# SYLLABUS

| **The basic course information:** | |
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| **Academic unit:** | **Faculty of Engineering and Informatics** |
| **Title of the subject:** | **Manufacturing process** |
| **Level:** | **Bachelor** |
| **Course Status:** | **Core** |
| **Year of studies:** | **II** |
| **Number of hours per week:** | **3** |
| **Value of Credits - ECTS:** | **4** |
| **Time / location:** | |
| **Course lecturer:** | **Prof. Ass. Gjelosh Vataj, Dr.** |
| **Contact details:** | **gjelosh.vataj@ushaf.net** |
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| **Course description:** | *This course will inform students about the proper way of processing and production; design of production systems; production methods and techniques; types of production technologies; production processes: pouring, machining (drilling, turning, milling, retrieval, additive fabrication (laser forming, sintering,), polishing, coating processes, etc.).* |
| **Objectives of the course:** | *The aim of this course is to provide students with knowledge on the production and construction of details in various manufacturing industries.* |
| **Learning outcomes:** | *After successful completion of the course, students will be able to:*<br>• *know the basic concepts of production processes.*<br>• *develop detailed projects ranging from semi-finished products to market launch of the product.*<br>• *understand the processes of work organization, production operations, tools and equipment in these processes.*<br>• *apply the norms of production and control processes.* |

| **Contribution to the student load (which must correspond with learning outcomes)** | | | |
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| **Activity** | **Hour** | **Day/week** | **In total** |
| Teaching (Lectures and exercises) | 3 | 15 | 45 |
| Internship | | | |
| Contacts with teacher / consultations | 1 | 3 | 3 |
| Field exercises | | | |
| Midterm, seminars and projects. | 2 | 5 | 10 |

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| Homework | | | |
| Self-learning time student (at the library or at home) | 3 | 15 | 30 |
| Final preparation for the exam | 2 | 5 | 10 |
| Time spent on evaluation (tests, quiz and final exam) | 2 | 1 | 2 |
| Projects and presentations. | 1 | 1 | 1 |
| **Total** | | | **101** |
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| **Teaching methodology:** | *The course lasts 15 weeks with 3 hours of lectures and/or*<br>*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.*<br>*Lectures and exercises combined with lessons and exercises in the classroom, USHAF laboratory and on a study visit to any of the companies.* | | |
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| **Assessment methods:** | *The student can be evaluated in one of two ways shape*<br>*of the assessment given below:*<br>*1. Form 1: Assessment with colloquiums and project 2. Form 2: Assessment with the final exam. 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>*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.*<br>*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.*<br>*Form 2:*<br>*In the second form of evaluation, "Evaluation with the* | | |

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| | *final exam", the student will undergo the exam which is held after the completion 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 answers prepared by the student to the question presented.*<br>*• Activity in the class - means the student's engagement in dealing with the issues discussed in the class, during the 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*<br>*are evaluated with the same point (10%), while the assessment 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)*<br>*51-60 points - grade 6 (Six)*<br>*0-50 points – The student repeats the exam.* |
| **Literature** | |
| **Basic Literature:** | 1. *Prof.Dr.Hysni Osmani , Teknologjia prodhuese, Materialet Mekanike I dhe II* |
| **Supplementary Literature:** | 2. *Serope Kalpakjian, Steven R. Schmid,* |

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| | *Manufacturing Processes for Engineering Materials* |
| **Designed learning plan:** | |
| **Week** | **Lectures and exercises to be held** |
| ***Week one:*** | *Development, characteristics and separation of modern production technologies. Historical overview on the development of technology, the development of technology in different eras, technology as part of all human cultures, etc. Basic notions of manufacturing processes, technological processes. Technological operations. Technological parameters.* |
| ***Week two:*** | *Metal production processes. Extraction of metals, raw materials, preparatory processing, pyrometallurgical processes, cast iron and steel production technology, benefit of hydraulic products, smelting furnaces, steel pouring* |
| ***Week three:*** | *Laser processing methods and chemical and electrochemical processing* |
| ***Week four:*** | *Metalworking processes in foundry-foundry. Notions, Materials for molding, tools and equipment.* |
| ***Week five:*** | *Pouring processing processes: Pouring into molds, sand pouring, casting with melted model, casting from gypsum, accurate pouring of many details at once, pouring in metal molds - coke, pouring with pressure, centrifugal pouring* |
| ***Java e six*:** | *Processing processes with volumetric deformation, free forging, molding (stamping), elongation, drilling beyond* |
| ***Week seven:*** | *Overpressure technology, features, separation, use, traction, cylinder* |
| ***Week eight:*** | *Deformation processing technology of laminated sheets by bending, bending, splitting, stamping, drilling, etc.* |
| ***Week nine:*** | *Practical work in the USHAF laboratory.*<br>*Cutting material processing technology. Notions, division, characteristics, use. Processing technology of turning material, milling, woodworking, technological characteristics, drilling machining technology, traction (traction).* |
| ***Week ten:*** | *Practical work in the USHAF Laboratory.*<br>*Processing material processing technology, technological characteristics, superfinishi, polymerization, dental processing technology, Fellows, Maag and Fauther methods* |
| ***Week eleven:*** | *Thermal processing of metals: Basics of thermal processing, thermal processing operations, the main methods of thermal processing. Baking, tempering, rejuvenation, normalization,* |

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| | *improvement* |
| ***Week twelve:*** | *Technology of processing polymer masses by cutting, twisting, pudding. Machinery tools and equipment for processing plastic masses.* |
| ***Week thirteen:*** | *Conventional and contemporary coupling methods, separation, technological characteristics, welding techniques.* |
| ***Week fourteen:*** | *Unconventional processing methods, tires, pressurized fluid, explosion. Unconventional cutting processing methods, abrasive roller, ultrasound, electroerosis.* |
| ***Week fifteen:*** | *Presantation of the seminars papers.* |

| **Academic policies and rules of conduct:** |
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| *Regular attendance of lectures and exercises is necessary, as well as active participation with discussion and solution of tasks. Not impeding the progress required for learning using mobile phones turned off or in silent mode.* |