

INORGANIC MATERIALS CHEMISTRY

1.1. Identification

University:	Kungliga Tekniska Högskolan (Stockholm)											
School:	School of Chemical Science and Technology											
Course:	Inorganic Materials Chemistry											
ECTS:	7.5											
Semester:	<i>Winter</i>				X	<i>Summer</i>						
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:	Lars Kloo											
Language:	<i>English</i>	X	<i>Italian</i>		<i>Swedish</i>	X	<i>Spanish</i>					

1.2. Learning-outcomes

- knowledge about the most important materials in natural and technical systems
- knowledge about the models for the understanding of electrical, magnetic and mechanical properties as well as an introduction to cluster chemistry and the materials of "tomorrow".

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 look for and determine solid state structures
- to understand the fundamental coordination chemistry
- to understand the synthesis processes of materials
- to analyse the electrical and magnetic properties of materials
- to determine the theoretical models to characterize materials

1.4. Contents

Fundamental coordination chemistry .Determination of solid state structures. Electrical properties. Magnetic properties. The synthesis of materials. Theoretical models. Materials for various applications.

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

- Shackelford, "Introduction to Materials Science for Engineers, 4th ed", 1996
- Cotton, F. "Advanced Inorganic Chemistry" John Wiley & Sons