#### card of course

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| Subject name | Descriptive statistics  |

1. The placement of the subject in the study system

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| --- | --- |
| 1.1. Field of study | Management |
| 1.2. Form and path of study | Full-time/Part-time |
| 1.3. Level of education | First-cycle studies |
| 1.4. Study profile | Practical |

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| 1. 5. Specialty | - |
| 1.6. Subject Coordinator | Dr Paweł Wlaź |

2. General characteristics of the subject

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| 2.1. Belonging to a subject group | Directional/Practical |
| 2.2. Number of ECTS | 4 |
| 2.3. Language of lectures | English |
| 2.4. Semesters in which the subject is taught | I |
| 2.5.Criteria for selecting course participants | - |

1. Learning outcomes and course delivery
	1. Subject Objectives

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| No. | Subject Objectives |
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| C1 | To acquaint students with the concepts and methods of statistical description. To present the possibilities and benefits of using statistics in management. |
| C2 | Developing skills in the practical use of statistical methods in management and the ability to interpret the obtained calculation results. |
| C3 | Preparing students to independently use statistical methods in management. Shaping an attitude of openness to the possibilities of using statistics in management. |

* 1. Subject-specific learning outcomes, divided into knowledge , skills and competences , with reference to the directional learning outcomes

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| --- | --- | --- | --- |
| No. | Description of subject learning outcomes | Reference to directional effectslearning (symbols) | Method of implementation (mark "X") |
| ST | NST |
| Classes at the University | Activities on the platform | Classes at the University | Activities on the platform |
| After passing the course, the student knows and understands **the knowledge** |
| W1 | Understands the essence of statistical description and defines basic concepts in this area | Z1\_W08 | X |  |  | X |
| W2 | Basic statistical methods and measures for describing structure, correlation, regression and dynamics | X |  |  | X |
| W3 | Knows how to analyze and interpret selected economic and social phenomena | X |  |  | X |
| W4 | Knows the basic statistical tools that support decision-making | X |  |  | X |
| After passing the course, the student is **able** to: |
| U1 | Is able to select appropriate statistical methods for the research problems being analyzed. | Z1\_U05Z1\_U07 | X |  | X |  |
| U2 | Independently perform simple statistical calculations. Knows the interpretation of statistical description measures. | X |  | X |  |
| U3 | Analyze data presented in a graph, and present the data in this way yourself. | X |  | X |  |
| After completing the course, the student is ready to take part in **social competences.** |
| K1 | The student shows interest in acquiring new knowledge in the field of statistical methods. | Z1\_K01 | X |  | X |  |
| K2 | Is aware of the role of statistical methods in describing the formation of regularities of phenomena in the field of management. | X |  | X |  |

3.3. Forms of teaching and their number of hours - Full-time studies (ST), Part-time studies (NST)

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| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Path | Lecture | Exercises | Design | Workshop | Laboratory | Seminar | Lecturer | Classes conducted using distance learning methods and techniques in the form of a lecture | Other | **ECTS points** |
| **ST** | 15 | 15 |  |  |  |  |  |  |  | 4 |
| **NST** |  | 10 |  |  |  |  |  | 5 |  | 4 |

3.4. Content of education (separately for each form of classes: (W, ĆW, PROJ, WAR, LAB, LEK, OTHER). It should be marked (X) how the given content will be implemented (classes at the university or classes on the e-learning platform conducted using distance learning methods and techniques)

TYPE OF CLASS: LECTURE

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| --- | --- | --- | --- |
| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") |
| ST | NST |
| **Classes at the University** | **Activities on the platform** | **Classes at the University** | **Activities on the platform** |
| 1. | Subject and tasks of statistics. Basic concepts: mass phenomena, population and sample, statistical characteristics, statistical data, statistical series | W1, W4 | X |  |  | X |
| 2. | Statistical description of structure. Mean, dispersion and asymmetry measures of the description of the empirical distribution. Construction of measures and interpretation. | W2, W3 | X |  |  | X |
| 3. | Statistical description of correlation. Correlation series and tables. Strength and direction of correlation. Selected correlation coefficients of measurable and non-measurable features. Construction of measures and interpretation. | W2, W3 | X |  |  | X |
| 4. | Statistical description of regression. Classical linear regression model. Notation of linear relationship between variables. Estimation of regression function parameters. Interpretation of parameter estimates. Measures of goodness of fit of regression function. Interpretation of goodness of fit measures. | W2, W3 | X |  |  | X |
| 5. | Description of the dynamics of phenomena. Dynamics in the short and long term. Absolute and relative increases. Individual and aggregate indices. Linear trend function. Construction of dynamics measures and their interpretation. | W2, W3 | X |  |  | X |
| 6. | Summary of classes and discussion of grades |  | X |  |  | X |

