COURSE GUIDE – short form

Academic year 2017-2018

Course name[1]	**Thermodynamics 2**					Course code		2ISI06DID	
Course type[2]	DID	Category[3]	DI	Year of study	2	Semester	4	Number of credit points	4

Faculty	Material Science and Engineering	Number of teaching and learning hours[4]					
Field	Industrial Engineering	Total	L	T	LB	P	IS
Specialization	Safety Engineering in Industry	56	28	28			

Pre-requisites from the curriculum[5]		
	Compulsory	-
	Recommended	-

General objective [6]	Development of practical and technical thinking "Technical Thermodynamics" constitutes a formative and informative learning area for all technical personnel categories, especially those in the "Industrial Engineering" area. This is due to the fact that this area requires specialized operators and technical support to sustainably use the energy, reduce fuel consumption and capitalize on new sources of energy, ensuring maximum efficiency of thermodynamic processes. That is why knowledge of natural and technical processes of thermal energy conversion has utmost importance. This will allow the use of optimized methods, techniques and advanced technologies to design and operate thermal devices and installation. "Technical Thermodynamics" course is designed for fundamental technical training of entry level engineering students
Specific objectives[7]	To apply technical thinking in economic activities after graduation
Course description[8]	First principle of thermodynamics. Second principle of thermodynamics. Ideal gas and ideal gas mixtures. Real gases and vapours. Elements of humid air thermodynamics. Gaseous and vapour flow. Steam power cycles.Carnot cycle. Rankine cycle. Influence of basic parameters on Rankine cycle thermal efficiency. Methods to improve efficiency of steam power equipment. Methods to increase the operational economy of steam and vapour power equipment. Thermal machines cycles.Compressor cycle. Refrigeration and cryogenic equipment. Heat pumps. Basics of heat and mass transfer.Conduction.Convection. Radiation.

Assessment			Schedule[9]	Percentage of the final grade (minimum grade)[10]
Continuous assessment	Class tests along the semester			%
	Activity during tutorials/laboratory works/projects/practical work		Weekly	50 %
	Assignments		-	%
Final assessment	Final assessment form[11]	Exam	Session	50 %
	Examination procedures and conditions: 1. Theoretical knowledge; tasks: test paper; working conditions - writing;			

Course organizer	Associate Professor PhD Maria Baciu	
Teaching assistants	Associate Professor PhD Maria Baciu	

[1]Course name from the curriculum
[2] DF – fundamental, DID – in the field, DS – specialty, DC – complementary (from the curriculum)
[3] DI – imposed, DO –optional, DL – facultative (from the curriculum)
[4] Points 3.8, 3.5, 3.6a,b,c, 3.7 from the Course guide – extended form (L-lecture, T-tutorial, LB-laboratory works, P-project, IS-individual study)
[5] According to 4.1 – Pre-requisites - from the Course guide – extended form
[6] According to 7.1 from the Course guide – extended form
[7] According to 7.2 from the Course guide – extended form
[8] Short description of the course, according to point 8 from the Course guide – extended form
[9] For continuous assessment: weeks 1 – 14, for final assessment – colloquium: week 14, for final assessment-exam: exam period
[10] A minimum grade might be imposed for some assessment stages
[11] Exam or colloquium