

# COURSE SYLLABUS

## Master's thesis preparation

### 2020-2021

#### 1. Program information

1.1	Higher education institution	<i>University of Pitești</i>
1.2	Faculty	<i>Mechanics and Technology</i>
1.3	Department	<i>Automobiles and Transport</i>
1.4	Field of studies	<i>Automotive Engineering</i>
1.5	Level of education	<i>Master</i>
1.6	Program / Qualification	<i>Automotive Engineering for Sustainable Mobility</i>

#### 2. Discipline information

2.1. Discipline information											
2.1	Name of discipline					Master's thesis preparation					
2.2	Instructor of the lecture/course activities					Adrian CLENCI					
2.3	Instructor of the lab activities					Adrian CLENCI					
2.4	Year of the studies	II	2.5	Semester	II	2.6	Type of evaluation	V <sup>1</sup>	2.7	The discipline regime	A, DS <sup>2</sup>

#### 3. Estimated total time

3.1	Number of hours per week	<b>6</b>	3.2	lecture	-	3.3	seminar	<b>6</b>
3.4	Total hours of the Academic Syllabus	<b>84</b>	3.5	lecture	-	3.6	seminar	<b>84</b>
<b>Distribution of the time allocated to the individual study</b> (= 3.9 x 25 - 3.4 = 10 x 25 - 224 = 26 hours)								<b>ore</b>
Study by handbook, course support, bibliography and notes								<b>22</b>
Additional documentation in the library, on specialized electronic platforms and in the field								<b>22</b>
Preparation of thesis								<b>100</b>
Tutorial								<b>20</b>
Examinations								<b>2</b>
3.7	Total hours of individual study	<b>166</b>						
3.8	<b>Total hours per semester</b> (= 3.4 + 3.7)	<b>250</b>						
3.9	<b>Number of credits allocated to the discipline</b>	<b>10</b>						

#### 4. Prerequisites (where applicable)

4.1	Curriculum	-
4.2	Skills	<i>Advanced mathematics, Applied Mechanics, Numerical methods, Vehicle dynamics, Applied Thermodynamics, Electronics and automatic systems, Automobile's construction, Thermal engines, Transmissions and alternative drivetrains, Vehicle Mechatronics, Materials, Vehicle reliability, Simulation of vehicles</i>

#### 5. Conditions (where applicable)

5.1	for the lecture/course	-
5.2	for the seminar	<i>Classroom equipped with board, video projector, projection screen, computer</i>

#### 6. Skills

Professional skills	<i>CP1 - innovative design and design with the purpose of producing products, technologies that ensure sustainable (sustainable) mobility</i> <i>CP2 - numerical modeling and simulation of the different components of the vehicles</i> <i>CP3 - calibration of different vehicle subsystems for energy optimization purposes</i> <i>CP4 - experimental research with the purpose of validating the prototypes resulting from the activities of conception, design, modeling and numerical simulation</i>
transversal skills	<i>CT1 - documentation and use of information</i> <i>CT2 - professional communication</i> <i>CT3 - project management</i> <i>CT4 - responsible execution of professional tasks under autonomous conditions</i> <i>CT5 - carrying out activities exploiting the ideas of</i>

#### 7. Discipline goal(s)

7.1	The main goal of the discipline	<i>Development of competences in the field of Automotive Engineering</i>
7.2	Specific goal(s)	<i>At the end of this activity, the student should be able to discuss on this particular subject:</i> <i>- to elaborate a literature review specific to the master's thesis field;</i> <i>- identify the current state of knowledge on the subject under investigation,</i> <i>- to develop the research directions of the master's thesis, setting the purpose and its planning,</i> <i>- to develop the research topic taking into consideration the discussions / tips with the tutor</i> <i>- to issue the final conclusions of the subject treated in the master's thesis</i>

#### 8. Contents

<sup>1</sup> E – Exam

<sup>2</sup> O – compulsory; DAP – deepening discipline

7.1. Master's thesis		No. of hours	Teaching methods	Remarks Resources used
1	Defining the master thesis subject	4	<ul style="list-style-type: none"> <li>- Lecture</li> <li>- Exposure with support material</li> <li>- Explanation</li> <li>- Description and exemplification</li> <li>- The heuristic conversation</li> <li>- Debating</li> <li>- Case study</li> <li>- Exercising</li> <li>- Experiment</li> <li>- Computer aided learning</li> </ul>	Board, sketches, tables, graphs, sheets, photos, models, video projector, computer, internet
2	Literature review for the established subject	20		
3	Presentation of the utilized research infrastructure	10		
4	Developing the methodology of the study	20		
5	Results and discussion	20		
6	Final conclusions	10		
<b>TOTAL HOURS</b>		<b>84</b>		

**Minimal bibliography:**

*- It will be established by each tutor, differentiated, according to the topic of the master's thesis.*

**9. Corroboration the contents of the discipline with the expectations of the epistemic community representatives, professional associations and employers in the field related to the program**

*The skills acquired in this discipline allow the graduates to work in the field of automotive engineering: design, calibration, test, homologation of thermal engines and automobiles. Being a specialized discipline, its purpose is training students, especially for engineering centers (design, research, development, innovation).*

**10. Evaluation**

Activity type	10.1 Evaluation Criteria	10.2 Evaluation methods	10.3 Percentage of the final grade
10.4 Master's thesis preparation	Active involvement during the activities	Questions / answers. Individual discussions. Weekly recording	40%
	Good understanding of the treated subjects and the ability to analyze and synthesize	Oral discussions	50%
	Correct resolution of the research report. Quality of presentation	Oral presentation. Individual discussions	10%
10.5 Minimum standard of performance	Achieving at least 60% of the evaluation criteria (§10.4)		

Date (of filling)  
17.09.2020

Instructor  
**Adrian CLENCI**, Professor

Date (of approval)  
21.09.2020

Director of supplying department  
**Helene ŞUSTER**, ş.l.

Director of beneficiary department  
**Helene ŞUSTER**, ş.l.