Subject programme

1. Subject name / subject module: **Advanced Computer Aided Design**
2. Lecture language: **English**
3. **The location of the subject in study plans:**
   - Area or areas of the studies: Computer Engineering and Mechatronics
   - Degree of the studies: **1st degree studies**
   - Field or fields (implementation of effects standard): **Mechatronics**
4. Supervision of subject implementation:
   - The Institute / Another unit: **Institute of Informatics and Mechatronics**
   - The person responsible for the subject: **Dudziak Piotr, dr inż.**
   - People cooperating in the development of the programme of the subject:
5. The number of hours and forms of teaching for individual study system and the evaluation method

Teaching activities with the tutor																						
Mode of study	Form of classes																					Total
		SOW	ECTS	Laboratory work	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	...	SOW	ECTS	ECTS
Full-time studies				27	36	2,5																2,5
Part-time studies																						
Credit rigor	...			graded assignment																		

6. Student workload – ECTS credits balance
   1 ECTS credit corresponds to 25-30 hours of student work needed to achieve the expected learning outcomes including the student's own work

Activity (please specify relevant work for the subject)	**Hourly student workload (full-time studies/part-time studies)**
Participation in laboratory classes	**27**
Preparing final project	**25**
Independent study of the subject	**9**
Participation in an exam / graded assignment / final grading	**2**
Total student workload (TSW)	**63**
ECTS credits	**2,5**
* Student's workload related to practical forms	**63**
Student's workload in classes requiring direct participation of academic teachers	**27**

7. Implementation notes: recommended duration (semesters), recommended admission requirements, relations between the forms of classes:

   None

   Recommended duration of the subject is taken from the course plan.

8. Specific learning outcomes – knowledge, skills and social competence

Specific learning outcomes for the subject		**Form**	**Teaching method**	**Methods for testing of (checking, assessing) learning outcomes**
Outcome symbol	**Outcome description**			
Knowledge				
K_W06	**Student knows and understands selected specific issues in the field of advanced computer aided design related to designing parts, sheet metal parts as well as creating 2D and 3D documentation. Student knows how to apply selected software.**	**Laboratory work**	**inquiry methods, expository methods**	**Tasks during classes, final project**
Skills				
K_U02	**Student is able to use knowledge and perform tasks typical for professional advanced design activity in the mechatronics industry**	**Laboratory work**	**inquiry methods, expository methods**	**Tasks during classes, final project**

K_U07	Student is able to use information with particular emphasis on the creation of project advanced 2D/3D documenatation. Student is able to use selected computer aided design software in purpose of implementing advanced designing tasks in the field of			

9. Assessment rules / criteria for each form of education and individual grades

0% - 50%	ndst	**81% - 90%**	db
51% - 70%	dst	**91% - 93%**	db+
71% - 80%	dst+	**94% - 100%**	bdb

Activity	Grades	Calculation	To Final
Tasks during classes	**bdb (5)**	**5*10%**	**0,5**
Attendance	**6 na 8**	**5*10%**	**0,5**
Final project	**bdb (5)**	**5*80%**	**4**

10. The learning contents with the form of the class activities on which they are carried out

(Laboratory work)

1. Advanced solid modeling: parts, sheet metal parts;

2. Advanced surface modeling: parts, sheet metal parts;

3. Creating 3D documentation of assemblies (advanced);

4. Creating 2D documentation of assemblies (advanced);

5. Creating 2D executive documentation;

6. Advanced frames;

7. Advanced weldment construction

11. Required teaching aids

Laboratory classes - specialist laboratory

12. Literature:

a. Basic literature:

Lombard M.: Solid Edge with synchronous technology, Siemens AG, 2017.
Stroud I., Nagy H.: Solid Modelling and CAD Systems, Springer, 2011.

a. Supplementary literature:

White T., Nagy T., Dick B.: Siemens Engineering Design, Siemens Digital Industries Software, 2020.

b. Internet sources:

https://solidedge.siemens.com/en/resources/resource-library/

13. Available educational materials divided into forms of class activities (Author's compilation of didactic materials, e-learning materials, etc.)

14. Teachers implementing particular forms of education

Form of education	Name and surname
1. Laboratory classes	Dudziak Piotr, dr inż.