



## Subject card

Subject name and code	Distribution of income and wealth, PG_00061685						
Field of study	Economic Analytics						
Date of commencement of studies	October 2023	Academic year of realisation of subject			2024/2025		
Education level	second-cycle studies	Subject group			Optional subject group Subject group related to scientific research in the field of study		
Mode of study	Part-time studies	Mode of delivery			at the university		
Year of study	2	Language of instruction			Polish		
Semester of study	4	ECTS credits			3.0		
Learning profile	general academic profile	Assessment form			assessment		
Conducting unit	Department of Statistics and Econometrics -> Faculty of Management and Economics						
Name and surname of lecturer (lecturers)	Subject supervisor	prof. dr hab. Stanisław Kot					
	Teachers	prof. dr hab. Stanisław Kot					
Lesson types and methods of instruction	Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
	Number of study hours	8.0	0.0	16.0	0.0	0.0	24
	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	24		8.0		43.0	75
Subject objectives	The course aims to acquaint students with the methods of analysing income distributions and their particular aspects, such as inequality, poverty and welfare. The most important theoretical forms of the distributions and the methods of estimating their parameters are presented. A project is the base of receiving a credit for the course. Minimum two-person and maximum four-person teams elaborate the project.						
Learning outcomes	Course outcome		Subject outcome		Method of verification		
	[K7_U02] presents logical and solid arguments about the obtained results, by analyzing and synthesizing information in various business contexts, approaching their interpretation critically		Students know the methods of analysing income distributions.		[SU4] Assessment of ability to use methods and tools [SU3] Assessment of ability to use knowledge gained from the subject		
	[K7_W01] identifies in-depth the phenomena related to the field of study and the theories describing them and possible analytical methods		Students can apply the statistical methods of analysing income distributions to assess income inequality, poverty and welfare		[SW3] Assessment of knowledge contained in written work and projects		

Subject contents	<ol style="list-style-type: none"> <li>1. Income, Wealth, Prosperity <ul style="list-style-type: none"> <li>• Income classification</li> <li>• Social welfare function</li> </ul> </li> <li>2. Statistical Description of Income Distribution <ul style="list-style-type: none"> <li>• Non-parametric methods (histogram, kernel)</li> <li>• Parametric methods</li> </ul> </li> <li>3. Descriptive Measures of Economic Inequality <ul style="list-style-type: none"> <li>• Lorenz function</li> <li>• Inequality measures (Gini index, Pietra index, generalized entropy index, generalized Gini index)</li> <li>• Decomposability of inequality indices</li> </ul> </li> <li>4. Normative Aspects of Economic Inequality <ul style="list-style-type: none"> <li>• Axioms of inequality measures</li> <li>• Constant relative inequality aversion utility function</li> <li>• Atkinson inequality index</li> <li>• Simplified social welfare functions</li> <li>• Inequality and welfare</li> </ul> </li> <li>5. Measurement of Economic Poverty <ul style="list-style-type: none"> <li>• Poverty lines</li> <li>• FGT poverty indices</li> <li>• The problem of decomposing poverty measures</li> </ul> </li> <li>6. Measurement of Economic Polarization <ul style="list-style-type: none"> <li>• Non-parametric methods (kernel)</li> <li>• Parametric methods</li> </ul> </li> <li>7. Sources of Statistical Data on Income <ul style="list-style-type: none"> <li>• Household budget surveys</li> <li>• Equivalence scales</li> </ul> </li> <li>8. Theoretical Income Distributions <ul style="list-style-type: none"> <li>• Pareto distribution</li> <li>• Log-normal distribution</li> <li>• Theories on the genesis of income distributions</li> <li>• Generalized Beta Distribution of the second kind (GB2)</li> <li>• Dagum distribution</li> <li>• Singh-Maddala distribution</li> <li>• Fisk distribution</li> </ul> </li> <li>9. Estimation and Testing of Theoretical Income Distributions <ul style="list-style-type: none"> <li>• Maximum likelihood estimation</li> <li>• Goodness-of-fit tests</li> </ul> </li> <li>10. Measurement of Aversion to Inequality <ul style="list-style-type: none"> <li>• Dilemma: how much equality vs. how much efficiency?</li> <li>• Leaky bucket experiment</li> <li>• Other methods for measuring inequality aversion</li> </ul> </li> <li>11. International Comparisons of Income Distributions <ul style="list-style-type: none"> <li>• The issue of comparable statistical data</li> <li>• Databases</li> </ul> </li> <li>12. Global Income Distribution <ul style="list-style-type: none"> <li>• Shorrocks-Wan method</li> <li>• Clone method</li> </ul> </li> <li>13. Economic Inequality in the World</li> <li>14. Economic Poverty in the World</li> <li>15. From Income Distribution to Welfare Distribution</li> </ol>
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Prerequisites and co-requisites			
Assessment methods and criteria	Subject passing criteria	Passing threshold	Percentage of the final grade
	Project	60.0%	100.0%
Recommended reading	Basic literature	<p>Jędrzejczak, A. Pekasiewicz, D. (2020) <i>Teoretyczne rozkłady dochodów</i>. Wydawnictwo Uniwersytetu Łódzkiego.</p> <p>Kot S.M., Malawski A., Węgrzecki A. (2004) <i>Dobrobyt społeczny, nierówności i sprawiedliwość dystrybucyjna</i> Kraków, wyd. AE w Krakowie</p> <p>Panek T(red.) (2007) <i>Statystyka społeczna</i>, PWE, Warszawa</p>	
	Supplementary literature	<p>Kot, S.M. (2012). <i>Ku stochastycznemu paradygmatowi ekonomii dobrobytu</i>. Cracow: Impuls.</p> <p>Kot. S. M. (2000): <i>Ekonometryczne modele dobrobytu</i>. (Warszawa-Kraków, PWN).</p>	
	eResources addresses	<p>Adresy na platformie eNauczanie:  Rozkłady dochodów i dobrobytu (niestacjonarne) - Nowy - Nowy - Moodle ID: 23897  <a href="https://enauzanie.pg.edu.pl/moodle/course/view.php?id=23897">https://enauzanie.pg.edu.pl/moodle/course/view.php?id=23897</a></p>	
Example issues/ example questions/ tasks being completed			
Work placement	Not applicable		

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