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| The title of the course | **Artificial Intelligence Methods** |
| Faculty | [Faculty of Mechanical Engineering and Computer Science](http://eng.ath.bielsko.pl/index.php/faculties/gerg) |
| The level of studies | Undergraduate (BA)  Postgraduate (MA)  Engineer (BSc) |
| Semester | Winter |
| The form of classes and number of hours | Lecture/Project (15h/30h) |
| Language of instruction | English |
| The number of ECTS | 3 |
| Teacher | Krzysztof Augustynek, PhD |
| The aims of the course | The students will learn the basics of the expert system, genetic algorithms, genetic strategies and artificial neural networks. |
| The content of the course: main topics and key ideas | 1. The expert systems 2. The classic genetic algorithm 3. The genetic algorithm with floating-point chromosome representation 4. Evolutionary programming 5. The artificial neural networks |
| Didactics methods | multimedia presentation |
| Course requirements | Exam, attendance |
| Literature (basic and supplementary) | * Russel S.J., Norvig P., Artificial Intelligence, A Modern Approach, Prentice Hall, New Jersey 2002. * Eiben A., Smith J., Introduction to Evolutionary Computing, Springer, 2007. * Goldberg D., Genetic Algorithms in Search, Optimization and Machine Learning, Addison-Wesley, 1989. * Rojas R., Neural Networks: A Systematic Introduction, Berlin: Springer-Verlag, 1996. |
| The effects of the education   * knowledge * skills * social competences | * knowledge: student has basic knowledge of expert systems, evolutionary algorithms and neural networks, knows their algorithms, assumptions and limitations, * skills: student can choose suitable the artificial intelligence methods to solve a given problem using MATLAB environment, * social competences: student is able to work in a group to describe the problem and to choose the right method to solve the problem. |