

ETE 815. METAL WORKING**COURSE OUTLINE****(1) GENERAL**

SCHOOL	SCHOOL OF ENGINEERING		
ACADEMIC UNIT	DEPARTMENT OF MATERIALS SCIENCE AND ENGINEERING		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	ETE 815	SEMESTER	10^o
COURSE TITLE	METAL WORKING		
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	Special background <i>general background, special background, specialized general knowledge, skills development</i>		
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=2324		

(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 consists a specialized course in the field of metallic materials. The aim is to provide the undergraduate students with the appropriate knowledge related to the forming and shaping processing for metallic tool and artefact production based both on theoretical approaches of the microstructural modifications and the actual technological part of the industrial shaping and forming processes. The course provides to the students the opportunity to get in touch with the actual manufacturing processes based on the plastic deformation and gives them the necessary supplies to face any potential challenge in this field.

Upon the successful completion of the course, the students are able to: a) understand the basic knowledge of the principles related to the forming by plastic deformation, b) understand the major process parameters in each case, c) predict the material response upon forming, d) desing the appropriate heat and surface treatments for the optimum properties prior and after the forming process.

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?

Search for, analysis and synthesis of data and information, with the use of the necessary technology	Project planning and management
Adapting to new situations	Respect for difference and multiculturalism
Decision-making	Respect for the natural environment
Working independently	Showing social, professional and ethical responsibility and sensitivity to gender issues
Team work	Criticism and self-criticism
Working in an international environment	Production of free, creative and inductive thinking
Working in an interdisciplinary environment
Production of new research ideas	Others...

- 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

Introduction
 Basic principles of metal plastic deformation
 Wrought alloys
 Forging
 Extrusion
 Drawing
 Rolling of bulk material
 Rolling of sheet material
 Cutting
 Evaluation methods of metals formability
 Bending
 Tension
 Deep drawing

(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. 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. 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
<p>STUDENT PERFORMANCE EVALUATION</p> <p><i>Description of the evaluation procedure Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, 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>LANGUAGE OF EVALUATION: Greek</p> <p>METHOD OF EVALUATION:</p> <p>(i) Final written examination (50% contribution)</p> <p>(ii) Essay (50% contribution)</p>	

(5) ATTACHED BIBLIOGRAPHY

Lecturer's notes