

## Module P 205: Polymer Engineering

(Fak225777)

### **Learning objectives:**

The objective of this module is to provide detailed knowledge about the processing and properties of reinforced polymer materials. The lecture will cover various concepts to reinforce polymeric matrices. The students will also obtain an overview about relevant technical applications of these advanced engineering polymers. In addition, the laboratory course will extend their knowledge of polymer engineering.

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

Module P 205 'Polymer Engineering' is comprised of the following units:

	HPW	Semester
Lectures	2	SS
Laboratory Course	8	SS

*This module will be offered by lecturers of polymer engineering.*

### **Course content:**

The **lectures** will provide detailed knowledge of the processing and characterization of reinforced polymers with industrial importance. Various reinforcement mechanisms, their fabrication and properties will be taught. Modern material characterization techniques are also discussed with an emphasis on fracture mechanics and the long-term dynamic response of composites.

The associated **laboratory course** will be performed in the polymer engineering research group or in collaboration with other polymer engineering-related groups.

### **Entrance requirements:**

Participation in P104 is recommended.

### **Assessment:**

An oral (or written) examination on the contents of the lectures after the second semester. This examination will amount to 50 % of the grade. The laboratory course will be evaluated by the average of three independent grades: practical performance, a written report, and a seminar, amounting to 50 % of the grade.

### **Work load:**

In addition to the 2 HPW for the lecture, 2 hours are planned for individual studies. Four additional hours are necessary for the preparation of the experiments and the protocol of the 8 HPW laboratory course. Given 15 weeks per semester, this adds up to 240 hours. Together with 30 hours for the preparation of the final examination and talk, a work load of 270 hours for the whole semester is calculated.

### **ECTS Credit points:** 9