Card of the convergent teaching subject of UBB (ATH) and PU

# General data

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|  | **Subject to the UBB (ATH)** | **Subject to the PU** |
| **Field of study** | Computer Science |  |
| **Class/Subject Module Name** | Combinatorial optimization |  |
| **Class/Subject Module Cod** | IDM.06 |  |
| **Item type** | basic; mandatory |  |
| **Specialty (specialization)** | All |  |
| **Level of study** | second degree |  |
| **Form of study** | full-time studies |  |
| **Semester** | 2 |  |
| **Language(s) in which classes are carried out** | Polish (selectable English) |  |
| **Number of ECTS credits** | 4 |  |

# Forms of classes and number of hours:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Forms of classes | Lectures (W) | Diploma seminar (S) | Auditorium exercises (C) | Laboratories (Lb) | Design exercises (Pr) | Lectorate (L) |
| number of hours to the **UBB (ATH)** | 15 |  |  | 30 |  |  |
| number of hours to the PU |  |  |  |  |  |  |

# Learning outcomes related to the field of study:

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| --- | --- | --- |
| **Learning effects group** | **Learning outcomes related to the field of study**  A student who has completed a class module knows and understands/can/is ready to | |
| to the **UBB (ATH)** | to the **PU** |
| Knowledge | Student has an extended and in-depth knowledge of some branches of mathematics, including elements of plurality theory, discrete and applied mathematics, including mathematical methods for the analysis and synthesis of digital signal processing and image processing algorithms |  |
| Knowledge | Student has knowledge of computer architecture, as well as parallel computer, multi-processor computer and microcomputers. |  |
| Skills | Student is able to prepare detailed documentation concerning the implementation of the project task and to prepare the results of the implementation of this task. |  |
| Skills | Student can use English to a sufficient degree of communication, reading with understanding of technical documentation and giving a short presentation on the implementation of the project task (skills required for level B2+ of the Common European Framework of Reference for Languages). |  |
| Skills | Student is able to create a mathematical model in the field of computer science and analyse the formal description. |  |
| Social competence | Student knows the possibilities and ways of continuous further education beyond the scope of the second-degree material and understands the need to improve professional, personal and social competences. |  |
| Social competence | Student can manage a group implementing an IT project and act as an inspiring mentor for those with whom he works. |  |