

Course title: **Elements of Physical Chemistry of Polymers**

Institute/Speciality: **FACULTY OF CHEMICAL ENGINEERING AND TECHNOLOGY /** Engineering of Technological Processes

Number of contacthours: **15 hours** (15 h lectures)

Course duration: 1 semester (6th semester of regular I cycle studies - spring)

ETCS credits: **1**

Course description: The course deals in a more abstract level with the Physical Properties of Polymers. The following concepts will be covered: Models of the polymer chain, Kuhn length. Size of polymer chain, radius of gyration. Polymers in solutions. Polymer blends. Solubility and miscibility: Flory-Huggins theory. Crystallinity in Polymers. Mechanical properties of polymers. Glass transition. Time temperature superposition. Thin Films.

Education effects :

- knowledge: Understanding of the physical phenomena relevant to polymer science and technology.
- skills: Students can explain the physical properties of polymers.
- social: Enhancing communication skills

Literature: 1 . Rubinstein M, Colby RH, Polymer Physics, Oxford University Press, 2014
2. Gedde U, Polymer Physics, Springer, 2001

Assessment method: Final test

Prerequisites: Elementary calculus

Primary target group: Advanced engineering / Master's

Lecturer: dr Konstantinos Raftopoulos

Contact person: dr. Konstantinos Raftopoulos

Deadline for application:

Remarks: Selectable course