

Subject card

Subject name and code	Diagnosing Population Phenomena, PG_00156752						
Field of study	Informatics and Econometrics						
Date of commencement of studies	October 2024		Academic year of realisation of subject		2025/2026		
Education level	Bachelor's studies		Subject group		Optional subject group Subject group related to scientific research in the field of study		
Mode of study	full-time studies		Mode of delivery		at the university		
Year of study	2		Language of instruction		Polish		
Semester of study	4		ECTS credits		7.0		
Learning profile	academic		Assessment form				
Conducting unit	Department of Statistics -> Faculty of Management -> Rector						
Name and surname of lecturer (lecturers)	Subject supervisor		dr hab. Beata Jackowska				
	Teachers						
Lesson types	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	30.0	30.0	15.0	0.0	0.0	75
	E-learning hours included: 0.0						
Learning activity and number of study hours	Learning activity	Participation in didactic classes included in study plan		Participation in consultation hours		Self-study	SUM
	Number of study hours	75		30.0		70.0	175
Subject objectives	1. Familiarizing students with the basic concepts and methods of demography and presenting contemporary population problems in Poland and the world. 2. Showing the essence and social determinants and consequences of demographic processes, presenting the socio-demographic structure of the population and selected issues of population policy. 3. Preparing for independent assessment of the demographic situation and demographic processes. 4. Learning the principles of constructing life tables based on longitudinal and cross-sectional data; acquiring the skills to independent construction of tables and their interpretation. 5. Familiarizing students with data sources on social phenomena and processes, methods of their quantitative analysis and interpretation of the obtained results. 6. Providing information on aspects of social changes taking place in Poland and Europe.						

Learning outcomes	Course outcome	Subject outcome	Method of verification
	[liEL3_K02] The student can communicate with the public on computer science and econometrics topics in and outside the workplace, communicate his knowledge and share his skills through various media.	The student is able to present the studied issue in a way that is understandable to others, independently formulate conclusions based on statistical analyses.	[SK2] presentation/project/paper/report [SK3] text preparation/written work [SK4] test/exam - oral or written
	[liEL3_U02] The student is able to acquire basic information about economic processes and phenomena by direct observation, planned experiment or database queries, and collect and process it using modern information technology tools.	The student is able to obtain basic information about population and social processes and phenomena, is able to use databases. The student is able to make a statistical description of basic demographic and social phenomena, formulate and verify simple hypotheses regarding their formation, is able to construct simple demographic forecasts. The student is able to obtain data on mortality, construct and interpret life tables. The student is able to prepare a written work on the assessment of demographic and social situations and processes.	[SU2] presentation/project/paper/report [SU3] text preparation/written work [SU4] test/exam - oral or written
	[liEL3_W04] The student has advanced knowledge of mathematical, statistical, econometric and computer methods of obtaining, processing and analysing data depicting the functioning and development of the national economy and its elements, as well as the phenomena and processes occurring in their environment.	The student understands contemporary population problems in Poland and the world and has knowledge about the social transformations taking place in Poland and Europe. The student knows the basic statistical and demographic methods that enable the acquisition, processing and analysis of population data. The student knows the types of life tables, their interpretation and methods of constructing life tables.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report [SW3] text preparation/written work
	[liEL3_K01] The student understands the need to constantly supplement and deepen acquired knowledge; is open to new ideas and teaching methods.	The student understands the need to constantly supplement and deepen acquired knowledge in the field of population and social phenomena and processes; is prepared for systematic study of specialized scientific and popular science literature; is aware of the need to conduct observations and research.	[SK2] presentation/project/paper/report [SK3] text preparation/written work
	[liEL3_W05] The student has advanced knowledge of the sources of socio-economic data, their databases and ways of creating them.	The student has basic knowledge about the records and statistical information system about the population, sources and databases regarding demographic and social phenomena and processes.	[SW4] test/exam - oral or written [SW2] presentation/project/paper/report [SW3] text preparation/written work
	[liEL3_K03] The student can work in, co-create and manage a team; adapts his/her behavior and conduct to his/her role in it; is ready to take responsibility for the team and bear the consequences; understands the necessity of regularity and consistency in action; is open to other team members and critical of himself.	The student is able to work in a team to obtain data, analyze data and present the results of research on demographic and social phenomena.	[SK2] presentation/project/paper/report [SK3] text preparation/written work

