SYLLABUS

Basic data of the subject	
University	**University of Applied Sciences in Ferizaj**
Academic unit	**Faculty of Engineering and Informatics**
Program	**Industrial Engineering with Informatics**
Title of the subject	**Processing of Materials I**
Level	**Bachelor**
Course Status	**CORE**
Year of studies	**II, Semester IV**
Number of hours per week	**3**
Value of Credits - ECTS	**5**
Time / location	
Course lecturer	
Contact details	
Course Description	*This course will introduce students to metal processing, processing machines, processing processes, the basics of metal processing theory, the quality of the worked surface as well as economic methods of processing.* *General knowledge of Numerically Controlled Machines - CNC - and their functions. CNC machine programming etc*
Objectives of the course	*The purpose of the course is to prepare students with the methods of processing materials. Processing machines, instruments and tools, auxiliary equipment during processing such as measuring ones, etc.*
Expected learning outcomes	*After successful completion of this course, the student will be able to:* • *Knows the metal processing process with* shavings *removal, setting the processing regime, machine tools in which the chip removal processing is done, etc.* • *To know what metal processing with* shavings *removal is, what are the machines, tools in which processing with chip removal is done, etc.* • *I know processing operations, the basics of metal cutting.* • *Apply the most economical method of processing between cutting and other processing during the preparation for machining machine details.* • *Determine the quality of the surfaces worked with chip removal.* • *To know the basics of metal processing with plastic deformation.* • *To be able to determine the most economical method of processing between cutting and plastic deformation during preparation for machining any product.*

Prerequisites	*There are no prerequisites to start learning Materials Processing I. However, it is recommended that students have a basic knowledge of metalworking and programming.*

Contribution to the student load (which must correspond with learning outcomes)			
Activity	**Hour**	**Day/Week**	**In total**
Lectures with numerical exercises	3	15	45
Internship	1	15	15
Contacts with teacher / consultations	1	6	6
Field exercises			
Midterm, seminars, and projects.	1	5	5
Homework	1	5	5
Self-learning time student (at the library or at home)	1	15	15
Final preparation for the exam	2	15	30
Time spent on evaluation (tests, quiz, and final exam)	1	3	3
Projects and presentations.	1	1	1
Total			**125**

Teaching methodology	*The course lasts 15 weeks with 3 hours of lectures and/or weekly individual and group exercises. The exercises will be held in the form of individual and group work in the laboratory at USHAF in which concrete examples will be discussed. Active participation is extremely important, so students are encouraged to regularly attend lectures and exercises and contribute to the discussions that take place in the lectures. Lectures, Exercises, individual work, discussions as well as active collaboration in student teams*
Assessment methods	*The student can choose to be assessed one of the two forms of assessment, given below:* *1. Form 1: Evaluation with two tests and the Project* *2. Form 2: Evaluation of the final exam.* ***Form 1:*** *In the first form of assessment "Assessment with two tests and project" the student is assessed in four activities that are carried out during the lectures:* *1. Test 1 (35%), individual assessment* *2. Test 2 (35%), individual assessment* *3. Class activity (10%), individual assessment* *4. Project (20%), group assessment.* ***Additional clarification:*** *If the student in each activity above reaches the maximum points,*

