent variable
4	Zourbanos Nikos	Prediction of scores of one dependent variable
5	Zourbanos Nikos	Reliability
6	Zourbanos Nikos	Validity

**10. EVALUATION:**

- Participation in the project (15%)
- Essay based on the data of the project (25%)
- Final exams using statistics in PC (60%)

**11. LITERATURE**

1. Ferguson, G.A., & Takane, Y. (1989). *Statistical analysis in psychology and education*. NY: McGraw-Hill Publ.

2. Salkind, N.J. (2<sup>nd</sup> Edition, 2004). *Statistics for people who (think they) hate statistics*. Thousand Oak: Sage.
3. Foster, J.J. (1998). *Data analysis using SPSS for windows*. Thousand Oak: Sage.
4. Ntoumanis, N. (2001). *A step-by-step guide to SPSS for sport and exercise studies*. Routledge: London.

## OUTLINE

### Lecture 1

Title	Content	Key-words
One dependent variable and two or more than two independent discrete variables	Two Way Analysis of Variance	Two-way ANOVA

### Lecture 2

Title	Content	Key-words
Repeated Measures in one dependent variable.	Repeated measures Analysis of Variance	Repeated measures ANOVA

### Lecture 3

Title	Content	Key-words
Differences in two dependent variables and one independent variable	Manova	Manova

### Lecture 4

Title	Content	Key-words
Prediction of scores of one dependent variable	Simple Regression Analysis	Simple Regression Analysis

### Lecture 5

Title	Content	Key-words
Reliability	Definitions and tests to examine reliability	Reliability

### Lecture 6

Title	Content	Key-words
Validity	Definitions and tests to examine validity	Validity

### **Project**

1. Data Collection, statistical analysis & tests of reliability and validity: combination of group and individual work which finishes at the 6<sup>th</sup> lecture.