C O U R S E G U I D E – s h o r t f o r m

Academic year 2017-2018

Course name[1]	Materials for Nuclear Industry					Course code		4SM11_MIN	
Course type[2]	DS	Category[3]	DO	Year of study	Iv	Semester	7	Number of credit points	3

Faculty	Materials Science and Engineering	Number of teaching and learning hours[4]					
Field	Materials engineering	Total	L	T	LB	P	IS
Specialization	Materials science	42	28		14		

Pre-requisites from the curriculum[5]	Compulsory	not necessary
	Recommended	not necessary

General objective [6]	Understanding the fundamental science of physical and chemistry phenomena with sustain the thermomechanical specifications of the materials, obtaining technology and the application that are designated to those materials.
Specific objectives[7]	To know the theoretical fundamentals and the importance of phase transformations of the materials used in nuclear industry. To know the physical and chemistry factors that influences the phase transformation of materials used in nuclear industry. Understand the obtaining technology of the alloys used in nuclear industry. To know the main application of the materials used in nuclear industry.
Course description[8]	The main and secondary components of the pressurized water reactor. Materials defects caused by radiations and radiation energy. Main degradation effects caused by radiation Steels and alloys with dispersion capacity of mechanical energy designated to anti-vibration bars. Stainless steel used for the main pipe system. Steels and alloys with high resistance used in reactor`s cooling system. Alloys for the primary coating at the discharge. Titanium alloys and stainless steel for cooling pipes. Low alloyed steel for the coating of steam generator. Stainless steel for the protection screens. High alloyed heat resistant steels with dimensional stability. Methods of evaluation, testing and analysis of material used in nuclear industry.

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		Practical test – 1h	50%
	Assignments			%
Final assessment	Final assessment form[11]	Colloquium		50%
	Examination procedures and conditions: 1. Oral evaluation with 2 open answer questions;			

Course organizer	Prof. dr. eng. Sergiu STANCIU	
Teaching assistants	Prof. dr. eng. Sergiu STANCIU	

[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, 3.6 a,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