	then he will be evaluated with 100 points. *Students who pass the exam according to Form 1 of the assessment, are released from the obligation to take the final exam. Only if the student is not satisfied with the grade achieved according to form 1, then he can undergo the final exam to obtain a higher grade.* ***Form 2:*** *In the second form of evaluation, "Evaluation with the final exam", the student will undergo the exam which will be held after the end of the course lectures and is organized in the exam deadlines, determined by the University Senate.* *Through the final exam, the student can achieve a maximum of 70% of the points from the total of 100 points.* *The rest of the 30% points must be completed through group work on the Project, an activity carried out during the lectures.* *In Test 1, Test 2, and the final exam, the evaluation of the students will be done through an evaluation form, which must be completed individually by the student. The evaluation form will contain objective and subjective questions through which the student's learning outcomes will be evaluated:* • *The objective questions will be of the following types: (1) Multiple choice questions, (2) True/False, (3) Completion, and (4) Composition/Matching; questions that will be used to assess the student's abilities to recall and recognize the concepts and material of the course.* • *The subjective questions will be of the Essay/written task type that will be used to assess the student's understanding and abilities to apply the knowledge gained in the analysis, synthesis, and evaluation of the problem, from the answers prepared by the student to the question of submitting.* *Activity in the class means the student's engagement in dealing with the issues discussed in the class, during the lectures* *Project (30%), group assessment: it is an activity in which students apply the acquired knowledge in a concrete project. It is carried out in groups of 2 or 3 students who are obliged to carry out the activity, document it, and present it to the subject professor.* *For the form of realism and documentation of the activity, all*

	members of the group will be evaluated with the same point (20%), while the evaluation of the presentation skills of the activity is individual and includes 10%. ***Rating:*** *91-100 points – graded 10 (ten)* *81-90 points – graded 9 (nine)* *71-80 points – grade 8 (eight)* *61-70 points – grade 7 (seven)* *51-60 points – grade 6 (six)* *0-50 points – The student repeats the exam.*
The ratio of theory and practice	70% theory with exercises and 30% laboratory work.
Literature	
Basic Literature	1. *"Metal Forming: Mechanics and Metallurgy" nga William F. Hosford dhe Robert M. Caddell.* 2. *"Metal Cutting Principles" nga M.C. Shaw.* 3. *Zijadin Krasniqi; Përpunimi me prerje I, Universiteti i Kosovës, Prishtinë,1985.*
Additional Literature	1. *Prof. Dr. Adnan Bodinaku , Teknologjia mekanike 2 (The first part),* *Punimi me heqje ashkle , shtëpia botuese e librit universitar Tirana, 2004.* 2. Prof. Dr. Adnan Bodinaku , Teknologjia mekanike 2 (The second part), *Punimi me heqje ashkle , shtëpia botuese e librit universitar Tirana, 2005.* 3. Zijadin Krasniqi; Përpunimi me prerje I, Universiteti i Kosovës, Prishtina,1985. 4. K.Krammer; Schneldkramik, Diamant und Bornitrid zur Gusswerkstoffbearbitung, Ind. Anzeinger, 1977, 99,Nr.46. 5. *Tanush Hajnaj; Përpunimi plastik i metaleve , Universiteti i Tiranës, Fakulteti i Inxhinjerisë, Tirana, 1978.* 6. Internet.
Designed learning plan	
Week:	**Lectures and exercises to be held**
Week one	*Introduction. Basics of theory on metal processing*
Week two	*Processing with chip removal. Machines and types of processing*
Week three	*Chip removal processing. Machines and types of processing Forms of chips. Mechanism of chip formation.*
Week four	*Measurement of cutting forces.*
Week five	*Cutting temperatures. Measuring temperatures during cutting.*
Week six	*Tools for cooling and lubrication during cutting*
Week seven	*Test 1*
Week eight	*Protection at work during metalworking.*

Week nine	*Materials for metal cutting instruments.*
Week ten	*Types of metal cutting instruments during different processing operations.*
Week eleven	*Durability and wear of metal cutting instruments. The quality of the worked surface.*
Week twelve	*Works on the turning machine. Basic movements of machine tools, lathes, etc. In the laboratory of USHAF.*
Week thirteen	*Practical work (Internship) in the laboratory at USHAF*
Week fourteen	*CNC machines and their functions.* *Processing a detail on the CNC lathe, measuring the quality of its surface roughness.*
Week fifteen	*Test 2*
Academic policies and rules of conduct	
Regular attendance of lectures and exercises is necessary, as well as active participation in discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.	