

SYLLABUS¹

1. Information about the program

1.1 Higher education institution	"POLITEHNICA" UNIVERSITY FROM TIMISOARA
1.2 Faculty ² / Department ³	MECHANICAL ENGINEERING/ MCTR
1.3 Chair	—
1.4 Field of study (name/code ⁴)	MEChATRONICS AND ROBOTICS/390 - 469
1.5 Study cycle	Master
1.6 Study program (name/code/qualification)	Ergoengineering in mechatronics/441/engineer

2. Information about the discipline

2.1 Name of discipline	"HUMAN CENTRED DESIGN"						
2.2 Coordinator (holder) of course activities	Lecturer Ph.D. Eng. Mihaela JULA						
2.3 Coordinator (holder) of applied activities ⁵	Lecturer Ph.D. Eng. Mihaela JULA						
2.4 Year of study ⁶	1	2.5 Semester	2	2.6 Type of evaluation	E	2.7 Type of discipline	DCA

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

3.1 No. of hrs. / week	4 , of which:	3.2 course	2	3.3 seminar/laboratory/ project/training	2
3.4 Total no. of hrs. in the education curricula	56 , of which:	3.5 course	28	3.6 applied activities	28
3.7 Distribution of time for individual activities related to the discipline					hrs.
Study using a manual, course materials, bibliography and lecture notes					15
Additional documentation in the library, on specialized electronic platforms and on the field					15
Preparation for seminars / laboratories, homeworks, assignments, portfolios, and essays					15
Tutoring					15
Examinations					8
Other activities					7
Total hrs. of individual activities					75
3.8 Total hrs. / semester ⁷	131				
3.9 No. of credits	8				

4. Prerequisites (where applicable)

4.1 Curriculum	•
4.2 Competencies	•

5. Conditions (where applicable)

5.1 of the course	•
5.2 to conduct practical activities	•

6. Specific competencies acquired

¹ The form corresponds to the Syllabus promoted by OMECTS 5703/18.12.2011 (Annex3).

² The name of the faculty which manages the educational curriculum to which the discipline belongs.

³ The name of the department entrusted with the discipline, and to which the course coordinator / holder belongs.

⁴ Fill in the code provided in GD no. 493/17.07.2013.

⁵ The applied activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).

⁶ The year of study to which the discipline is provided in the curriculum.

⁷ It is obtained by summing up the number of hrs. from 3.4 and 3.7.

Professional competencies ⁸	<ul style="list-style-type: none"> • Hardware ergonomics. Human –machine relation • Workplace ergonomics. Human involved in work process • Environment ergonomic. Human-environment relation • Cognitive ergonomics. in scientific research
Transversal competencies	<ul style="list-style-type: none"> • Completing ergoengineering tasks, with previsions of the design process and the problems encountered and choosing and recognizing the useful information in order to solve those problems

7. Objectives of the discipline (based on the grid of specific competencies acquired)

7.1 General objective of the discipline	<ul style="list-style-type: none"> • The discipline’s purpose is to provide for students knowledge and skills necessary to approach workplace ergonomics projects based on the human – machine – environment system analysis, with the identification of human needs and limitations as first priority. Because it is easier to adapt the machine to human than to adapt the human to machine, the ergonomist’s perspective is centred on the changes of the machine.
7.2 Specific objectives	<ul style="list-style-type: none"> •

8. Content

8.1 Course	No. of hours	Teaching methods
1. Introduction. Principles of Human Centered Design; Examples; Human Centered Design vs User Centered Design	4	PowerPoint lecture presentations, discussions, applications, examples, case studies
2. Development process. .	2	PowerPoint lecture presentations, discussions, applications, examples, case studies
3. Usability, standards, methods and tools; Methods of user centered design (planning ; context of use; requirements; design; evaluation;.	8	PowerPoint lecture presentations, discussions, applications, examples, case studies
4. User experience	2	PowerPoint lecture presentations, discussions, applications, examples, case studies
5. Design process. Context of use factors design (user group; tasks ;technical environment; physical environment, organizational environment	8	PowerPoint lecture presentations, discussions, applications, examples, case studies
6. Usability evaluation.	4	PowerPoint lecture presentations,

