Table 5.2 Course specification

Level: Bachelor
Course name: Physical Chemistry I
Status: obligatory
ECTS: 8
Requirements: none
Course aim • To provide students with the necessary theoretical and practical knowledge in selected topics of physical chemistry as a basis for further understanding and application in other fields of chemistry. • Development skills of students to apply the concepts learning in practical work with chemical systems. • Development of practical skills of students to perform experiments using appropriate methodology.
Course outcome Upon successful completion of this course, the student shoud be able to: Apply obtained knowledge in solving problems in different fields of physical chemistry (intermolecular interactions, chemical thermodynamics, etc.), Measure and monitoring the important physical-chemical properties of the substances with relevant instruments, and the obtained results will associate with the theory to solve practical problems on the field of physical chemistry, Apply basic experimental techniques and correctly basic equipments and instruments during the performance of physico-chemical experiments.
Course content *Theory* Molecular systems. Aggregate states (solid and liquid state, ideal and real gases). Principles of chemical thermodynamics (I, II and III law and their application). Equilibrium (chemical equilibrium and phase equilibrium). *Practice: Practical classes, OFT, SRW* Determination of molecular parameters by instrumental spectroscopic methods. Determination of physico-chemical properties of liquids. Determination of thermodynamic parameters of some physico-chemical systems.
Literature 1. P. Atkins, J. De Paula, Physical Chemistry, W. H. Freeman and Company, New York, 2010 2. R. G. Mortimer, Physical Chemistry, Third Edition, Elsevier Academic Press, 2008 3. D. W. Ball, Physical Chemistry, Thomson Learning, Inc., Pacific Grove, 2003