

ETE 718. Fundamentals of Powder Metallurgy

COURSE OUTLINE

(1) GENERAL

SCHOOL	SCHOOL OF ENGINEERING		
ACADEMIC UNIT	DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ETE 718	SEMESTER	7^o
COURSE TITLE	Fundamentals of Powder Metallurgy		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>	WEEKLY TEACHING HOURS	CREDITS	
Lectures	3	3	
<i>Add rows if necessary. The organization of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialized general knowledge, skills development</i>	Special background		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	-		
COURSE WEBSITE (URL)	http://ecourse.uoi.gr/enrol/index.php?id=2393		

(2) LEARNING OUTCOMES

Learning outcomes

The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described. Consult Appendix A

Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B Guidelines for writing Learning Outcomes

The course is a specialized course of the metallic materials area. The scope is to provide the necessary knowledge on the metallic part production by metal powders. It covers subjects such as metal powder characterization, metal powder production methods, powder metallurgy processing steps, post processing treatments.

Upon the successful completion of the course, the student is able to: a) understand the fundamental principles of the powder metallurgy part production, b) understand the key parameters of powder metal processing, c) predict the response of a powder metallurgy produced product, d) design the appropriate post processing treatments.

General Competences

Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?

<p><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i></p> <p><i>Adapting to new situations</i></p> <p><i>Decision-making</i></p> <p><i>Working independently</i></p> <p><i>Team work</i></p> <p><i>Working in an international environment</i></p> <p><i>Working in an interdisciplinary environment</i></p> <p><i>Production of new research ideas</i></p>	<p><i>Project planning and management</i></p> <p><i>Respect for difference and multiculturalism</i></p> <p><i>Respect for the natural environment</i></p> <p><i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i></p> <p><i>Criticism and self-criticism</i></p> <p><i>Production of free, creative and inductive thinking</i></p> <p><i>.....</i></p> <p><i>Others...</i></p> <p><i>.....</i></p>
<ol style="list-style-type: none"> 1) Working independently 2) Team Work 3) Production of new research ideas 4) Working in an interdisciplinary environment 5) Production of free, creative and inductive thinking 	

(3) SYLLABUS

<p>Introduction</p> <p>Metal powder characterization</p> <p> Metal powder production methods. Mechanical pressing.</p> <p> Sintering fundamentals.</p> <p> Sintering best practices</p> <p> Secondary processing</p> <p> Design considerations.</p> <p> Applications.</p>

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	In class, lectures	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	-	
TEACHING METHODS <i>The manner and methods of teaching are described in detail.</i> <i>Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i> <i>The student's study hours for each learning activity are given as well as the hours of non-directed study according to the principles of the ECTS</i>	Activity	Semester workload
	Lectures	39
	Essay	18
	Self-study	18
	Course total	75h
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions,</i>	<p>LANGUAGE OF EVALUATION: Greek</p> <p>METHOD OF EVALUATION:</p>	

<p><i>problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i></p> <p><i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i></p>	<p>(i) Final written examination (50% contribution)</p> <p>(ii) Essay (50% contribution)</p>
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(5) ATTACHED BIBLIOGRAPHY

<p><i>Lecturer's notes</i></p>
