STUDY MODULE DESCRIPTION FORM

Name of the module/subject **Computer Graphic**	Code **1010601321010650180**

Field of study **Transport**	Profile of study (general academic, practical) **(brak)**	Year /Semester **1 / 2**

Elective path/specialty **-**	Subject offered in: **Polish**	Course (compulsory, elective) **obligatory**

Cycle of study: **First-cycle studies**	Form of study (full-time,part-time) **full-time**

No. of hours

Lecture: **-**	Classes: **-**	Laboratory: **2**	Project/seminars: **-**	No. of credits **4**

Status of the course in the study program (Basic, major, other) **(brak)**	(university-wide, from another field) **(brak)**

Education areas and fields of science and art **technical sciences** **Technical sciences**	ECTS distribution (number and %**)** **4 100%** **4 100%**

Responsible for subject / lecturer:

Rafał Mostowski Ph.D.
email: Rafal.Mostowski@put.poznan.pl
tel. 616652257
Transport Engineering
ul. Piotrowo 3, 60-965 Poznań

Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Student has a basic knowledge in the field of engineering graphics. Student knows how to use Windows operating system and understands basic concepts associated with this working environment.
2	**Skills**	Student can use a computer and peripheral devices. Student can use gained knowledge to analyse particular practical problems and quickly make decisions. Student has good imagination and three-dimensional orientation.
3	**Social competencies**	Student can cooperate with the group. Student can define tasks and priorities of fulfilling them. Student shows independence in solving problems and gaining and perfecting acquired knowledge and skills.

Assumptions and objectives of the course:

The aim of the subject is to pass information about the rules of modern CAD systems? working and essential methods of three-dimensional modelling to students. Students acquire the knowledge about systems used to design automation and skills of proper designing of three-dimensional models and creating associated technical documentation.

Study outcomes and reference to the educational results for a field of study

Knowledge:

1. knows the basic techniques, methods (parametricas solid modelling) and tools (parametrical solid models creation systems and technical documentation paired with them) used in the process of solving tasks pertaining transport, notably tasks of engineering character - [T1A_W07]

Skills:

1. can acquire information from various sources, including literature and databases, either in Polish or in English, integrate them correctly, interpret and critically analyse them, make conclusions and comprehensively explain their opinions - [T1A_U01]

2. is able to design (create the model of a fragment of reality) according to specification, create functional specification in the form of use cases, formulate the non-functional requirements for chosen quality characteristics and create a device or a system from the area of transport, using appropriate methods, techniques, and tools - [T1A_U10]

3. possesses the ability to formulate tasks pertaining transport engineering and to implement them using at least one of the popular tools - [T1A_U11]

4. can organise, co-operate and work in group, assuming various roles and is able to determine priorities in order to complete tasks determined either by themselves or an outside party - [T1A_U18]

Social competencies:

1. understand that in engineering knowledge and skills rapidly become obsolete - [T1A_K01]

2. is aware of the significance of knowledge in solving engineering problems - [T1A _K02]

3. is aware of the social role of the graduate from technical university, notably understands the need to phrase ? in appropriate form ? the information and opinions pertaining engineer?s endeavours, technological advancements and works and tradition of transport engineer and pass it on to the society - [T1A_K04]

Assessment methods of study outcomes
Current grading of design tasks done. Summary ? credit

Course description
Tools used to automation of designing and their characteristic features: operations, parametric solid models, associations in created documents, solid models? receptivity to being changed, sketching and applied operations, sketch?s geometry, sketch?s relations, sketch?s state, creation of parts, criteria of choosing initial profile, operations of addition and cutting, hole wizard, modifying operations, modelling of casts and forgings, using the mirror entities sketch tool, using the existing geometry to create sketched operations, duplicating the operations, operations of turning, using the integrated tool to perform a simple strength analysis, creation of shell elements, edition, fixing and changing existing projects, multiplying variations of parts, creation technical documentation, techniques of creating, analysis and using the assemblies

Basic bibliography:

1. Domański J.: SolidWorks 2017 Projektowanie maszyn i konstrukcji, Wydawnictwo Helion 2017

Additional bibliography:

1. SolidWorks Essentials (Podstawy), Dassault Systmes SolidWorks Corporation

Result of average student's workload	
Activity	**Time (working hours)**
1. Preparation to the classes	40
2. Participation in classes (according to the plan)	30
3. Revision of the classes? content / report	10
4. Consultations	8
5. Preparation to exam / credit	10
6. Participation in the exam / credit	2

Student's workload		
Source of workload	**hours**	**ECTS**
Total workload	100	4
Contact hours	40	2
Practical activities	100	4