GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

| | | | |
|---|---|---|---|
| Subject name and code | MSc Diploma Thesis, PG_00030020 | | |
| Field of study | Mathematics | | |
| Date of commencement of studies | October 2023 | Academic year of realisation of subject | 2024/2025 |
| Education level | second-cycle studies | Subject group | Optional subject group<br>Subject group related to scientific research in the field of study |
| Mode of study | Full-time studies | Mode of delivery | at the university |
| Year of study | 2 | Language of instruction | Polish |
| Semester of study | 4 | ECTS credits | 18.0 |
| Learning profile | general academic profile | Assessment form | assessment |
| Conducting unit | Instytut Matematyki Stosowanej -> Faculty of Applied Physics and Mathematics | | |
| Name and surname of lecturer (lecturers) | Subject supervisor | | |
| | Teachers | | |

| Lesson types and methods of instruction | Lesson type | Lecture | Tutorial | Laboratory | Project | Seminar | SUM |
|---|---|---|---|---|---|---|---|
| | Number of study hours | 0.0 | 0.0 | 0.0 | 0.0 | 60.0 | 60 |
| | 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 | 60 | 40.0 | 350.0 | 450 |

| | |
|---|---|
| Subject objectives | Organization of the master thesis writing process. Introduction of the graduates into advanced innovative technologies and creative approaches to their solutions. |

<table>
<tr><td>Learning outcomes</td><td>
<table>
<tr><th>Course outcome</th><th>Subject outcome</th><th>Method of verification</th></tr>
<tr><td>[K7_U10] In a selected field, can examine evidence, in which, if necessary, also<br>can use tools from other branches of mathematics, can identify one’s own interests and develop them; in particular, is able to establish contact with specialists in their field, e.g. understand their lectures intended for young mathematicians.</td><td>Student thinks logically</td><td>[SU1] Assessment of task fulfilment</td></tr>
<tr><td>[K7_U01] Has the ability to construct mathematical reasoning: proving theorems<br>and refuting hypotheses by constructing and selecting counterexamples, has the ability to express mathematical content in speech and in writing, in mathematical texts of various types.</td><td>Student is able to edit mathematical text</td><td>[SU1] Assessment of task fulfilment<br>[SU5] Assessment of ability to present the results of task</td></tr>
<tr><td>[K7_W03] Knows the most important theorems and hypotheses of main branches of mathematics.</td><td>Student possesses mathematical culture</td><td>[SW3] Assessment of knowledge contained in written work and projects</td></tr>
<tr><td>[K7_K04] Can form opinions on fundamental mathematical issues.</td><td>Is able to verify his theses</td><td>[SK4] Assessment of communication skills, including language correctness</td></tr>
<tr><td>[K7_K01] Knows the limitations of one’s own knowledge and understands the<br>need for further education, can independently search for information in<br>literature, also in foreign languages.</td><td>Student knows the literature of his subject</td><td>[SK5] Assessment of ability to solve problems that arise in practice<br>[SK2] Assessment of progress of work</td></tr>
</table>
</td></tr>
<tr><td>Subject contents</td><td>Solving advanced and complex particular or general tasks coming from innovative technological sectors or from pure sciences.</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>depends on the subject and speciality</td></tr>
<tr><td>Assessment methods and criteria</td><td>
<table>
<tr><th>Subject passing criteria</th><th>Passing threshold</th><th>Percentage of the final grade</th></tr>
<tr><td>diploma thesis</td><td>51.0%</td><td>100.0%</td></tr>
</table>
</td></tr>
<tr><td>Recommended reading</td><td>
<table>
<tr><td>Basic literature</td><td>No recomendations</td></tr>
<tr><td>Supplementary literature</td><td>No recomendations</td></tr>
<tr><td>eResources addresses</td><td>Adresy na platformie eNauczanie:</td></tr>
</table>
</td></tr>
<tr><td>Example issues/ example questions/ tasks being completed</td><td>Description of a disease evolution. The hazard functions of cancer diseases. Mathematical modelling of medical and pension schemes. Mathematical modelling of an enterpise, branch, society, state progress or ruin. Operator ergodic theory. Branching processes. Birth and death processes. Cancer phylogeny. Graph Theory in social-economic sciences. Chaos Theory of finanacial markets. Computer methods of innovative technologies. Statistical analysis. Game theory in biology.<br><br>Methods of nonlinear analysis.</td></tr>
<tr><td>Work placement</td><td>Not applicable</td></tr>
</table>