

## POLYMER PHYSICS

### 1.1. Identification

University:	Kungliga Tekniska Högskolan (Stockholm)										
School:	School of Chemical Science and Technology										
Course:	Polymer Physics										
ECTS:	6										
Semester:	<i>Winter</i>					<i>Summer</i>				X	
Category	<i>Fundamental course</i>				X	<i>Specialisation course</i>					
Module	<i>MFI</i>		<i>MFII</i>	X	<i>MFIII</i>		<i>MSI</i>		<i>MSII</i>		<i>MSIII</i>
Teachers:	Ulf W. Gedde, Lars Wågberg										
Language:	<i>English</i>	X	<i>Italian</i>		<i>Swedish</i>	X	<i>Spanish</i>				

### 1.2. Learning-outcomes

- knowledge about the fundamentals of polymer physics

### 1.3. Competencies

#### ▪ General

- to have critical understanding of technical and scientific tools
- to work and manage teams
- communication skills (both written and oral)
- to work in an international context

#### ▪ Specific

- to understand the fundamental chain conformation and orientation of polymers
- to analyse the different behaviour of glassy and crystalline polymers

### 1.4. Contents

Chain conformation, rubber elasticity, polymer solutions and polymer blends, glassy polymers, crystalline polymers, chain orientation of polymers.

**1.5. Teaching Methodology**

- Lecture sessions
- Practical sessions: “cooperative work” for solving problems
- laboratory sessions

**1.6. Evaluation**

- written exams
- oral evaluation of the problems solved by “cooperative work”
- oral evaluation of laboratory work

**1.7. Bibliography**

- Polymer Physics, 2<sup>nd</sup> Ed., Ulf W. Gedde and Mikael S. Hedenqvist, Kluwer
- Woodward, A.E., “Atlas of Polymer Morphology” Hanser Publishers