

COURSE GUIDE – short form

Academic year 2018-2019

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|-------------|-------------------------------|----------|----|---------------|---|-------------|----------|-------------------------|---|
| Course name | PHYSICAL CHEMISTRY (1) | | | | | Course code | 2SM02DID | | |
| Course type | DID | Category | DI | Year of study | 2 | Semester | 3 | Number of credit points | 4 |

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|----------------|-----------------------------------|---------------------------------------|----|---|----|---|----|
| Faculty | Materials Science and Engineering | Number of teaching and learning hours | | | | | |
| Field | Materials Engineering | Total | L | T | LB | P | IS |
| Specialization | Materials Science | 42 | 28 | | 14 | | 28 |

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| Pre-requisites from the curriculum | Compulsory | |
| | Recommended | |

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| General objective | Making calculations, demonstrations and applications for solving materials engineering specific tasks based on knowledge in the field of materials science and engineering and other fundamental sciences and related to metal alloys systems properties analysis and explanation/interpretation of some physical phenomena in materials science and engineering field by means of thermodynamic methods. |
| Specific objectives | Getting information about the equilibrium state and about materials properties under different temperature and pressure conditions. Establishing connections between the microscopic and macroscopic properties of liquid and solid metallic materials. Developing skills for elaborating specific reports and scientific articles. |
| Course description | Fundamentals of thermodynamics. Thermodynamic potentials method. Thermodynamic functions of monocomponent system. General conditions of thermodynamic equilibrium. Equilibrium in homogeneous thermodynamic systems. Equilibrium in heterogeneous thermodynamic systems. Partial thermodynamic functions. Ideal and real solutions. Quasi-chemical theory of solutions. Thermodynamic functions of binary heterogeneous alloys. |

| Assessment | | Schedule | Percentage in the final grade (minimum grade) |
|---------------------------------------|--|------------------|---|
| A. Final assessment form: Exam | Class tests along the semester | % | 50% (minimum 5) |
| | Home works | % | |
| | Other activities | % | |
| | Examination procedures and conditions: 1. Category: theoretical; subject with closed questions; conditions: oral; weight in final grade: 20%; 2. Category: theoretical; solving problem; conditions: oral; weight in final grade: 40%. 3. Category: theoretical; solving problem; conditions: oral; weight in final grade: 40%. | 100% (minimum 5) | |
| B. Seminar | Activity during seminar | | % (minimum 5) |
| C. Laboratory | Activity during laboratory | | 50% (minimum 5) |
| D. Project | Activity during project | | % (minimum 5) |

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| Course organizer | Associate professor PH.D. eng. Ioan RUSU |
| Teaching assistants | Lecturer PH.D. eng. Monica Nicoleta LOHAN |