⁸ The professional competencies and the transversal competencies will be treated according to the Methodology of OMECTS 5703/18.12.2011. The competencies listed in the National Register of Qualifications in Higher Education [Registrul Național al Calificărilor din Învățământul Superior RNCIS] (http://www.rncis.ro/portal/page?_pageid=117,70218&_dad=portal&_schema=PORTAL) will be used for the field of study from 1.4 and the program of study from 1.6 of this form, involving the discipline.

		discussions, applications, examples, case studies
Bibliography ⁹ 1.Argeşanu, Veronica, Ergonomia echipamentelor și departamentelor medicale, Ed. Eurostampa, Timișoara, 2005. 2. Pheasant, S.T., Ergonomics, Work and Health, Macmillan Press, London, 1991. 3. Norman Donald, Emotional design, Apogeo Editore, 2004. 4. L. J. Bannon, Future interaction design, Springer, 2005. 5. D. Norman, Design of Everyday Things, revised and expanded, Editor Basic Books, 2014. 6. J. Preece, H. Sharp, J. Rogers, Interaction Design: Beyond Human-Computer Interaction, Publisher Chichester Wiley, 2015. 7. Martha J. Sanders, Ergonomics and the management of musculoskeletal disorders, Butterwoth, SUA, 2004. 8. Pheasant, S.T., Ergonomics, Work and Health, Macmillan Press, London, 1991.		
8.2 Applied activities¹⁰	No. of hours	Teaching methods
1. Problem statement	2	Topic exposure, discussions, questions, solving specific issues; Specialized softs
2. Activity analysis	5	Topic exposure, discussions, questions, solving specific issues; Specialized softs
3. User profiles	5	Topic exposure, discussions, questions, solving specific issues; Specialized softs
4. Machine analysis	4	Topic exposure, discussions, questions, solving specific issues; Specialized softs
5. User needs evaluation techniques	4	Topic exposure, discussions, questions, solving specific issues; Specialized softs
6 Design	6	Topic exposure, discussions, questions, solving specific issues; Specialized softs
7 Design evaluation	2	Topic exposure, discussions, questions, solving specific issues; Specialized softs

⁹ At least one title must belong to the department staff teaching the discipline, and at least 3 titles must refer to national and international works relevant for the discipline, and which can be found in the Politehnica University Library.

¹⁰ The types of applied activities are those specified in footnote 5. If the discipline contains several types of applied activities, then these will be written consecutively in the lines of the table below. The type of activity will be written in a distinct line, as „Seminar:”, „Laboratory:”, „Project:” and/or „Practice/Training:”.

Bibliography^{11 12}

1. Argeşanu, Veronica, Ergonomia echipamentelor și departamentelor medicale, Ed. Eurostampa, Timișoara, 2005.
2. L. J. Bannon, Future interaction design, Springer, 2005.
3. D. Norman, Design of Everyday Things, revised and expanded, Editor Basic Books, 2014.
4. J. Preece, H. Sharp, J. Rogers, Interaction Design: Beyond Human-Computer Interaction, Publisher Chichester Wiley, 2015.
5. Martha J. Sanders, Ergonomics and the management of musculoskeletal disorders, Butterwoth, SUA, 2004.

9. Corroboration of the content of the discipline with the expectations of the main representatives of the epistemic community, professional associations and employers in the field afferent to the program

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10. Evaluation

Type of activity	10.1 Evaluation criteria	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	Solving some theoretical topics related to courses	Written examination	66%
10.5 Applied activities	S:		
	L:		
	P: quantitative and qualitative assessment of the project	Presentation of the solutions, answers to questions	33%
	Pr:		
10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified)			
<ul style="list-style-type: none"> • Use of correct expressing for notions and concepts defined. Solving and explaining problems of medium complexity. Performing applications and tasks, interpretation of medium complexity results, active participation in teamwork. 			

Date of completion

08.12.2015

**Course coordinator
(signature)**

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**Coordinator of applied activities
(signature)**

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**Head of Department
(signature)**

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**Date of approval in the Faculty
Council¹³**

**Dean
(signature)**

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¹³ Avizarea este precedată de discutarea punctului de vedere al board-ului de care aparține programul de studiu cu privire la fișa disciplinei.