GDAŃSK UNIVERSITY OF TECHNOLOGY

Subject card

Subject name and code	CAD/CAM Systems, PG_00064981		
Field of study	Transport and Logistics		
Date of commencement of studies	February 2027	Academic year of realisation of subject	2026/2027
Education level	second-cycle studies	Subject group	Obligatory subject group in the field of study 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	1	Language of instruction	Polish
Semester of study	1	ECTS credits	4.0
Learning profile	general academic profile	Assessment form	assessment
Conducting unit	Division of Applied Computer Science -> Institute of Naval Architecture -> Faculty of Mechanical Engineering and Ship Technology -> Faculties of Gdańsk University of Technology		
Name and surname of lecturer (lecturers)	Subject supervisor	dr inż. Aleksander Kniat	
	Teachers	dr inż. Aleksander Kniat	

Lesson types

Lesson type	Lecture	Tutorial	Laboratory	Project	Seminar	SUM
Number of study hours	30.0	0.0	0.0	30.0	0.0	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	10.0	30.0	100

Subject objectives

The aim of the subject is to prepare students for applying CAD programs in design and modelling of transportation objects and systems

Learning outcomes

Course outcome	Subject outcome	Method of verification
[K7_U13] evaluates the feasibility and potential for utilizing new technical and technological achievements in accomplishing tasks characteristic for the field of study	Student can assess applicability of a CAD/CAM program in a specific task.	[SU3] Assessment of ability to use knowledge gained from the subject [SU2] Assessment of ability to analyse information
[K7_U04] creatively designs or modifies, either entirely or at least in part, a transport system or process according to a given specification, considering both technical and non-technical aspects, estimating costs and utilizing design techniques appropriate for tasks within the scope of Transport and Logistics	Student can use a CAD/CAM program for designing or modelling of transportation objects and systems.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[K7_U11] communicates and justifies opinions on specialized topics in a manner understandable to diverse audiences, including the use of modern techniques, including information technology	Student presents a design in a CAD/CAM program.	[SU1] Assessment of task fulfilment [SU4] Assessment of ability to use methods and tools
[K7_W12] identifies and interprets the main developmental trends and significant new achievements in the field of engineering and technical sciences and disciplines relevant to the course of study	Student understands how to use a CAD/CAM program to enhance a design process.	[SW1] Assessment of factual knowledge

<table>
<tr><td>Subject contents</td><td>Course content – lecture

Prepearation of 2D documentation - CAD program interface.

Preparation of a 3D model and CAD program interface: ribbon bars, features tree, changing features parameters.

3D objects: sketches, curves, surfaces, solids.

Part creation: solid creation methods (extrusion, lofted extrusion, revolution), cutouts and holes, curve and surface definition, projection, intersection.

Parameterization: constraints and dimensions, driving and driven dimensions, parts" family.

Assembly creation: loading parts and subassemblies, positioning parts and subassemblies relations, dimensions" control, part modification from assembly.

Motion simulation and preparation for numeric calculations.

Drawings and documentation: loading views and projections, cross-sections, dimensioning, drawing modification</td></tr>
<tr><td>Prerequisites and co-requisites</td><td>Proficiency in using PC computer.
Completed course of Mathematics for mechanical engineers.</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>exercises completion</td><td>60.0%</td><td>100.0%</td></tr>
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<tr><td>Recommended reading</td><td><table>
<tr><td>Basic literature</td><td>Farin G., Hoschek J., Kim M., Handbook of computer aided geometric design, Elsevier

Lee K., Principles of CAD/CAM/CAE systems, Addison-Wesley Longman</td></tr>
<tr><td>Supplementary literature</td><td>electronic documentation for AutoCAD, Solid Edge and NX</td></tr>
<tr><td>eResources addresses</td><td></td></tr>
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<tr><td>Example issues/ example questions/ tasks being completed</td><td>technical drawings of a controllable pitch propeller parts

3D model of a controllable pitch propeller assembly</td></tr>
<tr><td>Practical activites within the subject</td><td>Not applicable</td></tr>
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