

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF INFORMATION SCIENCES & TECHNOLOGY		
ACADEMIC UNIT	DEPARTMENT OF STATISTICS		
LEVEL OF STUDIES	1st Cycle (UNDERGRADUATE)		
COURSE CODE	6134	SEMESTER	4th
COURSE TITLE	Demographic Statistics		
INDEPENDENT TEACHING ACTIVITIES		WEEKLY TEACHING HOURS	CREDITS
Lectures		4	7
Workshops			
Labs			
COURSE TYPE	Elective - Background		
PREREQUISITE COURSES:	None.		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)	https://eclass.aueb.gr/courses/STAT393/		

(2) LEARNING OUTCOMES

Learning outcomes
Upon successful completion of the course, students will be able to: • calculate and interpret basic demographic measures and indicators of population change, taking into account the appropriate population at risk and exposure, • understand the effect of age structure on demographic measures and apply basic standardization methods for population comparisons, • construct and interpret cohort and period life tables and distinguish between their different demographic interpretations, • understand and interpret basic parametric models of survival and mortality, • calculate and interpret basic measures of fertility and reproduction, • analyze the age structure of a population and apply basic population projection methods, understanding their underlying assumptions and limitations.
General Competences
• Search, analysis and synthesis of data and information, using the necessary technologies • Autonomous work • Work in an interdisciplinary environment • Exercise of criticism and self-criticism

- Promotion of free, creative and inductive thinking

(3) SYLLABUS

Basic concepts of Demographic Statistics: population change, demographic events, person-years, crude demographic rates, and the basic population balancing equation. The age dimension of demographic rates and the effect of population age structure on population comparisons. Direct and indirect mortality standardization.

Cohort and period life tables: construction, basic life-table functions, and demographic interpretation. Parametric survival and mortality models and their comparison with the life-table approach.

Fertility and reproduction: crude and age-specific fertility measures, total fertility rate, and basic measures of reproduction.

Population age structure and interpretation of population pyramids. Population estimation, forecasting, and projection: linear and exponential growth models, interpolation and extrapolation, and basic principles of the cohort-component method.

The main methods are illustrated and applied to real and simulated demographic data, using R where appropriate.

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	Face-to-face	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY	YES. Use of eClass for the provision of teaching material and code, and use of R for the presentation and analysis of real and simulated demographic data.	
TEACHING METHODS	Activity	Semester workload
	Lectures	52
	Study and analysis of bibliography	10
	Project preparation	20
	Assignment / project writing	20
	Independent study	73
	Course total	175
STUDENT PERFORMANCE EVALUATION	Student assessment is based on: • Written examination at the end of the semester: 80% • Project: 20% The project contributes to the final grade provided that the written examination grade is at least 5/10 and the project grade is higher than the written examination grade. In this case, the final grade is calculated as a weighted average of the two components. Relevant information and instructions are available through eClass.	

(5) ATTACHED BIBLIOGRAPHY

- Papadakis, M. and Tsimbos, C. (2004). Demografiki Analysi: Arches, Methodoi, Ypodeigmata [Demographic Analysis: Principles, Methods and Models]. Stamoulis Publications.
- Kotzamanis, V. (2015). Stoiceia Dimografias [Elements of Demography]. University of Thessaly Press.
- Kostaki, A. Demometria. Lecture notes.
- Instructor's notes, available through eClass.
- Preston, S. H., Heuveline, P. and Guillot, M. Demography: Measuring and Modeling Population Processes. Blackwell Publishing.