# 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] | **THERMO CHEMICAL TREATMENTS 2** | | | | | Codul disciplinei | | **4 IPM 07** | |
|---|---|---|---|---|---|---|---|---|---|
| Course type[2] | **DS** | Category[3] | **DI** | Year of study | 4 | Semester | **8** | Number of credit points | **6** |

| Faculty | Material Science and Engineering | Number of teaching and learning hours[4] | | | | | |
|---|---|---|---|---|---|---|---|
| Field | Materials Engineering | Total | L | T | LB | P | IS |
| Specialization | IPM | **56** | **28** | **-** | **28** | **-** | |

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

| | |
|---|---|
| General objective [6] | Discipline prepare the specialists in the field of control and exploitation of thermo chemical treatments for the parts such as a cam or ring gear. |
| Specific objectives[7] | Knowledge of the phenomena that underlie the field of thermo chemical treatments, of the different procedures and conditions specific to the surface hardening of metallic parts used methods of hardening by diffusion during thermo chemical processing. |
| Course description[8] | Surface hardening, a process which includes a wide variety of techniques, is used to improve the wear resistance of parts without affecting the more soft, tough interior of the part. The selective hardening of steel surfaces is typically achieved by localized heating and quenching, without any chemical modification of the surface. However, selective surface hardening can also include chemical modification by such techniques: Flame hardening, Induction hardening, Laser hardening, Electron beam hardening, Ion implantation, Use of arc lamps as ion implantation and Selective carburizing and nitriding. |

| Assessment | | | Schedule[9] | Percentage of the final grade (minimum grade)[10] |
|---|---|---|---|---|
| Continuous assessment | Class tests along the semester - | | week | % |
| | Activity during tutorials/laboratory works/projects/practical work | | | 40 % |
| | Assignments - | | week | % |
| Final assessment | Final assessment form[11] | exam | exam period | 60 % (minimum 5) |
| | Examination procedures and conditions:<br>1. Subject with open questions ; tasks answer to open questions ; working conditions oral; percent 50 %;<br>2. Subject with open questions ; tasks answer to open questions ; working conditions oral; percent 50 %;<br>3. - ; tasks - ; working conditions -; percent %; | | | |

| Course organizer | **Professor PhD. Eng. Dan Gelu GALUSCA** | |
|---|---|---|
| Teaching assistants | **Professor asist.PhD Eng.Simona BALTATU** | |

[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