University of Gdańsk

Subject card

Subject name and code	Sampling Methods, PG_00177502		
Field of study	Informatics and Econometrics		
Date of commencement of studies	October 2026	Academic year of realisation of subject	2026/2027
Education level	Master's studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	2	ECTS credits	4.0
Learning profile	academic	Assessment form	exam
Conducting unit	Department of Statistics -> Faculty of Management -> Rector		
Name and surname of lecturer (lecturers)	Subject supervisor	dr Arkadiusz Kozłowski	
	Teachers		

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	15.0	0.0	30.0	0.0	0.0	45

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	45	3.0	52.0	100

Subject objectives

The aim of the course is to familiarize students with the theory and practice of sample research, basic sample designs and methods of estimating population parameters based on random samples.

Learning outcomes

Course outcome	Subject outcome	Method of verification
[IiEMU2_W06] Possesses a structured understanding of the processes, methods, and tools necessary for the design, creation, development, and provision of suitable conditions for informatics, econometrics or statistics tools	The student knows and understands the methods of sample selection for a sample survey as well as the methods of estimating finite population parameters and assessing sampling errors.	[SW4] test/exam - oral or written
[IiEMU2_U01] Can creatively and profoundly analyze complex social and economic processes using structured knowledge, econometrics, informatics, or statistics tools	The student is able to determine the optimal method of sample selection for a sample survey, draw a sample according to a specific scheme, estimate unknown population parameters, evaluate the accuracy of estimates, incorporate information from outside the sample into the estimation process by weighing units and calibrating weights.	[SU2] presentation/project/paper/ report

Subject contents

- The essence of survey sampling.
- Sampling design and estimation methods.
- Simple random sampling. Simple and complex estimation.
- Stratified sampling. Balanced sampling.
- Cluster and multistage sampling.
- Nonresponses and calibration approach.
- Simplified/approximate variance estimation.

<table>
<tr><td>Prerequisites and co-requisites</td><td colspan="2">Knowledge of the basics of probability and mathematical statistics</td></tr>
<tr><td>Assessment methods and criteria</td><td colspan="2"><table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>Oral or written exam</td><td>51.0%</td><td>50.0%</td></tr>
<tr><td>Project</td><td>51.0%</td><td>50.0%</td></tr>
</table></td></tr>
<tr><td rowspan="3">Recommended reading</td><td>Basic literature</td><td>1. Kozłowski A., Szreder M., Informacje spoza próby w badaniach statystycznych, Wydawnictwo UG, Gdańsk 2020.
2. Szreder, M., Kozłowski, A., Wnioskowanie na podstawie prób losowych i nielosowych. Wydawnictwo Uniwersytetu Gdańskiego, Gdańsk 2024.
3. Bracha C., Metoda reprezentacyjna w badaniu opinii publicznej i marketingu, Efekt, Warszawa 1998.
4. Lohr S.L., Sampling. Design and analysis, CRC Press, London, New York 2022.</td></tr>
<tr><td>Supplementary literature</td><td>1. Steczkowski J., Metoda reprezentacyjna w badaniach zjawisk ekonomiczno-społecznych, Wydawnictwo Naukowe PWN, Warszawa-Kraków 1995.
2. Zasępa R., Metoda reprezentacyjna, PWE, Warszawa 1972.</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td colspan="2"></td></tr>
<tr><td>Work placement</td><td colspan="2">Not applicable</td></tr>
</table>

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