**Course Syllabus**

Academic year: 2018-2019

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| Institution | University of Petroşani |
| Faculty | Mining |
| Field of study | Environmental Engineering |
| Level | Bachelor |
| Program of study | Engineering and environmental protection in industry |

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| Course | **Chemistry** |
| Code | MDPMDI413 |
| Year of study (semester) | II (IV) |
| Number of hours | 42 |
| Number of credits | 3 |
| Professor | Lecturer, Ph.D. Chem. MOLDOVAN Clementina Sabina |

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| **No.** | **Topic** |
|  | Status functions involved in some electrochemical processes |
|  | Electrolytic dissociation of substances. The role of the dissolvent. |
|  | The energy of electrolytic dissociation. Ostwald's Law of Dilution. Strong electrolytes. Modern theory of strong electrolytes. Calculation of the activity factor |
|  | Ionic dissociation of water. pH and pOH of strong and weak solutions of acids and bases. Protolytic theory of acids and bases |
|  | Electrolyte conductivity |
|  | Ions migration velocity in the solution. Transport numbers of the ions in the solution. |
|  | Electric cells. Electromotive force of electric cells. Measurement of electromotive force of electric cells. |
|  | Electrode potentials |
|  | Cells of scientific importance |
|  | Potentiometric titration |
|  | Polarography. Electrochemical current sources. Electrolysis. |
|  | Electrokinetic phenomena. |
|  | Chemical corrosion of metals (thermodynamics and kinetics of chemical corrosion) |
|  | Electrochemical corrosion of metals. Methods of protection against corrosion |