COURSE DESCRIPTION CARD

<table>
<tr><td colspan="10">Bialystok University of Technology
Faculty of Engineering Management</td></tr>
<tr><td>Field of study</td><td colspan="6">Management</td><td>Degree level and programme type</td><td>first degree/second degree</td></tr>
<tr><td>Specialisation/ diploma path</td><td colspan="6">-</td><td>Study profile</td><td>-</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Business Forecasting</td><td>Course code</td><td>IS-FM-00077W</td></tr>
<tr><td>Course type</td><td>elective</td></tr>
<tr><td rowspan="2">Forms and number of hours of educational activities</td><td>L</td><td>C</td><td>LC</td><td>P</td><td>SW</td><td>FW</td><td>S</td><td>Semester</td><td>winter</td></tr>
<tr><td></td><td>30</td><td></td><td></td><td></td><td></td><td></td><td>No. of ECTS credits</td><td>6</td></tr>
<tr><td>Entry requirements</td><td colspan="9">basic knowledge of statistics, mathematics, IT basic tools</td></tr>
<tr><td>Course objectives</td><td colspan="9">The subject is designed to get the students acquainted with the modern knowledge of forecasting and its possible way of practical applications by managers.</td></tr>
<tr><td>Course content</td><td colspan="9">The introduction of forecasting theory. The role of forecasts in business practise. Methods of business data gathering and transforming. Time series decomposition. Various kinds of forecasts methods: naive method and its modifications, moving average methods, exponential smoothing methods, Holt's method, Holt-Winters method. Measuring forecast accuracy. Time series forecasting. Advanced forecasting models.</td></tr>
<tr><td>Teaching methods</td><td colspan="9">problem tasks solved in small groups and individually, project method</td></tr>
<tr><td>Assessment method</td><td colspan="9">Project task, test of knowledge</td></tr>
<tr><td>Symbol of learning outcome</td><td colspan="7">Learning outcomes</td><td colspan="2">Reference to the learning outcomes for the field of study</td></tr>
<tr><td></td><td colspan="7">Knowledge: the graduate knows and understands</td><td colspan="2">-</td></tr>
<tr><td>LO1</td><td colspan="7">how to classify and describe forecasting methods possible to use in an enterprise</td><td colspan="2">-</td></tr>
<tr><td>LO2</td><td colspan="7">how to handle the trend, seasonal and cyclical issues in forecasting analysis.</td><td colspan="2">-</td></tr>
<tr><td></td><td colspan="7">Skills: the graduate is able to</td><td colspan="2">-</td></tr>
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LO3	evaluate the formulated forecasts and makes conclusions about their admissibility and accuracy, interprets the obtained results in terms of their further use in enterprise practice, justifies the conclusions drawn	**-**
LO4	collect and analyzes data on quantitative and qualitative variables characterizing phenomena occurring in an enterprise	**-**
LO5	construct business forecasts using various forecasting methods	**-**
LO6	apply computer tools supporting the construction of forecasts and using them	**-**
	Social competence: the graduate is ready to	**-**
LO7	Work in the group upon the common task	
Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	Individual work during classes, project report	**C**
LO2	Individual work during classes, project report	**C**
LO3	Individual work during classes, project report	**C**
LO4	Individual work during classes, project report	**C**
LO5	Individual work during classes, project report	**C**
LO6	Individual work during classes, project report	**C**
LO7	Individual work during classes, project report	**C**
Student workload (in hours)		**No. of hours**
Calculation	Participation in classes	**30**
	Participation in consultations	**10**
	Preparation to the knowledge test	**20**
	Preparing for classes	**45**
	Preparing a project task	**45**
	TOTAL:	**150**

Quantitative indicators	**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation	**40**	**1,6**
Student workload – practical activities	**110**	**4,4**

Basic references	1. Makridakis S., Wheelwright S., Hyndman R. (1998). Forecasting: Methods and Applications . Third edition, John Wiley and Sons. 2. Armstrong, J. S., ed. (2001). Principles of forecasting: a handbook for researchers and practitioners. Boston, MA: Kluwer Academic Publishers. 3. Ord, J. K. and R. Fildes (2012). Principles of business forecasting. South Western College Pub. 4. Bovas A., Ledolter J. (1983). Statistical Methods for Forecasting. New York, NY: John Wiley & Sons, Inc.

	5. Ali M., Boylan J., Syntetos A. (2015). Forecast Errors and Inventory Performance under Forecast Information Sharing, International Journal of Forecasting 28 (4): 830–41. 6. Diebold, Francis X. Elements of forecasting. South-Western College Pub. (latest version) 7. Bowerman, Bruce L., Richard T. O'Connell, and Anne B. Koehler. Forecasting, time series, and regression: an applied approach. (latest version)	
Supplementary references	1. Hyndman, R.j. Koehler, A. B. (2006), Another look at measures of forecast accuracy, International Journal of Forecasting, 22(4): 679-688 2. Winkowski C. (2019), Classification of forecasting methods in production engineering, Engineering Management in Production and Services 11 (4): 23-33 3. Hanke, John E., Arthur G. Reitsch, and Dean W. Wichern. Business forecasting. Vol. 9. Upper Saddle River, NJ: Prentice Hall. (latest version) 4. Wilson, J. Holton. Business forecasting. Tata McGraw-Hill Education (latest version)	
Organisational unit conducting the course	International Departament of Logistics and Service Engineering	**Date of issuing the programme**
Author of the programme	Justyna Kozłowska, PhD	22.02.2022

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