TYPE OF CLASSES: EXERCISES

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| --- | --- | --- | --- |
| No. | Content of the course | Reference to subject-specific learning outcomes | Method of implementation (mark "X") |
| ST | NST |
| **Classes at the University** | **Activities on the platform** | **Classes at the University** | **Activities on the platform** |
| 1. | Tasks covering basic concepts: mass phenomena, population and sample, statistical features, statistical data, statistical series | U1, U2, K1 | X |  | X |  |
| 2. | Tasks concerning average measures, dispersion and asymmetry of the description of the empirical distribution. Construction of measures and interpretation. | U1, U2, K1, K2 | X |  | X |  |
| 3. | Correlation tasks. Correlation series and tables. Strength and direction of correlation. Selected correlation coefficients of measurable and non-measurable features. Construction of measures and interpretation. | U1, U2, U3, K1, K2 | X |  | X |  |
| 4. | Regression problems. Classical linear regression model. Notation of linear dependence between variables. Estimation of regression function parameters. Interpretation of parameter estimates. Measures of goodness of fit of regression function. Interpretation of goodness of fit measures. | U1, U2, K1, K2 | X |  | X |  |
| 5. | Tasks on the dynamics of phenomena. Dynamics in the short and long term. Absolute and relative increases. Individual and aggregate indices. Linear trend function. Construction of dynamics measures and their interpretation. | U1, U2, K1, K2 | X |  | X |  |
| 6. | Summary of classes and discussion of grades |  | X |  | X |  |

3.5. Methods of verifying learning outcomes (indication and description of methods of conducting classes and verification of achievement of learning outcomes and method of documentation)

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| Subject Effects | Teaching methods | Methods of verifying learning outcomes | Documentation methods |
| KNOWLEDGE |
| W1-W4 | Lecture with the use of multimedia | Test – passing the lectures | Graded Test Sheet |
| SKILLS |
| U1-U4 | Solving tasks | Colloquium – passing the exercises | Graded worksheet |
| SOCIAL COMPETENCES |
| K1-K2 | Solving tasks | Colloquium – passing the exercises | Graded worksheet |

3.6. Assessment criteria for the achieved learning outcomes

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| Learning effect | For a grade of 3 or " zal ."the student knows and understands/is able to/is ready to | For a grade of 3.5, the student knows and understands/is able to/is ready to | For a grade of 4, the student knows and understands/is able to/is ready to | For a grade of 4.5, the student knows and understands/is able to/is ready to | For a grade of 5, the student knows and understands/is able to/is ready to |
| W | 51-60% of knowledge indicated in learning outcomes | 61-70% of knowledge indicated in learning outcomes | 71-80% of knowledge indicated in learning outcomes | 81-90% of knowledge indicated in learning outcomes | 91-100% of knowledge indicated in learning outcomes |
| U | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |
| K | 51-60% of skills indicated in learning outcomes | 61-70% of skills indicated in learning outcomes | 71-80% of skills indicated in learning outcomes | 81-90% of skills indicated in learning outcomes | 91-100% of skills indicated in learning outcomes |

3.7. Literature

**Basic**

1. Sobczyk M., Statystyka opisowa, Wydawnictwo C.H. Beck, Warszawa, 2010
2. Starzyńska W. (red.), Podstawy statystyki : podręcznik, Difin, Warszawa, 2009
3. Bąk I., Markowicz I., Mojsiewicz M., Statystyka opisowa : przykłady i zadania, CeDeWu, Warszawa, 2020

**Supplementary**

1. Balcerowicz-Szkutnik, Maria. Podstawy statystyki w przykładach i zadaniach: statystyka opisowa. Cz. 1 / Maria Balcerowicz-Szkutnik, Włodzimierz Szkutnik. - Wyd. 2 uzup. i popr. Katowice : Wydawnictwo Śląskiej Wyższej Szkoły Zarządzania im. gen. Jerzego Ziętka, 2006
2. J. Jóźwiak, J. Podgórski, „Statystyka od podstaw”, PWE, Warszawa 2006.

4. Student workload - ECTS points balance

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| --- | --- |
| **Types of student activity** | **Student Load** |
| **ST** | **NST** |
| **Classes requiring direct contact between the student and the academic teacher at the university premises** | **30** | **15** |
| Classes included in the study plan | 30 | 15 |
| **Student's own work** | **70** | **85** |
| Ongoing preparation for classes, preparation of project work/presentations/etc. | 35 | 45 |
| Preparation for passing classes | 35 | 40 |
| **TOTAL STUDENT HOURLY LOAD** | **100** | **100** |
| **Number of ECTS points** | **4** | **4** |

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| Last change date | 30/09/2024 |
| The changes were introduced | ZAZ Education Quality Team |
| The changes were approved | Mgr Anna Bielak |