

## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                          |                                         |                                     |                                                |            |     |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-----------------------------------------|-------------------------------------|------------------------------------------------|------------|-----|
| Subject name and code                       | Statistical Analysis in Business Projects, PG_00170030                                                                                                                                                                                                                                                                                                                                          |                                                          |                                         |                                     |                                                |            |     |
| Field of study                              | Economics                                                                                                                                                                                                                                                                                                                                                                                       |                                                          |                                         |                                     |                                                |            |     |
| Date of commencement of studies             | October 2025                                                                                                                                                                                                                                                                                                                                                                                    |                                                          | Academic year of realisation of subject |                                     | 2027/2028                                      |            |     |
| Education level                             | Bachelor's studies                                                                                                                                                                                                                                                                                                                                                                              |                                                          | Subject group                           |                                     | Obligatory subject group in the field of study |            |     |
| Mode of study                               | full-time studies                                                                                                                                                                                                                                                                                                                                                                               |                                                          | Mode of delivery                        |                                     | at the university                              |            |     |
| Year of study                               | 3                                                                                                                                                                                                                                                                                                                                                                                               |                                                          | Language of instruction                 |                                     | Polish                                         |            |     |
| Semester of study                           | 6                                                                                                                                                                                                                                                                                                                                                                                               |                                                          | ECTS credits                            |                                     | 2.0                                            |            |     |
| Learning profile                            | academic                                                                                                                                                                                                                                                                                                                                                                                        |                                                          | Assessment form                         |                                     |                                                |            |     |
| Conducting unit                             | Department of Statistics -> Faculty of Management -> Rector                                                                                                                                                                                                                                                                                                                                     |                                                          |                                         |                                     |                                                |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                              |                                                          | dr Olga Komorowska                      |                                     |                                                |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                                                                        |                                                          |                                         |                                     |                                                |            |     |
| Lesson types                                | Lesson type                                                                                                                                                                                                                                                                                                                                                                                     | Lecture                                                  | Tutorial                                | Laboratory                          | Project                                        | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                                                                                                                           | 0.0                                                      | 15.0                                    | 0.0                                 | 0.0                                            | 0.0        | 15  |
|                                             | 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                                                                                                                                                                                                                                                                                                                                                                           | 15                                                       |                                         | 5.0                                 |                                                | 30.0       | 50  |
| Subject objectives                          | The student's knowledge and understanding of the issues of statistical research used in the implementation of business projects. Acquiring the ability to critically evaluate research results, understanding the strengths and weaknesses of incomplete and full research. The ability to choose the appropriate analytical method for the available data and the stated purpose of the study. |                                                          |                                         |                                     |                                                |            |     |

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|----------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Learning outcomes                                              | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                        | Subject outcome                                                                                                                                                                                                               | Method of verification                                                                 |
|                                                                | [EKONL3_K06] is willing to be guided in his professional life by business ethics and corporate social responsibility, to respect others and to be loyal to his employer                                                                                                                                                                                                                                                                               | Able to cooperate and work in a group.                                                                                                                                                                                        | [SK5] implementation of a problem task                                                 |
|                                                                | [EKONL3_U10] has the ability to prepare oral presentations, in Polish and in a foreign language, on economic and social issues, using specialist terminology, theoretical approaches, principles of collecting various sources of data, their description and interpretation, and making inferences from scientific literature, and is able to take an active part in a debate                                                                        | The student knows various data sources and is able to interpret data provided by institutions such as the Central Statistical Office. The student is able to pose a problematic question to a scientific article he has read. | [SU1] oral statement/conversation/discussion                                           |
|                                                                | [EKONL3_U04] can predict and forecast the course of economic and social processes and phenomena                                                                                                                                                                                                                                                                                                                                                       | The student identifies the appropriate method in relation to the available data.                                                                                                                                              | [SU1] oral statement/conversation/discussion<br>[SU5] implementation of a problem task |
|                                                                | [EKONL3_K02] is aware of the level of knowledge in the field of economics and understands the need to deepen and update this knowledge throughout life                                                                                                                                                                                                                                                                                                | Ability to discuss data and draw conclusions from a read scientific article.                                                                                                                                                  | [SK1] oral statement/conversation/discussion                                           |
|                                                                | [EKONL3_W06] have an advanced knowledge of selected methods and tools, including statistical and econometric techniques, for describing economic agents and structures as well as social institutions and the processes taking place in them                                                                                                                                                                                                          | Sudent describes the known data analysis methods. The student understands the strengths and weaknesses of incomplete and full research.                                                                                       | [SW1] oral statement/conversation/discussion<br>[SW5] implementation of a problem task |
| Subject contents                                               | <div>1. Analysis in graphical form presents data.</div> <div>2. Alternative transformations.</div> <div>3. Measurement scales</div> <div>4. Methods of organizing a linear set of objects (ranks and Hellwig)</div> <div>5. Estimation</div> <div>6. Odds ratio</div> <div>7. Data quality</div> <div>8. Data sources</div> <div>Doubts or interpretation problems related to the data analysis, which are also resolved during the connection.</div> |                                                                                                                                                                                                                               |                                                                                        |
| Prerequisites and co-requisites                                | Knowledge of the basics of statistics.                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                               |                                                                                        |
| Assessment methods and criteria                                | Subject passing criteria                                                                                                                                                                                                                                                                                                                                                                                                                              | Passing threshold                                                                                                                                                                                                             | Percentage of the final grade                                                          |
|                                                                | Work in classes                                                                                                                                                                                                                                                                                                                                                                                                                                       | 0.0%                                                                                                                                                                                                                          | 30.0%                                                                                  |
|                                                                | Project/Written work                                                                                                                                                                                                                                                                                                                                                                                                                                  | 0.0%                                                                                                                                                                                                                          | 40.0%                                                                                  |
|                                                                | Oral answer                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.0%                                                                                                                                                                                                                          | 30.0%                                                                                  |
| Recommended reading                                            | Basic literature                                                                                                                                                                                                                                                                                                                                                                                                                                      | Wybrane pozycje są dostępne w języku polskim.                                                                                                                                                                                 |                                                                                        |
|                                                                | Supplementary literature                                                                                                                                                                                                                                                                                                                                                                                                                              | Wybrane pozycje są dostępne w języku polskim.                                                                                                                                                                                 |                                                                                        |
|                                                                | eResources addresses                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                               |                                                                                        |
| Example issues/<br>example questions/<br>tasks being completed | <div>1. Why should pie charts be avoided?</div> <div>2. How does the Central Statistical Office collect data on wages in Poland and what kind of information can we obtain in this regard on the website <a href="http://www.stat.gov.pl">www.stat.gov.pl</a>.</div> <div>3. For what purpose is variable standardization used?</div> <div>4. Give the disadvantages of the linear ordering method, the so-called Hellwig method.</div>               |                                                                                                                                                                                                                               |                                                                                        |
| Work placement                                                 | Not applicable                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                               |                                                                                        |

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