

# SYLLABUS <sup>1</sup>

**THIS COURSE UNIT IS TAUGHT IN ROMANIAN LANGUAGE**

## 1. Information about the program

1.1 Higher education institution	Politehnica University Timișoara
1.2 Faculty <sup>2</sup> / Department <sup>3</sup>	Mechanical Engineering/ Mechanical Machines, Equipment and Transportation
1.3 Chair	—
1.4 Field of study (name/code <sup>4</sup> )	Mechanical Engineering/20 70 10
1.5 Study cycle	Master
1.6 Study program (name/code/qualification)	Optimization and Accounting Automation Labour /432

## 2. Information about discipline

2.1 Name of discipline/The educational classe <sup>5</sup>	Optimization and Accounting Automation Labour						
2.2 Coordinator (holder) of course activities	Lecturer PhD. Liliana Georgeta Tulcan						
2.3 Coordinator (holder) of applied activities <sup>6</sup>	Lecturer PhD. Ioan Vasile Groza/ Lecturer PhD. Liliana Georgeta Tulcan						
2.4 Year of study <sup>7</sup>	II	2.5 Semester	3	2.6 Type of evaluation	E	2.7 Type of discipline <sup>8</sup>	DCAV

## 3. Total estimated time (direct activities (fully assisted), partially assisted activities and unassisted activities<sup>9</sup>)

3.1 Number of hours fully assisted/week	6 ,of which:	3.2 course	3	3.3 seminar/laboratory/project	0 1 2
3.1* Total number of hours fully assisted/sem.	84 ,of which:	3.2* course	42	3.3* seminar/laboratory/project	0 14 28
3.4 Number of hours partially assisted/week	,of which:	3.5 project, research		3.6 training	3.7 hours designing M.A. dizertation
3.4* Number of hours pasrtially assisted/ semester	,of which:	3.5* project of research		3.6* training	3.7* hours designing M.A. dizertation
3.8 Number of hours of unassisted activities/ week	4 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field			1,5
		Study using a manual, course materials, bibliography and lecture notes			1
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays			1,5
3.8* Total number of hours of unasssited asctivities/ semester	56 ,of which:	Additional documentation in the library, on specialized electronic platforms, and on the field			21
		Study using a manual, course materials, bibliography and lecture notes			14
		Preparation of seminars/ laboratories, homework, assignments, portfolios, and essays			21
3.9 Total hrs./week <sup>10</sup>	10				
3.9* Total hrs./semester	140				
3.10 No. of credits	8				

<sup>1</sup> The form corresponds to the Syllabus promoted by OMECTS 5703/18.12.2011 (Annex 3), updated based on the Specific Standards ARACIS of December 2016.

<sup>2</sup> The name of the faculty which manages the educational curriculum to which the discipline belongs

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

<sup>4</sup> Fill in the code provided in HG no. 376/18.05.2016 or in HG similars annually updated.

<sup>5</sup> The educational classes of disciplines (ARACIS – specific standards, art./paragraph 4.1.2.a) are: fundamental disciplines, field disciplines, majoring/specialization disciplines.

<sup>6</sup> The applied activities refer to: seminar (S) / laboratory (L) / project (P) / practice/training (Pr).

<sup>7</sup> The year of study to which the discipline is provided in the curriculum .

<sup>8</sup> The types of disciplines (ARACIS – specific standards, art./paragraph 4.1.2.a) are: extended knowledge discipline / advanced knowledge discipline and synthetic discipline (DA / DCAV and DS) or art./paragraph 4.1.2 b) complementary discipline (DC)).

<sup>9</sup> Within UPT, the number of hours from 3.1\*, 3.2\*,...,3.9\* are obtained by multiplying by 14 (weeks) the number of hours from 3.1, 3.2,..., 3.9.

<sup>10</sup> The total number of hours/week is obtained by summing up the number of hours from 3.1, 3.4 și 3.8.

#### 4. Prerequisites (where applicable)

4.1 Curriculum	<ul style="list-style-type: none"> <li>extended knowledge disciplines, advanced knowledge disciplines and synthetic disciplines from first year</li> </ul>
4.2 Competencies	<ul style="list-style-type: none"> <li>acquired in the first year</li> </ul>

#### 5. Conditions (where applicable)

5.1 of the course	<ul style="list-style-type: none"> <li>laptop, video projector</li> </ul>
5.2 to conduct practical activities	<ul style="list-style-type: none"> <li>laptop, video projector, computers</li> </ul>

