# Syllabus

| **Basic data of the subject** | |
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| **Faculty:** | **Engineering and Informatics** |
| **Program:** | **Industrial Engineering with Informatics** |
| **Subject title:** | **Engineering Materials I** |
| **Level:** | **Bachelor** |
| **Case Status:** | **Obligatory** |
| **Year of studies:** | **I** |
| **Number of hours per week:** | **3** |
| **Credit value – ECTS:** | **5** |
| **Time / location:** | |
| **Subject teacher:** | |
| **Contact details:** | _____ |
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| **Description of the subject** | *This course will introduce students to metal processing, processing machines, processing processes as well as economic methods of processing.* |
| **Objectives of the course:** | *The purpose of the course is to prepare students with engineering 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:*<br>• *I know to know about engineering materials of materials, the processing of metals with chip removal, the setting of the processing regime, the machine tools in which the chip removal processing is done, etc.*<br>• *design the technological process for the processing of a machine part, starting from the semi-finished product to the finished part.*<br>• *determine the quality of the surfaces worked with chip removal.*<br>• *I know the processing operations, the basics of metal cutting.*<br>• *apply the most economical method of processing between cutting and other processing during the preparation for the processing of machine details.* |

| **Contribution to the student's workload (which must correspond to the student's learning outcomes)** | | | |
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| **ACTiViTY** | **hour** | **Day/week** | **in total** |
| Teaching (lectures and exercises) | 3 | 15 | 45 |
| Practical work | | | |

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| Contacts with the teacher/consultations | 3 | 5 | 15 |
| Field exercises | - | - | - |
| Colloquiums , seminars | 2 | 5 | 10 |
| Homework | | | |
| Student's independent study time (in the library or at home) | 3 | 15 | 45 |
| Final exam preparation | 2 | 4 | 8 |
| Time spent on assessment (tests, quizzes, final exam) | 1 | 1 | 1 |
| Projects, presentations, etc | 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 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, work individual, discussions, and work group. | | |
| **Prerequisites** | The student should have a general idea about Engineering Materials I , as well as at least have a good knowledge of the Materials used in Industry today. | | |
| **Evaluation methods:** | *The student can be evaluated in one of two ways of the assessment given below:*<br>***1. Form 1: Evaluation with colloquiums and project***<br>***2. Form 2: Evaluation with the final exam.***<br>***Form 1:***<br>*In the first form of assessment "Assessment with colloquiums and seminar work", the student is assessed in four activities that are carried out during the lectures:*<br>*1. Colloquium 1 (35%), individual assessment*<br>*2. Colloquium 2 (35%), individual evaluation*<br>*3. Class activity (10%), individual assessment*<br>*4. Project (20%), individual or group assessment.*<br><br>*Additional clarification:*<br>*If the student in each activity above reaches the maximum points, then he will be evaluated with 100 points.*<br>*Students who pass the exam according to form 1 of the assessment are released from the obligation to take the final exam.* | | |

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| | *Only if the student is not satisfied with the grade achieved under form 1, then he can take the final exam to get higher grade.*<br>***Form 2:***<br>*In the second form of evaluation, "Evaluation with the final exam", the student will undergo the exam, which is held after the end of the course lectures, and is organized in the exam deadlines, determined by the University Senate.*<br>*Through the final exam, the student can achieve a maximum of 80% of the total of 100 points.*<br>*The rest of the 20% points must be completed by individual or group work in the Project, an activity carried out during the lectures.*<br>*In Colloquium 1, Colloquium 2 and Final Exam, the assessment of students will be done through an assessment form, which must be completed individually by the student.*<br>*The evaluation form will contain questions distributed proportionally with the lectures conducted during the semester, the course material.*<br>• *The subjective questions will be of the type of written task that will be used to evaluate the student's understanding and abilities to apply the knowledge gained in the analysis, synthesis and evaluation of the problem, from the responses prepared by the student to the question presented.*<br>• *Activity in class means the student's engagement in dealing with issues discussed in class, during lectures.*<br>• *Project (30%), individual or group assessment: it is an activity in which students apply the acquired knowledge in a concrete project. It is carried out by only one student or in a group of 2 or 3 students who are obliged to carry out the activity, document it and present it to the subject professor.*<br>*For the form of realism and documentation of the activity, all members of the group will be evaluated with the same point (10%), while the evaluation of the presentation skills of the activity is individual and includes 10%.*<br>*Rating:*<br>*91-100 points - graded 10 (ten)*<br>*81-90 points - graded 9 (nine)*<br>*71-80 points - grade 8 (eight)*<br>*61-70 points - graded 7 (seven)* |

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| | *51-60 points - grade 6 (Six)*<br>*0-50 points – The student repeats the exam.* |
| **LITERATURE** | |
| **Basic literature:** | 1. *Zijadin Krasniqi; Cutting processing I, University of Kosovo, Pristina, 1985* |
| **Additional literature:** | 1. *Prof. Dr. Adnan Bodinaku, Mechanical technology 2 (first part),*<br>2. *Mechanical Engineers ' Handbook by Myer Kutz , 2015-02-20,*<br>3. *Prof. Dr. Adnan Bodinaku, Mechanical technology 2 (second part),*<br>4. *Mechanical Design Engineering Handbook by Peter RN Childs ,* 2018-11-24,<br>5. *K. Krammer ; Schneldkramik , Diamant und Bornitride zur Gusswerkstoffbearbitung, Ind. Anzeinger , 1977, 99, No. 46.*<br>6. *Tanush Hajnaj ; Plastic processing of metals, University of Tirana, Faculty of Engineering , Tirana, 1978,* |

| **Designed lesson plan:** | |
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| **WEEK** | **The lecture that will take place** |
| ***First week:*** | *Introduction. Materials technology.* |
| ***Second week:*** | *Materials and their division.* |
| ***Third week* :** | *Separation of technical materials, metal, ceramic, and polymer materials (or synthetic materials.* |
| ***Fourth week:*** | *Use of materials, Use of materials ferrous and their connections.* |
| ***Fifth week:*** | *The use of non-ferrous metals and their alloys.* |
| ***Sixth week* :** | *Materials non-metallic, Materials polymers - masses plastic.* |
| ***Seventh week:*** | *The first test* |
| ***Eighth week:*** | *Materials composite .* |
| ***Week nine:*** | *The impact of the development of engineering materials on various constructions.* |
| ***Tenth week:*** | *Properties of materials.*<br>*Classification of metal tests.* |
| ***Eleventh week* :** | *Practical work in the laboratory at USHAF*<br>*Numerically controlled machines - CNC and its functions.* |
| ***Twelfth week* :** | *Expressions used during the tensile test and other tests.* |
| ***Thirteenth week* :** | *Calculation of stresses.* |
| ***Fourteenth week* :** | *The second test* |
| ***Fifteenth week* :** | *Evaluation and presentation of seminar papers* |

| **Academic policies and rules of conduct:** |
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| The teacher sets the criteria for regular attendance in lectures and exercises and rules of etiquette such as: keeping calm in class, disconnecting mobile phones, entering the hall on time, etc. |