CONDUCTING QUANTITATIVE EDUCATIONAL RESEARCH

1. GENERAL INFORMATION

SCHOOL	SCHOOL OF HUMANITIES AND SOCIAL SCIENCES		
DEPARTMENT	PEDAGOGICAL DEPARTMENT OF PRIMARY EDUCATION		
LEVEL OF STUDY	POST-GRADUATE		
COURCE CODE	QUANT LAB	**SEMESTER**	**3**
COURSE TITLE	**Conducting Quantitative Educational Research**		

INDEPENDENT TEACHING ACTIVITIES	**WEEKLY TEACHING HOURS**	**ECTS**
Total	**3**	**12,5**

COURSE TYPE:	Mandatory upon selection
PREREQUISITE COURSES:	YES (AY3)
LANGUAGE OF INSTRUCTION AND EVALUATION	Greek
COURSE OFFERED TO ERASMUS STUDENTS	NO
COURSE WEBSITE (URL)	https://eclass.uth.gr/

2. LEARNING OUTCOMES

Learning Outcomes
The purpose of the course is to gain experience in conducting and writing a quantitative research study at the level of a master's thesis. This will be achieved through the conduct of a specific, guided, quantitative, collective research. This research will be integrated within the framework of a mixed-methods study, on a subject chosen by the coordinating committee of the postgraduate program. Upon completion of the course, students are expected to: Have internalized the strategies for identifying, summarizing, and organizing the appropriate literature to lead to a research problem that can be studied with a quantitative approach Be able to focus on specific hypotheses, based on theoretical models and previous research, and formulate them accurately Be able to decide and justify the method of sample selection and material collection that is feasible and effective for testing the research hypotheses and generalizing the findings to the study population

Be able to identify and adapt measurement scales that are appropriate for the concepts being studied and to draft the final questionnaire

Be able to choose the data analysis strategy and the appropriate statistical methods and execute them to arrive at the findings

Be able to connect the findings of the analysis with previous research and theory, identify the contribution of the research as well as its limitations

Have become familiar with the way of writing a quantitative scientific research (structure, coherence, style and objectivity of the discourse, citations and references of the literature, research ethics).

General Competencies

Development of analytical skills and technical abilities for conducting independent quantitative research.

3. COURSE CONTENT

The process of scientific research: deductive and inductive reasoning.

The main approaches: Quantitative, Qualitative, and Mixed research.

Positioning the topic of quantitative research within the context of existing literature: Procedures for Searching, Identifying, and Organizing the literature.

Theoretical framework and previous research: constructing a thematic map of the literature and identifying gaps (unanswered research questions)

Focusing on a research problem and documenting the necessity of investigating it.

Writing the Theoretical part: Writing the Introduction, structuring chapters, citation and reference system (APA style).

Formulating the purpose and research hypotheses.

Research design: selecting the population, sampling process, and data collection method, procedures for searching measurement scales of the involved concepts, criteria for selecting appropriate scales, adapting and describing them.

Ethical issues – avoiding plagiarism.

Constructing the questionnaire and the related data file in SPSS.

Preliminary data file processing procedures: checks and recoding, reliability and structure checks of the scales (factor analysis), calculating scale and subscale scores, checking the normality of distributions. Descriptive statistical analysis and writing it up (constructing relevant tables and charts – commentary).

Inferential statistical analysis: selecting methods a) for testing simple hypotheses (between two variables), b) for testing complex hypotheses (analysis of variance with two or more factors, multiple regression methods, and other multivariate methods).

Writing the results (constructing relevant tables and charts – commentary).

Discussing the findings (organizing findings, structuring the relevant chapter, commentary within the context of theory and previous research, limitations, future research).

4. TEACHING and LEARNING METHODS - EVALUATION

<table>
<tr><td>INSTRUCTION METHOD</td><td>Face-to-face and distance learning.</td></tr>
<tr><td>ICT USE</td><td>Slide presentations, use of the asynchronous learning platform for posting course materials, student assignments, and communication between instructors and students. Technologies are also used a) for searching information from electronic bibliographic sources and b) for utilizing specialized software for data processing and statistical analysis (SPSS).</td></tr>
<tr><td>ORGANIZATION OF TEACHING AND ACTIVITIES</td><td>
<table>
<tr><th>Activity</th><th>Semester Workload (hours).</th></tr>
<tr><td>Lectures</td><td>15</td></tr>
<tr><td>Interactive activities/Laboratory exercises</td><td>18</td></tr>
<tr><td>Presentation of assignments</td><td>3</td></tr>
<tr><td>Study during the semester</td><td>120</td></tr>
<tr><td>Individual and Group assignments</td><td>160</td></tr>
<tr><td>Course total</td><td>316</td></tr>
</table>
</td></tr>
<tr><td>STUDENT EVALUATION</td><td>The course requires a) the active participation of students in interactive activities and laboratory exercises aimed at consolidating the processes of conducting quantitative research and b) the completion of assignments assigned to them to contribute to the implementation of the specific collective research. The assignments (4 for each student) are assigned so that all students undertake, individually or in small groups, specific tasks at all stages of the research (literature review, writing the research design, data collection and analysis, writing results and drawing conclusions). The evaluation of students is based on the effectiveness of their</td></tr>
</table>

	participation in class activities (25%) as well as their performance in the assignments (75%).

5. RECOMMENDED BIBLIOGRAPHY

Cohen Louis, Manion Lawrence, Morrison Keith (2008). *Μεθοδολογία Εκπαιδευτικής Έρευνας*. Αθήνα: Μεταίχμιο.

Creswell John (2016). *Η έρευνα στην εκπαίδευση*. Εκδοτικός Όμιλος Ιων.

Creswell J.W. & Guetterman T.C. (2020). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research.* 6th Edition. Pearson

Howitt, Dennis & Cramer, Duncan (2010). *Στατιστική με το SPSS 16* (με εφαρμογές στην Ψυχολογία και τις Κοινωνικές Επιστήμες). Αθήνα: Εκδόσεις Κλειδάριθμος.

Field Andy P. (2004). *Discovering statistics using SPSS for Windows: advanced techniques for beginners*. London: SAGE.

Johnson Burke; Christensen, Larry (2020). *Educational Research: Quantitative, Qualitative, and Mixed Approaches*. Sage Publications.

Mertens Donna (2005). Research and Evaluation in Education and Psychology. Athens: Metaichmio.

Robson Colin (2007). Real World Research. Athens: Gutenberg. (In Greek)

Yalamas Vasilis (2005). Statistical Techniques and Applications in Educational Sciences. Athens: Patakis Publications. (In Greek)

Gnardellis Charalambos (2009). Data Analysis with PASW Statistics 17.0. Athens: Papazisis Publications. (In Greek)

Dimitriadis Efstathios (2010). Statistical Applications with SPSS 17.0 and LISREL 8.7. Athens: Kritiki Publications. (In Greek)

Kyriazi Nota (2011). Sociological Research: Critical review of methods and techniques. Athens: Pedio.

Roussos Petros, Tsaousis Giannis (2002). Applied Statistics in Social Sciences. Athens: Ellinika Grammata. (In Greek)

Sarafidou, Yasemi-Olga (2011). Integration of Quantitative and Qualitative Approaches: Empirical Research. Athens: Gutenberg. (In Greek)