SYLLABUS

1. Information regarding the programme

1.1 Higher education institution	**Babeş-Bolyai University**
1.2 Faculty	**Faculty of Mathematics and Computer Science**
1.3 Department	**Department of Computer Science**
1.4 Field of study	**Computers and Information Technology**
1.5 Study cycle	**Bachelor**
1.6 Study programme / Qualification	**Information Engineering**

2. Information regarding the discipline

2.1 Name of the discipline (en) (ro)			**Computer Aided Graphics 2** **Grafica asistata de calculator 2**				
2.2 Course coordinator			L.Ph.d.eng. Praisach Zeno Iosif				
2.3 Laboratory coordinator			L.Ph.d.eng. Praisach Zeno Iosif				
2.4. Year of study	**I**	2.5 Semester	**2**	2.6. Type of evaluation	**C**	2.7 Type of discipline	**Compulsory DF**
2.8 Code of the discipline		MLE7026					

3. Total estimated time (hours/semester of didactic activities)

3.1 Hours per week	4	Of which: 3.2 course	2	3.3 ~~seminar~~/laboratory	2 LP
3.4 Total hours in the curriculum	56	Of which: 3.5 course	28	3.6 ~~seminar~~/laboratory	28
Time allotment:					44 hours
Learning using manual, course support, bibliography, course notes					27
Additional documentation (in libraries, on electronic platforms, field documentation)					5
Preparation for seminars/labs, homework, papers, portfolios and essays					8
Tutorship					0
Evaluations					2
Other activities:					2

3.7 Total individual study hours	44
3.8 Total hours per semester	100
3.9 Number of ECTS credits	4

4. Prerequisites (if necessary)

4.1. curriculum	• Notions of technical drawing
4.2. competencies	•

5. Conditions (if necessary)

5.1. for the course	•
5.2. for the ~~seminar~~ /lab activities	• Knowledge of laboratory work

6. Specific competencies acquired

Professional competencies	• CP3.1 - Identifying classes of problems and solving methods that are specific to computing systems. • CP3.5 - Developing and implementing information system solutions for concrete problems.
Transversal competencies	• CT1 – Honorable, responsible, ethical behavior, in the spirit of the law, to ensure the professional reputation. • CT3 - Demonstrating initiative and pro-active behavior for updating professional, economical and organizational culture knowledge.

7. Objectives of the discipline (outcome of the acquired competencies)

7.1 General objective of the discipline	• Improving the skills of constructive design of components used in engineering. • Assimilation by students of computer-aided design technique and parametric partitioning of parts, with application on the SoidWorks software.
7.2 Specific objective of the discipline	• Assimilation of the interface, the way of working and the commands specific to the SolidWorks software. • Creating parametric surfaces and solids generation capabilities in the SolidWorks software. • Creating the skills to generate parts, assemblies and execution drawings in the SolidWorks software.

8. Content

8.1 Course	Teaching methods	Remarks
1. SolidWorks interface.	Exposure, problematization, heuristic conversation, explanation, challenging students to dialogue	2 hours
2. Sketches. Blocks. Relations. Settings. Reference geometries. 3D sketches..		4 hours
3. Parts. Generation of entities by extrusion.		2 hours
4. Parts. Generating entities through revolution and sweep		2 hours
5. Parts. Generation of entities through loft type.		2 hours
6. Parts. Pattern and fillet entities.		2 hours
7. Parts. Rectangular and circular patterns of entities. Mirroring entities.		2 hours
8. Assembly. Constraints.		2 hours
9. Assembly. Configurations. Exploded assembly		2 hours

10. Drawings. Creating standardized views.		2 hours
11. Drawings. Generating sectional views. Generating details.		2 hours
12. Drawings. Dimensioning and annotation of drawings.		2 hours
13. Drawings. Table of content and positioning of parts.		2 hours

