COURSE DESCRIPTION CARD – SPECIMEN

<table>
<tr><td colspan="10">Bialystok University of Technology</td></tr>
<tr><td>Field of study</td><td colspan="6">Civil Engineering</td><td>Degree level and programme type</td><td>Bachelor's degree
full-time</td></tr>
<tr><td>Specialization/ diploma path</td><td colspan="6">-</td><td>Study profile</td><td>academic profile</td></tr>
<tr><td rowspan="2">Course name</td><td colspan="6" rowspan="2">Technical drawing and engineering graphics</td><td>Course code</td><td>EN-B1S11007</td></tr>
<tr><td>Course type</td><td>obligatory</td></tr>
<tr><td rowspan="2">Forms and number of hours of tuition</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>I</td></tr>
<tr><td>15</td><td></td><td></td><td></td><td>30</td><td></td><td></td><td>No. of ECTS credits</td><td>4</td></tr>
<tr><td>Entry requirements</td><td colspan="9">–</td></tr>
<tr><td>Course objectives</td><td colspan="9">To familiarize students with the role and principles of technical drawing in construction. Developing the ability to use traditional methods to reproduce geometric, material, and technological features of building objects and their elements in the field of activity of a construction engineer. Presentation of the possibilities of CAD techniques and their practical application to transfer information between individual participants in the construction process. Developing the ability to prepare graphic documentation in traditional and computer technical construction drawings.</td></tr>
<tr><td>Course content</td><td colspan="9">Lecture: Definitions and the most important standards for technical construction drawing. Types of construction drawings, drawing sheet formats and their graphic form, technical lettering, types of lines and their application, graphic symbols of building materials and elements and the equipment. Projection methods, rules for making plans and sections in a construction drawing, development plan for a building plot. Technical drawing of reinforced concrete, steel and wooden structures and the basis of the drawing of installations in the building.
Specialization workshop: Introduction to using the CAD software. 2D drawing using the features of drawing objects. Basics of 3D drawing with the use of layers. An example of a construction drawing (plan of a staircase with description and dimensioning). Technical lettering and selected graphic symbols in the construction drawing. The floor plan of a single-family residential building. Drawing of the staircase of a multi-family building - plan and vertical section.</td></tr>
<tr><td>Teaching methods</td><td colspan="9">lecture, multimedia presentations, specialization workshop - computer lab, practical drawings, didactic examples</td></tr>
<tr><td>Assessment method</td><td colspan="9">Lecture: written test
Specialization workshop: preparing and passing the drawings provided in the program of subject, a test on the practical skills of using the AutoCAD</td></tr>
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Symbol of learning outcome	Learning outcomes	Reference to the learning outcomes for the field of study
LO1	The student understands the need to use CAD tools to support the process of graphic mapping of a building object or structure and can use the selected program in practice.	K_B1_W02 K_B1_U03
LO2	The student has the knowledge and skills in the field of graphic modeling and dimensioning of buildings with the use of traditional and computer techniques.	K_B1_W05 K_B1_U03
LO3	The student has knowledge of preparing graphic documentation for construction projects.	K_B1_W06
LO4	The student knows the formal requirements for the preparation of graphic documentation of a construction project.	K_B1_W06
LO5	The student is able to assess his knowledge in the field of construction technical drawing and engineering graphics, as well as is ready to learn in this field, in particular related to the use of modern CAD techniques.	K_B1_K01 K_B1_K06
Symbol of learning outcome	**Methods of assessing the learning outcomes**	**Type of tuition during which the outcome is assessed**
LO1	preparation of drawings included in the program of subject, written evaluation	SW
LO2	passing the written test of the lecture, preparation of drawings included in the program of subject, written evaluation	L, SW
LO3	passing the written test of the lecture, preparation of drawings included in the program of subject	L, SW
LO4	passing the written test of the lecture, preparation of drawings included in the program of subject	L, SW
LO5	passing the written test of the lecture, preparation of drawings included in the program of subject, written evaluation	L, SW
Student workload (in hours)		**No. of hours**
Calculation	lecture attendance	15
	participation in a specialization workshop	30
	preparation for drawings using the traditional method	20
	preparation for practical classes (specialization workshop) on the use of CAD techniques	13
	preparation to pass the lectures and attendance (9h + 1h passing the lecture)	10
	preparation for completing the specialization workshop	20
	consultations	2

	TOTAL:	**110**	
Quantitative indicators		**HOURS**	**No. of ECTS credits**
Student workload – activities that require direct teacher participation		48	2
Student workload – practical activities		95	3,5
Basic references	1. European national standards (ISO) connected to technical documentation, lettering, general principles of presentation, construction drawings -designation systems, technical product documentation -sizes and layout of drawing sheets, indication of dimensions and tolerances, scales, construction drawings - general principles of presentation for general arrangement and assembly drawings, spaces for drawing and for text, and title blocks on drawing sheets. 2. AutoCAD User's Guide, Autodesk, 2012. 3. Kilmer W.O., Kilmer R., Construction drawings and details for interiors: Basic skills, Wiley, 2003 (pdf).		
Supplementary references	1. Markiewicz-Zahorski Przemysław, "Building construction, solution & details for professionals", Polygraphy Department of the Cracow University of Technology, 2019. 2. Colin H. Simmons, Dennis E. Magire, Nail Phelps: Manual of engineering drawing, Amsterdam Newnes 2009. 3. Technical requirements for buildings (https://epbd-ca.eu/ca-outcomes/outcomes-2015-2018)		
Organisational unit conducting the course	Department of Energy-Efficient Construction and Geodesy	**Date of issuing the programme**	
Author of the programme	Beata Sadowska, PhD, Eng.	01.10.2019	

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