

Module P 105: Polymer Physics I

Learning objectives:

This module will provide the understanding of fundamental concepts of polymer and soft matter physics. A central goal is the understanding of polymer effects in the light of concepts known from molecular and solid state physics and the interpretation of important experimental results within the framework of reasonably simple physical models.

Course units and temporal allocation:

Module P 105 ‚Polymer Physics I‘ is comprised of the following units:

	HPW	Semester
Lecture	3	WS
Exercises	1	WS

This module will be offered by lecturers of Theoretical Physics and Experimental Physics

Course content:

The **lecture** will cover single chain properties, chain models, distribution functions and averages, collective properties, rubber elasticity, rheology, polymer solutions, polymer blends, phase diagrams, block copolymers, structure factor, scattering, experimental techniques, polymer characterization, theoretical models, glass transition, and gelation.

Entrance requirements:

None

Assessment:

Written (or oral) examination on contents of the lecture and exercises. The kind of examination (written or oral) and the date are given at the beginning of the semester.

Work load:

Attending time: 60 hours; pre- and post-preparation: 60 hours; additional time of preparation for examination: 60 hours. Total work load: 180 hours.

ECTS Credit points: 7