Bibliography

- Nedelcu D., *Proiectare numerica si simulare cu SolidWorks,* Editura Eurostampa, Timisoara, 2011, ISBN 978-606-569-276-3;
- Nedelcu D., *Aplicatii 2D/3D`de proiectare asistata de calculator,* Editura Orizonturi Universitare, Timisoara, ISBN 973-638-037-8;
- Nedelcu D., *Modelare parametrica prin Autodesc Inventor,* Editura Orizonturi Universitare, Timisoara, 2004, ISBN 973-638-116-1;
- Filip V., Marin C., Gruionu L., Negrea A., *Proiectarea, modelarea si simularea sistemelor mecanice, utilizand SolidWorks, CosmosMotion si CosmosWorks,* Valahia University Press, Targoviste, 2008, ISBN 978-973-1955-05-06;
- Lombard M., *SolidWorks 2010 Bible,* Wiley Publishing Inc., Indianapolis, IN-46256, 2010;
- Bethune J., *Engineering Design and Graphics with SolidWorks 2009,* Pearson Education, Inc., NJ 07458, Prentice Hall, Columbus, Ohio.

8.2 ~~Seminar~~ / laboratory	Teaching methods	Remarks
1. Specific problems of laboratory work safety technique. SolidWorks design environment. Creating of the 3D model for "Bearing support" (application 4.14 from [2]);	Practical applications from bibliographic references [1], [2] and [3] created using SolidWorks. The teacher's examples are made with the video projector.	2 hours
2. Creating of the 3D model and drawing for the “Flange” part (application 2.4 from [3]);		2 hours
3. Creating of the 3D model and drawing for the “Fork” part (application 4.11 from [2]);		2 hours
4. Creating of the 3D model and drawing for the “Jaw” part (application 2.3 from [3]);		2 hours
5. Creating of the 3D model and drawing for the "Inclined guide" (application 2.12 of [3]);		2 hours
6. Creating of the 3D model and drawing for the "Handle" (application 2.14 of [3]);		2 hours
7. Creating of the 3D model and drawing for the "Housing" (application 4.21 from [2]);		2 hours
8. Creating of the 3D model and drawing for the "Vise Body" (application 2.2 of [1]);		2 hours
9. Creating of the 3D model and drawing for the "Handwheel" (application 2.18 from [3]);		2 hours
10. Creating of the 3D model and determination of inertial properties at the "Pelton turbine rotor blade" (application 3.2 of [1]);		2 hours
11. Creating of the "Winch" assembly (application 1 of [1]);		2 hours
12. Creating of the "Vise" assembly (application 2 of [1]);		2 hours
13. Creating of the "Pelton turbine rotor" assembly		2 hours

(application 3 of [1]);		
14. Completion of laboratory activities.		2 hours

Bibliography

- Nedelcu D., *Proiectare numerica si simulare cu SolidWorks,* Editura Eurostampa, Timisoara, 2011, ISBN 978-606-569-276-3;
- Nedelcu D., *Aplicatii 2D/3D`de proiectare asistata de calculator,* Editura Orizonturi Universitare, Timisoara, ISBN 973-638-037-8;
- Nedelcu D., *Modelare parametrica prin Autodesc Inventor,* Editura Orizonturi Universitare, Timisoara, 2004, ISBN 973-638-116-1;
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- Bethune J., *Engineering Design and Graphics with SolidWorks 2009,* Pearson Education, Inc., NJ 07458, Prentice Hall, Columbus, Ohio;
- Lombard M., *SolidWorks 2010 Bible,* Wiley Publishing Inc., Indianapolis, IN-46256, 2010.

9. Corroborating the content of the discipline with the expectations of the epistemic community, professional associations and representative employers within the field of the program

- They have been established with the main employers by previous discussions at the study programme substantiation

10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share in the grade (%)
10.4 Course	Participating in debates	Number of interventions	10 %
	Level of knowledge gained	Exam (oral)	60 %
10.5 ~~Seminar~~/lab activities	Involvement in activities	Interventions	10 %
	The level of practical skills acquired	Interactive	20 %
10.6 Minimum performance standards			
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Date	Signature of course coordinator	Signature of seminar coordinator
05.2022	L.Ph.d.eng. Praisach Zeno Iosif	L.Ph.d.eng. Praisach Zeno Iosif

Date of approval

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24.05.2022

Signature of the head of department

Prof. dr. Laura Dioşan