Subject contents	Demography 1. Demography as a science of population development. Demographic theories. Records and statistical information system about the population. Research methods used in demography. 2. The world's population: the state and dynamics of change. Population density. Settlement barriers. Polish population: state and dynamics of change. 3. Population structure by sex and age. Factors influencing the population structure by sex and age. The process of demographic aging of the population: method of measurement and demographic and socio-economic consequences. 4. Socio-occupational structure of the population. 5. Population processes and its elements. Measures of marriage, divorce, fertility, mortality and natural increase. Fertility and reproduction. Crude, specific, standardized measures. Demographic and non-demographic factors influencing population processes in Poland. 6. Population migration: types and methods of measurement. The role of migration in socio-economic development. 7. Methods of research and analysis of the health status of the population. 8. Population projection. Types of projections and their functions. Projection methods. 9. Selected demographic problems of the contemporary world. Life Tables 1. Longitudinal and cross-sectional analysis of mortality, the Lexis diagram. Sources of mortality data. 2. Demographic life tables: types of tables, table functions, interpretation of table functions and relations between them, properties of table functions. 3. Principles of constructing life tables, construction of life tables for males and females separately and combined. 4. Graduation of life tables (moving-weighted-average, interpolation and analytical methods), assessment of smoothness and fit of the graduated results. 5. Parametric models of mortality (analytical laws of mortality), fitting models and their extrapolation to the oldest ages. Social statistics 1. Research area of social statistics. Data sources in social statistics. Basic social research in Poland and the EU. 2. Households and their classification. 3. Household income and its components. Equivalence scales. Methods of analysis of household income distribution. 4. Quality of life and standard of living ways of defining and measuring, spatial differentiation and changes over time. 5. Poverty and social exclusion - methods of identifying the poor and socially excluded. Measurement of poverty and social exclusion. The scope and depth of household poverty - spatial differentiation and changes over time.		
Prerequisites and co-requisites	Knowledge of descriptive statistics in the scope of the "Statistics I" course program from the 1st semester of studies		
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Passing the tutorial and the laboratory based on partial written colloquia or partial projects in teams.	51.0%	50.0%
	Passing the lecture based on a written exam. The condition for admission to the exam is obtaining a positive grade in the tutorial and the laboratory.	51.0%	50.0%
Recommended reading	Basic literature 1. Balicki A., <i>Analiza przeżycia i tablice wymieralności</i>, PWE, Warszawa 2006 2. Bednarczyk T. H., Bielawska K., Jackowska B., Wycinka E., <i>Ekonomiczne i demograficzne uwarunkowania funkcjonowania i rozwoju ubezpieczeń</i>, Wyd. UG, Gdańsk 2019 (rozdz. 5-7) 3. Holzer J.Z., <i>Demografia</i>, PWE, Warszawa 2006 4. Okólski M., Fihel A., <i>Demografia. współczesne zjawiska i teorie</i>, Wydaw. Naukowe Scholar, Warszawa 2012 5. Panek T., <i>Statystyka społeczna</i>, Polskie Wydawnictwo Ekonomiczne, Warszawa 2020		

	Supplementary literature	1. Brown R. L., <i>Introduction to the Mathematics of Demography</i>, ACTEX Publications, Winsted, Connecticut 1993 2. Jackowska B., <i>Modele dalszego trwania życia oraz ich zastosowania w przypadku osób starszych</i>, Wyd. UG, Gdańsk 2013 3. Wołoszyn A., <i>Nierówności dochodowe gospodarstw domowych w Polsce i ich uwarunkowania społeczno-ekonomiczne</i>, PWN, Warszawa 2020 4. Ślaby T., <i>Konsumpcja. Eseje statystyczne</i>, Difin, Warszawa 2006 5. Leszczyński A., <i>Eksperymenty na biednych. Polityczny, moralny i ekonomiczny spór o to, jak pomagać skutecznie</i>, Wydawnictwo Krytyki Politycznej, Warszawa 2016 6. Matuszczyk K., Duszczyk M., Lesińska M., <i>Upolitycznienie problemu starzenia się społeczeństwa w Polsce</i>, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2019 7. Fihel A. (red.), <i>Starzenie się społeczeństwa a polityka fiskalna i migracyjna</i>, Wydawnictwo Uniwersytetu Warszawskiego, Warszawa 2017
	eResources addresses	
Example issues/ example questions/ tasks being completed		
Work placement	Not applicable	

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