# COURSE DESCRIPTION CARD

<table>
<tr><td colspan="9"><b>Bialystok University of Technology<br>Faculty of Engineering Management</b></td></tr>
<tr><td><b>Field of study</b></td><td colspan="6"><b>Management</b></td><td><b>Degree level and programme type</b></td><td><b>first degree/ second degree</b></td></tr>
<tr><td><b>Specialisation/ diploma path</b></td><td colspan="6"><b>-</b></td><td><b>Study profile</b></td><td><b>-</b></td></tr>
<tr><td rowspan="2"><b>Course name</b></td><td colspan="6" rowspan="2"><b>Technology Innovation</b></td><td><b>Course code</b></td><td><b>IS-FM-00093W</b></td></tr>
<tr><td><b>Course type</b></td><td>elective</td></tr>
<tr><td rowspan="2"><b>Forms and number of hours of educational activities</b></td><td><b>L</b></td><td><b>C</b></td><td><b>LC</b></td><td><b>P</b></td><td><b>SW</b></td><td><b>FW</b></td><td><b>S</b></td><td><b>Semester</b></td><td>winter</td></tr>
<tr><td></td><td><b>30</b></td><td></td><td></td><td></td><td></td><td></td><td><b>No. of ECTS credits</b></td><td><b>5</b></td></tr>
<tr><td><b>Entry requirements</b></td><td colspan="8"><b>-</b></td></tr>
<tr><td><b>Course objectives</b></td><td colspan="8"><b>Knowledge:</b> Students acquire modern knowledge of the methods used in the process of technological innovation management.<br><b>Skills:</b> Ability to use selected methods of technology management.<br><b>Social competences:</b> Competence in presentation and discussion of prepared projects.</td></tr>
<tr><td><b>Course content</b></td><td colspan="8">The thematic blocks to be covered by the classes include: the basics of the concepts of technology, innovation, technology management, technology management framework; discussion of selected creative methods related to the search for innovation; implementation of selected creative methods; discussion of selected methods of analysis of the current state of technology development enabling identification and selection of technologies, discussion of technology readiness level scale; preparation by students technology card as part of the technology assessment process for a selected technological solution; discussion of the technology roadmapping method as a method to determine the directions of technological development and search for technological innovations; preparation by students a technological roadmap for a selected technological solution; discussing the communication aspect of innovative ideas/solutions with stakeholders; implementation by students of an exercise in the field of stakeholder communication (stakeholder mapping).</td></tr>
<tr><td><b>Teaching methods</b></td><td colspan="8">case study, presentation, discussion, project</td></tr>
<tr><td><b>Assessment method</b></td><td colspan="8">projects implementation, presentation and discussion of the projects, discussion during classes</td></tr>
<tr><td><b>Symbol of learning outcome</b></td><td colspan="6"><b>Learning outcomes</b></td><td colspan="2"><b>Reference to the learning outcomes for the field of study</b></td></tr>
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| | Knowledge: the graduate knows and understands | |
|---|---|---|
| LO1 | the graduate understands and explains basic concept related to technology innovation management | - |
| LO2 | the graduate knows and understands selected methods of technology innovation management | - |
| | **Skills: the graduate is able to** | |
| LO3 | the graduate is able to use selected creative methods in the process of searching for technological innovations | - |
| LO4 | the graduate is able to make a diagnosis of the current state of technology and determine the directions of its development using selected methods | - |
| | **Social competence: the graduate is ready to** | |
| LO5 | the graduate is ready to prepare presentations concerning technological innovations | - |
| LO6 | the graduate is ready to work out a strategy of communication with stakeholders | - |
| **Symbol of learning outcome** | **Methods of assessing the learning outcomes** | **Type of tuition during which the outcome is assessed** |
| LO1 | evaluation of discussions during classes | |
| LO2 | evaluation of discussions during classes | |
| LO3 | evaluation of discussions during classes, evaluation of project implementation and presentation | |
| LO4 | evaluation of discussions during classes, evaluation of project implementation and presentation | |
| LO5 | evaluation of discussions during classes, evaluation of project implementation and presentation | |
| LO6 | evaluation of discussions during classes, evaluation of project implementation and presentation | |

| Student workload (in hours) | | No. of hours |
|---|---|---|
| **Calculation** | Participation in the classes | 30 |
| | Preparation for the classes | 40 |
| | Consultations | 5 |
| | Independent work on projects | 50 |
| | **TOTAL:** | **125** |

| Quantitative indicators | HOURS | No. of ECTS credits |
|---|---|---|
| **Student workload – activities that require direct teacher participation** | 35 | 1,4 |
| **Student workload – practical activities** | 125 | 5 |
| **Basic references** | 1. Cetindamar D., Phaal R., Probert D.; *Understanding technology management as a dynamic capability: A framework for technology management activities*; Technovation 2009; 29; 237–246.<br>2. Sharif M. N.; *Technological innovation governance for winning the future*; Technological Forecasting and Social Change 2012; 79/3; 595-604. | |

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|---|---|
| | 3. Gudanowska A.; *Technology Mapping – Proposal of a Method of Technology Analysis in Foresight Studies*; Business: Theory and Practice 2016; 17/3; 243-250.<br>4. Phaal R., Farrukh C. J. P., Probert D. R.; *Technology Roadmapping – A planning framework for evolution and revolution*; Technological Forecasting and Social Change 2004; 71; 5-26.<br>5. beFORE E-Learning Course, http://futureoriented.eu/foresight course/course/, 2019. |
| **Supplementary references** | 1. Lowe P.; *The Management of Technology: Perception and Opportunities*; Londyn: Chapman&Hall, 1995.<br>2. Gudanowska A.; *Technology mapping as a tool for technology analysis in foresight studies*; Technology Management Conference : ITMC 2014 : IEEE International, 2014, IEEE, ISBN 978-1-4799-3312-9; 1-4.<br>3. Daim T.U., Oliver T.; *Implementing technology roadmap process in the energy services sector: A case study of a government agency*; Technological Forecasting and Social Change 2008; 75/5; 687-720. |

| Organisational unit conducting the course | International Department of Logistics and Service Engineering | Date of issuing the programme |
|---|---|---|
| **Author of the programme** | **Alicja Gudanowska, PhD** | **22.02.2022** |

**L – lecture, C – classes, LC – laboratory classes, P – project, SW – specialization workshop, FW - field work, S – seminar**