

## Module P 104: Polymer Materials and Technology

### **Learning objectives:**

This module will provide systematic knowledge about conventional and advanced processing technologies of polymer materials. The objective is to understand the entire process chain starting from the selection of the polymer material, the involved processing to the final component in view of the desired properties.

### **Course units and temporal allocation:**

Module P 104 ‚Polymer Materials and Technology‘ is comprised of the following units:

	HPW	Semester
Lecture	2	WS
Laboratory Course	6	WS

*This module will be offered by lecturers of Polymer Engineering and Macromolecular Chemistry*

### **Course content:**

The **lecture** provides detailed knowledge of the basic polymer processing techniques, such as injection moulding, extrusion, secondary shaping techniques, as well as general applications. In addition basic thermal and mechanical characterization methods are reviewed. A special emphasis will be given on the relationship between processing parameters and resulting product properties.

In the **laboratory course** the knowledge on the different processing and characterization techniques is enhanced by experiments using state-of-the-art machines and equipment. Thus processes such as injection moulding and film extrusion are performed and thermal, optical, and mechanical properties will be evaluated on the produced components.

### **Entrance requirements:**

None

### **Assessment:**

A written (or oral) examination on contents of the lecture and the laboratory course after the first semester. This amounts to 60% of the final grade. A second grade is given for the laboratory course and amounts to 40%. The kind of examination (written or oral) and the date are given at the beginning of the semester.

### **Work load:**

In addition to the 2 HPW for the lecture 1 hour is planned for individual studies. Three additional hours are necessary for the preparation of the experiments and the protocol of the 6 HPW laboratory course. Given 15 weeks per semester this adds up to 180 hours. Together with 30 hours for the preparation of the final examination a work load of 210 hours for the whole semester is calculated.

### **ECTS Credit points: 7**