STRUCTURAL CHEMISTRY

1.1. Identification

University:	Kungl Tekniska Högskolan (KTH), Stockholm, Sweden											
School:	School of Chemical, Science and Technology											
Course:	Structural Chemistry											
ECTS:	7.5											
Semester:	*Winter*					X	*Summer*					
Category	*Fundamental course*						*Specialisation course*					X
Module	*MFI*		*MFII*		*MFIII*		*MSI*		*MSII*	X	*MSIII*	
Teachers:	Andreas Fischer											
Language:	*English*	X	*Italian*				*Swedish*	X	*Spanish*			

1.2. Learning-outcomes

- knowledge of how the structures are influenced by the geometry of their building blocks

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 give an introduction to the structural chemistry of organic and inorganic compounds.
- To understand how complicated structure types can be built starting from simple structural principles.
- To understand and to be able to explain the relationships between different structure types.
- To be able to explain the properties of solid compounds starting out from their structure

1.4. Contents

The crystalline state and description of crystal structuresIonic radii and simple ionic structures.The VSEPR model and structures of compounds of the main-group

elements transition metals and lignad field theory structures of non-metallic elements polyanionic and polycationic structures close packings and metal structures structures of molecular compoundsstructures of polymeric compound sphysical properties of solid compounds symmetry as a ordering principle in solid phases structure determination: diffraction methods structure determination: spectroscopic methods.

1.5. Teaching Methodology

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

1.6. Evaluation

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

1.7. Bibliography

- Anthony R. West: Basic Solid State Chemistry, 2nd edition, Wiley, 2000.