#### 6. Specific competencies acquired through this discipline

Specific competencies	<ul style="list-style-type: none"> <li>Knowledge of the determining elements for minimizing the risks of accidents and occupational diseases and understanding the organization and control in assessing the achievement of occupational health and safety objectives;</li> <li>Acquiring the necessary knowledge in order to initialize in the principles and techniques of the methodology for elaborating one's own work safety instructions;</li> <li>Familiarization with the methodology for conducting work accident research;</li> <li>Use of databases in the management of work record resources and the capacity to process and interpret data in the field of human resources and occupational health and safety in order to optimize work.</li> </ul>
Professional competencies ascribed to the specific competencies	<ul style="list-style-type: none"> <li>Developing complex projects in the field of Health and Work Security</li> <li>Application and development of occupational methodologies in the domaine Health and Work Security</li> </ul>
Transversal competencies ascribed to the specific competencies	<ul style="list-style-type: none"> <li>Development of scientific research capacity</li> </ul>

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

7.1 The general objective of the discipline	<ul style="list-style-type: none"> <li>Initiation in the use of the main tools for optimizing work in terms of occupational health and safety, acquiring basic skills on the ability to identify and assess the essential phenomena involved in the analysis and study of occupational health and safety systems, the ability to evaluate with specific measures.</li> </ul>
7.2 Specific objectives	<ul style="list-style-type: none"> <li>Learning the basics for optimizing a health and safety at work system, accumulating knowledge on the integration of labor protection in the work process, choice and use of specific methods of risk minimization, control, research and analysis of accidents at work and illness professionals specific to industrial processes, which require special approaches depending on the specifics of the work performed.</li> </ul>

#### 8. Content

8.1 Course	Number of hours	Teaching methods
1. Notions of systems engineering	3	lecture, multimedia presentation, explanation, presentation and commentary of specific documents
2. Notions of mathematical optimization of integrated systems for manufacturing. The practice of optimization. Elements of flexible optimization of productive structures.	9	
3. Minimizing the risks of accidents and occupational diseases: - selection and hiring of staff - ergonomic organization of work systems - training, education, briefing - industrial ventilation	15	

- combating chemical toxins - prevention of mechanical risks - combating the action of noise and vibrations - industrial lighting - combating static electricity - radiation prevention - radiation protection - individual protection - security signaling - preventive medicine - action programs		
4. Monitoring and evaluation to attain the objectives	3	
5. Methodology for elaborating work safety instructions	3	
6. Methodology for conducting work accident research	6	
7. Statistical analysis of occupational accidents and diseases	3	

#### Bibliography<sup>11</sup>

1. Tulcan, Liliana - Optimizarea și evidența muncii - format electronic, 2019; <https://cv.upt.ro/course/view.php?id=725>
2. Darabonț A., Pece, Șt., Dăscălescu, A. – Managementul securității și sănătății în muncă, vol. I,II, Editura AGIR București, 2001;
3. Darabonț A., Constantin, G., Darabonț, D. - Evaluarea calității de securitate a echipamentelor tehnice, Editura AGIR București, 2001;
4. Păunescu, M.: Îndrumător de lucrări practice pentru protecția muncii, USAMVBT, Editura Brumar, 2007;
5. Popa, H. - Teoria și ingineria sistemelor: concepte, modele, metode, competitivitate, Editura Politehnica, 2003
6. Stromff, S. - Ghid pentru implementarea sistemului de management al sănătății și securității ocupaționale, ed. II, Editura Standardizarea, București, 2009;
7. Szasz, A., Țucu, D. - Managementul stresului pentru locuri de muncă sănătoase - colecție de studii și cercetări științifice, Editura Mirton, Timișoara 2015;
8. Locuri de muncă sănătoase pentru toate vârstele - colecție de studii și cercetări științifice, Editura Universității Aurel Vlaicu Arad, 2016;
9. Systems for health and work security, young workers - „start safe”, Editura Orizonturi Universitare, Timișoara, 2006;
10. Cicală, E., Olariu, M., Țucu, D. - Tratat de tehnologii neconvenționale, cap. Optimizarea tehnologiilor neconvenționale, vol.I, Editura Augusta, Timișoara, 2003.
11. Stanton, N., ș.a. - Handbook of human factors and Ergonomics Methods, CRC Press, 2005, <http://healthf.kaums.ac.ir/UploadedFiles/jozveh/motalebi/HandbookofHumanFactorsandErgonomicsMethods.pdf>;
12. <https://osha.europa.eu/ro>.

