## Subject card

| Subject name and code | APPLICATION OF ECONOMETRIC METHODS IN MANAGEMENT, PG_00060998 | | |
|---|---|---|---|
| Field of study | Management, Management | | |
| Date of commencement of studies | October 2025 | Academic year of realisation of subject | 2025/2026 |
| Education level | second-cycle studies | Subject group | Obligatory subject group in the field of study |
| | | | 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 | 1 | Language of instruction | Polish |
| Semester of study | 1 | ECTS credits | 3.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Department Of Statistics And Econometrics -> Faculty Of Management And Economics -> Wydziały Politechniki Gdańskiej | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | dr hab. Michał Pietrzak | |
| | Teachers | dr hab. Michał Pietrzak | |

| 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 | 5.0 | 46.0 | 75 |

| Subject objectives | Models phenomena in the field of management and economics using in-depth econometric methods |
|---|---|

| Learning outcomes | Course outcome | Subject outcome | Method of verification |
|---|---|---|---|
| | [K7_U03] formulates research problems and selects appropriate research methods for their effective solution, using advanced IT tools, and evaluates the obtained results critically | formulates hypotheses and verifies them using advanced econometric models, using IT tools | [SU4] Assessment of ability to use methods and tools |
| | [K7_W03] demonstrates in-depth preparation in the application of management methods and techniques for formulating and solving management problems | uses econometric models to solve complex management and economic problems, based on reliable sources of information | [SW1] Assessment of factual knowledge |

| Subject contents | Econometric model - concept, elements and interpretation |
|---|---|
| | Classification of econometric models |
| | Simple and Multiple Regression Model Estimation Problems - Least Squares Method (LSM) |
| | Verification of the estimated form of the model - a measure of the quality of fit |
| | Stochastic verification of the estimated form of the model - standard error of estimators and testing the significance of parameters |
| | Autocorrelation - causes and testing |
| | The concept of conditional econometric forecast |
| | Multiplicative models - problems of estimation and interpretation |
| | Simple methods of time series analysis - development trend models |
| | Cause and effect dynamic models - problems of interpretation |
| | Cause and effect models of production and work efficiency |
| | Cause and effect model of labor demand |
| | Cause and effect wage model |
| | The cause and effect model of inflation |

| Prerequisites and co-requisites | |
|---|---|

| Assessment methods and criteria | Subject passing criteria | Passing threshold | Percentage of the final grade |
|---|---|---|---|
| | Final test | 60.0% | 50.0% |
| | Passing the laboratory | 60.0% | 50.0% |

| Recommended reading | Basic literature | Maddala G.S.: Ekonometria, Wydawnictwo Naukowe PWN, Warszawa 2006<br>Strzała, K:. Ekonometria inaczej, Wyd. UG, Gdańsk 1994<br>Theil, H. (1979), Zasady ekonometrii, PWN, Warszawa<br>Goldberger A.S. : Teoria ekonometrii, PWE, Warszawa 1979<br>Welfe W. (redakcja), Ekonometryczne modele rynku, Tom 1, PWE, Warszawa 1977 |
| --- | --- | --- |
| | Supplementary literature | http://www.zie.pg.gda.pl/web/katedra-nauk-ekonomicznych/17 |
| | eResources addresses | Adresy na platformie eNauczanie: |
| Example issues/<br>example questions/<br>tasks being completed | Rozważ przyczynowo-skutkowy model płac:  **lnWt = 1,8 +0,7 lnAPLt  - 0,15 ln URt-1**<br>gdzie: **Wt** -  realna płaca w okresie **t**, **APLt** przeciętna produktywność pracy, **URt** stopa bezrobocia na koniec okresu **t** (w %)<br>1 Dokonując antylogarytmowania sprowadź model do postaci pierwotnej:.................................................<br>2. Zdefiniuj i zinterpretuj elastyczność płacy (**W**) ze względu na wydajność pracy (**APL**)...........................<br>3. Zdefiniuj i zinterpretuj elastyczność płacy (**W**) ze względu na stopę bezrobocia (**UR**):............................ | |
| Work placement | Not applicable | |

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