

CHEMICAL DYNAMICS

1.1. Identification

University:	Kungl Tekniska Högskolan (KTH), Stockholm, Sweden											
School:	School of Chemical, Science and Technology											
Course:	Chemical Dynamics											
ECTS:	6											
Semester:	<i>Winter</i>						<i>Summer</i>					X
Category	<i>Fundamental course</i>						<i>Specialisation course</i>					X
Module	<i>MFI</i>		<i>MFII</i>		<i>MFIII</i>		<i>MSI</i>		<i>MSII</i>	X	<i>MSIII</i>	
Teachers:	Peter Stilbs											
Language:	<i>English</i>		X	<i>Italian</i>		<i>Swedish</i>	X	<i>Spanish</i>				

1.2. Learning-outcomes

- Knowledge in chemical kinetics and molecular dynamics.

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 different molecular dynamics
- to analyse the phenomena of diffusion
- to determine the kinetic reaction and mechanism

1.4. Contents

Molecular dynamics and its manifestations. Kinetic theory of gases. Diffusion and other transport phenomena . Reaction kinetics and reaction mechanisms. Photophysical processes. Dynamical processes in biological systems.

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

- Chemicals kinetics and dynamics / Jeffrey I. Steinfeld, Joseph S. Francisco, William L. Hase, Prentice Hall, cop. 1989