STUDY MODULE DESCRIPTION FORM

Name of the module/subject		Code
Computer Aided Designing		**1010401141010210546**
Field of study	Profile of study (general academic, practical)	Year /Semester
EDUCATION IN TECHNOLOGY AND	**(brak)**	**2 / 4**
Elective path/specialty	Subject offered in:	Course (compulsory, elective)
-	**Polish**	**obligatory**
Cycle of study:	Form of study (full-time,part-time)	
First-cycle studies	**full-time**	
No. of hours		No. of credits
Lecture: **1** Classes: **-** Laboratory: **2** Project/seminars: **-**		**3**
Status of the course in the study program (Basic, major, other)	(university-wide, from another field)	
(brak)	**(brak)**	
Education areas and fields of science and art		ECTS distribution (number and %)
technical sciences		**3 100%**

Responsible for subject / lecturer:

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Prerequisites in terms of knowledge, skills and social competencies:

1	**Knowledge**	Fundamental knowledge in mathematics, with particular consideration of analytic geometry and vectors calculus. Knowledge in the range of technical mechanics and the elements of strength of materials, knowledge of the rules of technical drawing and making technical documentation.
2	**Skills**	The skill in technical drawing reading, spatial imagination, the skill in extracting information from properly selected sources.
3	**Social competencies**	Understanding the need of enlarging his/her competences, ability to cooperate and work in a team

Assumptions and objectives of the course:

1. Teaching the fundamentals of modeling and designing the constructions, in the scope defined by the curriculum of the studies
2. Developing student? skill in 3D modeling of any details of the parts and assemblies with the help of CAD software
3. Acquirement of the skill of proper estimation and optimization of the designed construction.
4. Expanding student?s skill in working in a team

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

Knowledge:

1. The student credited with the course is able to choose proper methods of 3D modeling of the objects, can independently design any machine part, is acquainted with the methods of modeling of a complex structure including formerly prepared part models, is able to formulate technical documentation of the design - [-]
2. Is able to assess properly the designed structure with regard to its strength and stability, is acquainted with the methods of structural optimization, - [-]
3. Is able to make use of basic knowledge in the scope of computer aided technical education. - [-]

Skills:

1. The student credited with the course is able to use the mechanisms of 3D modeling of the objects, can independently design any machine part and a complex structure including formerly prepared part models, is able to carry out technical documentation of the design - [-]
2. Is able to assess properly the designed structure, to analyze its strength and optimize it. - [-]
3. Is able to make use of the computer software for aiding the designing process (e.g. CAD). - [-]

Social competencies:

1. The student credited with the course is able to elaborate the task individually and to cooperate in a team, assuming various roles. He/she shows professionalism in the work and responsibility for the decisions he/she takes. - [-]
2. Follows the rules of fundamental professional ethics. - [-]
3. Is able to think and act in an entrepreneurial and innovative way. - [-]

Assessment methods of study outcomes
- Written test
- Appraisal of student?s activity and skills during laboratory lessons
- Appraisal of the laboratory exercise
Course description
- Familiarization with the symbolic transformation program ? DERIVE 6.
- Solving typical problems of technical mechanics and strength of materials with the use of the program.
- Familiarization with SolidWorks software, helpful in structural modeling.
- Examples of modeling of various machine parts. Modeling of solids and surfaces.
- Modeling of complex machine assemblies and mechanisms.
- Animation of mechanisms motion.
- Strength appraisal of the modeled parts and their assemblies, with the use of Finite Element Method.
Basic bibliography:
1. Babiuch M.:Solid Works 2006 w praktyce, Wydawnictwo HELION, Gliwice, 2007
2. Kutzler B., Kokol-Volic V.; Wprowadzenie do programu Derive-6, MES-Print, Kraków, 2005
Additional bibliography:
1. Dobrzański T.: Rysunek techniczny maszynowy, WNT, Warszawa, 2002

Result of average student's workload

Activity	**Time (working hours)**

Student's workload

Source of workload	**hours**	**ECTS**
Total workload	111	3
Contact hours	48	2
Practical activities	63	1