Subject programme

1. Subject name / subject module: **Elective Subject: Introduction to 3D Design**
2. Lecture language: **English**
3. The location of the subject in study plans:
   - Area or areas of the studies: **Computer Control Systems Engineering**
   - Degree of the studies: **2nd 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: **Skiba Małgorzata, mgr 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:

Mode of study	Teaching activities with the tutor												Total
	Form of classes												
	Lecture	SOW	ECTS	…	SOW	ECTS	…	SOW	ECTS	…	SOW	ECTS	ECTS
Full-time studies	24	51	3										3
Part-time studies													
Credit rigor	Graded assigment			Graded assigment									

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 lectures	24
Participation in laboratory classes	-
Independent study of the subject	34
Preparation of final project	15
Participation in an exam / graded assignment	2
Total student workload (TSW)	75
ECTS credits	3
* Student's workload related to practical forms	15
Student's workload in classes requiring direct participation of academic teachers	24

7. Implementation notes: recommended duration (semesters), recommended admission requirements, relations between the forms of classes:
   - Recommended admission requirements – 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_W04	**A student has a structured and theoretically founded knowledge in the field of modeling 3D objects, covering key issues and selected issues in the field of advanced detailed knowledge as well as the practical application of this knowledge.**	Lecture	Expository methods	Student learning activities
Skills				
K_U02	**Student is able to use information and communication technologies (ICT) with particular emphasis on the development of project documentation and the use of 3D graphics.**	Lecture	Expository methods	Student learning activities
Social competence				
K_K01	**A student is ready to critically assess the acquired knowledge and received content, understands the need for continuous improvement in 3D modelling, can set directions and areas of personal professional self-improvement, and inspire and organize the learning process of other people.**	Lecture	Expository methods	Student learning activities

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

Activity	Grades	Calculation	To final
Final project	bdb (5)	5*80%	4,0
Attendance	on 70% of all classes	0,70 * 5 -> 3,5*20%	0,7
Final result			4,70

0 – 3.00	ndst	4.01 – 4.50	db
3.01 – 3.50	dst	4.51 – 4.7	db+
3.51 – 4.00	dst+	4.71 – 5.0	bdb

10. The learning contents with the form of the class activities on which they are carried out:
    (Lecture)
    1. Introduction to 3D coordinates;
    2. Interface overview;
    3. Selecting, creating and editing objects;
    4. Transforming objects;
    5. Managing scenes, files and projects;
    6. Modelling: Polygonal Modeling, Sculpting;
    7. Lighting and shading: Applying color and shader to an object, Creating materials, Texture mapping and previewing;
    8. Rendering: Quality, Render speed, Diagnostics.

11. Required teaching aids:
    a. Lecture - multimedia projector.
    b. Laboratory classes - specialist laboratory.

12. Literature:
    a. Basic literature:
        Lance Flavell, "Beginning Blender", Springer, 2010
        Brian L. Smith, "Foundation 3ds Max 8 Architectural Visualization", Springer, 2006
    b. Supplementary literature:
        None
    c. Internet sources:

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. Lecture	Skiba Małgorzata, mgr inż.
2. Laboratory classes	