

PROCESSING OF CERAMIC MATERIALS

1.1. Identification

University:	Kungl Tekniska Högskolan (KTH), Stockholm, Sweden										
School:	School of Chemical, Science and Technology										
Course:	Processing of Ceramic Materials										
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:	Bill Bergman										
Language:	<i>English</i>		X	<i>Italian</i>		<i>Swedish</i>	X	<i>Spanish</i>			

1.2. Learning-outcomes

- knowledge of technically important ceramic materials
- knowledge in synthesis, processing and properties of ceramic materials

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 properties of ceramic materials.
- To introduce synthesis and processing of ceramic materials
- To analyse ceramic materials for technical uses.

1.4. Contents

Methods for powder synthesis. Properties and characterization of ceramic powders. Shape forming. Sintering and development of microstructure. Glass and glass ceramics. Ceramic coatings.

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

- Advanced synthesis and processing of composites and advanced ceramics / edited by Kathryn V. Logan, American Ceramic Society, cop. 1995