


Data:	CerEng. MA. Nr. / Examination number: 40912	Version: 15.06.2016 	Start Year: WiSe 2016
Module Name:	Ceramic Engineering		
(English):			
Responsible:	Aneziris, Christos G. / Prof. Dr.-Ing.		
Lecturer(s):	Aneziris, Christos G. / Prof. Dr.-Ing.		
Institute(s):	Institute of Ceramics, Glass and Construction Materials		
Duration:	1 Semester(s)		
Competencies:	<p>Students will understand, apply, improve and generate ceramic materials:</p> <ul style="list-style-type: none"> • in micro structural design, • ceramic processing, • testing and • application 		
Contents:	<p>Most important ingredients are:</p> <ul style="list-style-type: none"> • definition, bonding, • micro structure, density, porosity • mechanical properties, • thermal and thermo mechanical properties • chemical properties • sintering • basics in ceramic technology, theoretical • ceramic technology pressing/extruding/casting, experimental • engineering ceramics, alumina/zirconia • engineering ceramics, silicon carbide • functional ceramics, non linear dielectric/piezoelectric properties - barium titanate • refractories, carbon bonded materials • silicate ceramics • Exercise: theoretical density / Enthalpy • Visiting of ceramic plant or research institute 		
Literature:	<p>Introduction to Ceramics, David Kingery Introduction to the Principles of Ceramic Processing, James Reed Physical Ceramics, Yet-Ming Chiang, Dunbar Birnie III, W. David Kingery</p>		
Types of Teaching:	S1 (WS): Incl. Exercises / Lectures (2 SWS)		
Pre-requisites:	Recommendations: Basic fundamentals of materials science		
Frequency:	yearly in the winter semester		
Requirements for Credit Points:	For the award of credit points it is necessary to pass the module exam. The module exam contains: MP/KA (KA if 6 students or more) [MP minimum 30 min / KA 90 min]		
Credit Points:	3		
Grade:	The Grade is generated from the examination result(s) with the following weights (w): MP/KA [w: 1]		
Workload:	The workload is 90h. It is the result of 30h attendance and 60h self-studies.		