8.2 Applied activities <sup>12</sup>	Number of hours	Teaching methods
Laboratory: 1 Implementation of databases in the occupational health and safety system 2 Table calculation programs specific to the occupational health and safety system 3 Management and optimization of data and information to characterize the labor protection situation in companies 4 Specialized programs for the realization of procedural algorithms in work records 5 Graphical representations established in the statistical analysis of experimental data 6. Case studies using specialized software	7	exposure with multimedia means, explanation and demonstration. Group methods: case studies, experiments, exercises, algorithmization, problematization.

<sup>11</sup> At least one title must belong to the department staff teaching the discipline, and at least one title must refer to a relevant work for the discipline, a national and international work that can be found in the UPT Library.

<sup>12</sup> The types of applied activities are those mentioned in 5. If the discipline contains more types of applied activities then they are marked, consecutively, in the table below. The type of activity will be marked distinctively under the form: „Seminar:”, „Laboratory:”, „Project:” and/or „Practice/Training:”.

Project: Topics in the field of interest of each master student, analysis of a job, generally in the productive sector, related to minimizing the risks of accidents and occupational diseases, workplace ergonomics, identification of risk factors and their level, analytical profile and global, interpretation, conclusions and proposals for improvement.	14	

#### Bibliography<sup>13</sup>

- Groza, I., ș.a - Calculatoare personale - introducere în utilizare, Editura Fundației "Ion Slavici", Timișoara, 2010
- Stanciu, R.; Bebeșelea, A.; Mnerie, A.; Krepelka, M.; Groza, I.; Kurti, V.; Korosi, A.; Mnerie, G.; Dorneanu, L.; Slavici, T. – Utilizarea calculatoarelor în mediul economic, Ed. Eurostampa, Timișoara, 2013
- Groza I., s.a.- Achiziția datelor transmise de instrumente de măsurare digitale, Editura Fundației Ioan Slavici, Timișoara, 2012
- Păunescu, M.: Îndrumător de lucrări practice pentru protecția muncii, USAMVBT, Editura Brumar, 2007;
- Managementul stresului pentru locuri de muncă sănătoase - colecție de studii și cercetări științifice, Editura Mirton, Timișoara 2015;
- Locuri de muncă sănătoase pentru toate vârstele - colecție de studii și cercetări științifice, Editura Universității Aurel Vlaicu Arad, 2016;
- Systems for health and work security, young workers - „start safe”, Editura Orizonturi Universitare, Timișoara, 2006

#### 9. Coroboration 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

- Concepts, tools and methodologies applicable addressed by specialists in engineering, human resources and health and safety at work in the current diversity of sectors, production and service, administrative structures, educational organizations.

#### 10. Evaluation

Type of activity	10.1 Evaluation criteria <sup>14</sup>	10.2 Evaluation methods	10.3 Share of the final grade
10.4 Course	Oral examination, three theoretical subjects based on a paper prepared for a practical situation.	Summative evaluation. 2 internal examiners 3 subjects from the subject taught in the course	60
10.5 Applied activities	<b>S:</b>		
	<b>L:</b> Evaluation process: testing, experimentation, calculation, data interpretation, essays, interest in laboratory work	Formative and summative evaluation.	15
	<b>P:</b> Individual project themes. The rhythmicity and correctness of solving the project stages are followed.	Formative and summative evaluation.	25
	<b>Pr:</b>		
	<b>Tc-R<sup>15</sup>:</b>		
<b>10.6 Minimum performance standard (minimum amount of knowledge necessary to pass the discipline and the way in which this knowledge is verified<sup>16</sup></b>			
<ul style="list-style-type: none"> <li>Grade 5 for 50% knowledge of each subject and promotion of the laboratory and the project.</li> </ul>			

Date of completion

Course coordinator  
(signature)

Coordinator of applied activities  
(signature)

<sup>13</sup> At least one title must belong to the staff teaching the discipline.

<sup>14</sup> The Syllabus must contain the evaluation method of the discipline, specifying the criteria, the methods and the forms of evaluation, as well as mentioning the share attached to these within the final mark. The evaluation criteria must correspond to all activities stipulated in the curriculum (course, seminar, laboratory, project), as well as to the methods of continuous assessment (homework, essays etc.)

<sup>15</sup> Tc-R= Homework-Reports

<sup>16</sup> For this point turn to "Ghid de completare a Fișei disciplinei" found at: [http://univagora.ro/m/filer\\_public/2012/10/21/ghid\\_de\\_completare\\_fisa\\_disciplinei.pdf](http://univagora.ro/m/filer_public/2012/10/21/ghid_de_completare_fisa_disciplinei.pdf)

**Head of Department  
(signature)**

**Date of approval in the Faculty  
Council <sup>17</sup>**

**Dean  
(signature)**

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<sup>17</sup> The approval is preceded by discussing the study program's board's point of view with redgards to the syllabus.