



## Subject card

|                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------|-----|
| Subject name and code                       | Artificial intelligence - achievements and development prospects, PG_00057844                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |
| Field of study                              | Civil Engineering, Environmental Engineering, Materials Engineering, Informatics, Mathematics, Transport, Management, Management, Materials Engineering, Management, Economic Analytics, Economic Analytics, Space and Satellite Technologies, Automatic Control, Cybernetics and Robotics, Ocean Engineering, Green Technologies, Green Technologies, Coastal and Offshore Engineering, Mechatronics, Ocean Engineering, Mechanical Engineering, Materials Engineering, Space and Satellite Technologies, Coastal and Offshore Engineering, Ocean Engineering, Transport and Logistics, Ocean Engineering |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |
| Date of commencement of studies             | February 2021                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Academic year of realisation of subject                  |                                                                                                                   |                                     | 2021/2022                                                                                                                     |            |     |
| Education level                             | second-cycle studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Subject group                                            |                                                                                                                   |                                     | Optional subject group<br>Humanistic-social subject group                                                                     |            |     |
| Mode of study                               | Full-time studies                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Mode of delivery                                         |                                                                                                                   |                                     | at the university                                                                                                             |            |     |
| Year of study                               | 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Language of instruction                                  |                                                                                                                   |                                     | Polish                                                                                                                        |            |     |
| Semester of study                           | 3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | ECTS credits                                             |                                                                                                                   |                                     | 2.0                                                                                                                           |            |     |
| Learning profile                            | general academic profile                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Assessment form                                          |                                                                                                                   |                                     | assessment                                                                                                                    |            |     |
| Conducting unit                             | Faculty of Ocean Engineering and Ship Technology                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |
| Name and surname of lecturer (lecturers)    | Subject supervisor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                          | dr inż. Tacjana Niksa-Rynkiewicz                                                                                  |                                     |                                                                                                                               |            |     |
|                                             | Teachers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | dr inż. Tacjana Niksa-Rynkiewicz                                                                                  |                                     |                                                                                                                               |            |     |
| Lesson types and methods of instruction     | Lesson type                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Lecture                                                  | Tutorial                                                                                                          | Laboratory                          | Project                                                                                                                       | Seminar    | SUM |
|                                             | Number of study hours                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 30.0                                                     | 0.0                                                                                                               | 0.0                                 | 0.0                                                                                                                           | 0.0        | 30  |
|                                             | 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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | 30                                                       |                                                                                                                   | 2.0                                 |                                                                                                                               | 18.0       | 50  |
| Subject objectives                          | Acquiring knowledge about the possibilities, genesis and ideas of methods of artificial intelligence, its development prospects and previous solutions. Discussion of ethical and scientific values in the context of the latest technological solutions.                                                                                                                                                                                                                                                                                                                                                  |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |
| Learning outcomes                           | Course outcome                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                          | Subject outcome                                                                                                   |                                     | Method of verification                                                                                                        |            |     |
|                                             | [K7_U71] is able to apply knowledge from humanistic, social, economic or legal sciences in order to solve problems                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                          | confront emerging ideas of ethics and social norms.                                                               |                                     | [SU2] Assessment of ability to analyse information<br>[SU4] Assessment of ability to use methods and tools                    |            |     |
|                                             | [K7_K71] is able to explain the need to apply knowledge from humanistic, social, economic or legal sciences in order to function in a social environment                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                          | Getting to know the latest social needs functioning in the world of technology and science.                       |                                     | [SK3] Assessment of ability to organize work<br>[SK1] Assessment of group work skills<br>[SK2] Assessment of progress of work |            |     |
|                                             | [K7_W71] has general knowledge in humanistic, social, economic or legal sciences, including their fundamentals and applications                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          | Getting to know the issues of ethical and scientific values in the context of the latest technological solutions. |                                     | [SW2] Assessment of knowledge contained in presentation                                                                       |            |     |
| Subject contents                            | "Human-computer communication", "Smart homes""Artificial Neural Networks""Fuzzy and neuron-fuzzy systems""Genetic Algorithms""Immunological algorithms""Expert systems""Knowledge engineering""Robotics""Processing of speech and natural language""Heuristics and search strategies""Cognitive Science""Swarm algorithms""Knowledge Engineering""Bots"                                                                                                                                                                                                                                                    |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |
| Prerequisites and co-requisites             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                          |                                                                                                                   |                                     |                                                                                                                               |            |     |

| Assessment methods and criteria                                | Subject passing criteria                                                                                                                                | Passing threshold                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Percentage of the final grade |
|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|
|                                                                | liczba punktów uzyskanych w teście                                                                                                                      | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0%                          |
|                                                                | przygotowana prezentacja jest ciekawa, zawiera rzetelnie przygotowane informacje                                                                        | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.0%                         |
|                                                                | prezentacja odbyła się w ustalonym terminie                                                                                                             | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.0%                         |
|                                                                | student zaprezentował prowadzącemu działający program komputerowy (wraz ze źródłami) realizujący wybrane zagadnienie z dziedziny sztucznej inteligencji | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 0.0%                          |
|                                                                | nadesłane rozwiązanie jest przygotowane w prawidłowej wersji                                                                                            | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.0%                         |
|                                                                | student przekazał informacje na wybrany temat w czytelny sposób                                                                                         | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.0%                         |
|                                                                | student samodzielnie zaprezentował przygotowany materiał (tzn. prezentacja nie była zwyczajnie odczytana z kartki).                                     | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 10.0%                         |
|                                                                | student wysłał swoje rozwiązanie ze swojego konta w ustalonym terminie (najpóźniej 7 dni przed swoją prezentacją)                                       | 60.0%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 50.0%                         |
| Recommended reading                                            | Basic literature                                                                                                                                        | <p>Methods and techniques of artificial intelligence / Leszek Rutkowski. - Editions 2 changes - Warsaw: PWN Scientific Publishers, 2012. - ISBN 978-83-01-15731-9 Academic textbook</p> <p>Methods and techniques of artificial intelligence: inteligencja obliczeniowa / Leszek Rutkowski. - Warsaw: Publisher. Sciences. PWN, 2006. - ISBN 83-01-14529-3 Academic textbook</p> <p>Brain and machines / Richard Gregory; tł. Leon Grobelski. - Warsaw: Prószyński, 2000. - ISBN 83-7255-041-7 From neuron do (samo)wiadomka / Bernard Korzeniewski. - Warsaw: Prószyński, 2005. - ISBN 83-7337-954-1</p> |                               |
|                                                                | Supplementary literature                                                                                                                                | <p>Mind, brain and science / John R. Searle; This is Jerzy Bobryk. - Warsaw: Państw. Publisher. Science., 1995. - ISBN 83-01-11895-4 Introduction to artificial intelligence / Mariusz Flasiński. - Warsaw: Scientific Publisher PWN, 2011. - ISBN 978-83-01-16663-2 Academic textbook</p>                                                                                                                                                                                                                                                                                                                |                               |
|                                                                | eResources addresses                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Example issues/<br>example questions/<br>tasks being completed |                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |
| Work placement                                                 | Not applicable                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                               |