



## Subject card

|   |   |  |   |                                     |   |  |     |
|---|---|--|---|-------------------------------------|---|--|-----|
| Subject name and code                       | LOGIC, PG_00061438  |  |   |                                     |   |  |     |
| Field of study                              | Engineering Management  |  |   |                                     |   |  |     |
| Date of commencement of studies             | October 2023  | Academic year of realisation of subject                  |   |                                     | 2023/2024   |  |     |
| Education level                             | first-cycle studies   | Subject group  |   |                                     | Obligatory subject group in the field of study<br>Humanistic-social subject group |  |     |
| Mode of study                               | Part-time studies (on-line)   | Mode of delivery   |   |                                     | blended-learning  |  |     |
| Year of study                               | 1   | Language of instruction                                  |   |                                     | Polish  |  |     |
| Semester of study                           | 1   | ECTS credits   |   |                                     | 4.0   |  |     |
| Learning profile                            | general academic profile  | Assessment form  |   |                                     | assessment  |  |     |
| Conducting unit                             | Department of Social Sciences and Philosophy -> Faculty of Management and Economics   |  |   |                                     |   |  |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor  | dr hab. Andrzej Lisak                                    |   |                                     |   |  |     |
|   | Teachers  | dr hab. Andrzej Lisak                                    |   |                                     |   |  |     |
| Lesson types and methods of instruction     | Lesson type   | Lecture  | Tutorial  | Laboratory                          | Project   | Seminar  | SUM |
|   | Number of study hours   | 16.0   | 8.0   | 0.0                                 | 0.0   | 0.0  | 24  |
|   | E-learning hours included: 18.0   |  |   |                                     |   |  |     |
| 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                                 |   | 71.0   | 100 |
| Subject objectives                          | Formulates solutions to complex problems using basic laws and techniques of logic   |  |   |                                     |   |  |     |
| Learning outcomes                           | Course outcome  |  | Subject outcome   |                                     |   | Method of verification   |     |
|   | [K6_U04] formulates logical solutions to complex or unstructured problems   |  | selects optimal decision variants using basic logical operations: classifying, defining and reasoning   |                                     |   | [SU3] Assessment of ability to use knowledge gained from the subject |     |
|   | [K6_W02] demonstrates advanced preparation in the methods and techniques of formulating and solving problems  |  | analyzes any theorems in terms of their logical and argumentative correctness   |                                     |   | [SW1] Assessment of factual knowledge                                |     |
| Subject contents                            | What is logic?<br>Logic and language<br>Functions of language. logic and meaning<br>Name and concept<br>Definitions and division<br>Propositions and judgments and their forms<br>Sentential calculus<br>Rules of sentential calculus<br>Predicate calculus<br>Basic notions of set theory<br>Syllogistic logic. Deductive, reductive and inductive reasoning<br>The meaning of logic for solving scientific questions<br>Logic in economics. Logic and rhetoric<br>Discussions of chosen logical dilemmas and solving problems |  |   |                                     |   |  |     |
| Prerequisites and co-requisites             |   |  |   |                                     |   |  |     |
| Assessment methods and criteria             | Subject passing criteria  |  | Passing threshold   |                                     |   | Percentage of the final grade  |     |
|   | Oral exam   |  | 60.0%   |                                     |   | 65.0%  |     |
|   | Homeworks   |  | 60.0%   |                                     |   | 15.0%  |     |
|   | Presenting chosen subjects  |  | 100.0%  |                                     |   | 20.0%  |     |
| Recommended reading                         | Basic literature  |  | K. Ajdukiewicz, Zarys logiki. PZWS, Warszawa, 1957<br>L. Borkowski, Elementy logiki formalnej. PWN, Warszawa, 1974<br>B. Stanosz, Wprowadzenie do logiki formalnej. PWN, Warszawa, 1985<br>Z. Ziemiński, Logika praktyczna. PWN, Warszawa, 1998 |                                     |   |  |     |

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|  | Supplementary literature                        | Mała encyklopedia logiki, Wrocław. Warszawa, Kraków, Ossolineum, 1970<br>Ch. Perelman, Retoryka a sztuka argumentacji. PWN, Warszawa, 2003  |
|  | eResources addresses                            | Adresy na platformie eNauczenie:<br>Logika (Z NSTAC ONLINE) - Moodle ID: 32710<br><a href="https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32710">https://enauczanie.pg.edu.pl/moodle/course/view.php?id=32710</a> |
| Example issues/<br>example questions/<br>tasks being completed | Examine given sentences and give its conclusion |   |
| Work placement   | Not applicable                                  |   |