

SYLLABUS

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| Basic data of the course: | | | |
| Academic unit: | Faculty of Management / Industrial Management | | |
| Course title: | Engineering materials | | |
| Level: | Bachelor | | |
| Course status: | Obligatory | | |
| Year of studies: | I | | |
| Number of hours per week: | 2+2+2 | | |
| Value in credit – ECTS: | 6 | | |
| Time / location: | 9.00 – 12.00 / Room 204 12.30 – 14.00 / S 118 | | |
| Course teacher: | Mr.sc.Fatmir Çerkini | | |
| Contact details: | Office nr.116, tel. 044 219 128, fatmirqerkini@gmail.com, fatmir.qerkini@uni-pr.edu | | |
| Course Description | | | |
| | <i>Introduction.Metals. Testing of metals and alloys. Internal construction of materials.Structure of metals and metal alloys.Equilibrium diagrams of iron-carbon (Fe-C) bonds. Iron Metallurgy. Steel and his production.Symbolization of steels according to DIN standard.Heat treatment of metals.Chemical-thermal processing of steels and alloys. Non-ferrous metals and their alloys. Anti-friction connections.Strong connections. Pouring. Nonmetallic materials. Wood. Tires. Asbestos. Glass. Plastic measures. Rubbers.Adhesives. Materials for reticulation. Paints, varnishes, kits</i> | | |
| Objectives of the course: | <i>Introduce students to materials used in machinery and other construction. Knowing the properties of materials, their crystalline building, their benefits, and appropriate use of materials. Ways of metalworking, ranging from foundries (spill), their thermal processing.</i> | | |
| Expected outcomes from learning: | <i>After completing this course (course) the student will be able to: 1. To know the properties of mechanical materials, e.g. properties of metals 2. To describe the characteristics of the materials and make their difference 3. To make the selection of appropriate materials, depending on the country of use for any construction 4. Evaluate the properties and properties of materials</i> | | |
| Student contribution (which should correspond to the student's learning) | | | |
| Activity | Hour | Day / week | Total |
| Lectures | 2 | 15 | 30 |
| Theoretical / laboratory exercises | 2 | 15 | 30 |
| Practical work | - | - | - |
| Contacts with the teacher / | 0.5 | 15 | 7.5 |

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| consultations | | | |
| Field exercises | - | - | - |
| Tests, seminars | 2 | 2 | 4 |
| Homework | 1 | 15 | 15 |
| Student self time study | 2 | 15 | 30 |
| Final exam preparation | 2 | 15 | 30 |
| Time spent in evaluation (tests, quizzes, final exam) | 1 | 2 | 2 |
| Projects, presentations,etc | 0.5 | 2 | 1 |
| Total | | | 149.5 |
| Teaching methodology: | | | |
| | <i>Lectures and exercises combined with case studies and classroom discussions</i> | | |
| Evaluation methods: | | | |
| | <p><i>Tests and final exam rated by 100% of the grade. The exam consists of questions and answers, open-ended questions, and assignments.</i></p> <p><i>First evaluation 35%</i> <i>Second evaluation 35%</i> <i>Exercises 15%</i> <i>Attendance 15%</i> <i>Final exam: 70%</i></p> <p>----- <i>Total: 100%</i></p> | | |
| Literature | | | |
| Basic literature: | <i>Fatmir Çerkini, Teknika e materialeve (dispensë), Fakulteti i Shkencave të Aplikuara – Ferizaj</i> | | |
| Additional literature: | <ol style="list-style-type: none"> <i>1. Prof.dr.N.Boshnjaku „NJOHURI MATERIALESH TË MAKINERISË”, Universiteti i Kosovës, Prishtinë 1985</i> <i>2. Gian Mario Paolucci „LEKSIONE TË METALURGJISË“ 1,2, Padova, Itali (përkthim në shqip 2006)</i> <i>3. B.Baholli, I.Hoxha, V.Nika, G.Demiraj, E.Lamani „STRUKTURA DHE PËRPUNIMI TERMIK I METALEVE”, Tiranë 1986</i> <i>4. Doc.Tahir Haxhiymeri, Ali Katragjini, Qiriako Leka, Shyqyri Meta „TEKNOLOGJIA E MATERIALEVE”, Tiranë 1992</i> <i>5. Prof.dr.Fatmir Agolli „METALURGJIA E METALEVE ME NGJYRË”, Universiteti i Kosovës 1985</i> | | |

| Designed lesson plan : | |
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| Week | The lecture to be held |
| Week one: | <i>Introduction. Crystalline materials. Metals, properties of metals. Metal separation</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week two: | <i>Tests of metals and alloys. Mechanical proofs with static force action. Proof in tow. Proof in printing. Proof in bending. Evidence of twisting. Proof in the cut.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week three: | <i>Tests of hardness with static force action. According to Brinel, according to Wickers, according to Rockwell.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week four: | <i>Hardness testing with dynamic action of force. Proof of futility. Testing of metals and alloys at low and high temperatures.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week five: | Technological evidence. Proof of tempering ability. |
| Week six: | <i>Evidence in Foreground cutting. Steel rope test. Tests to detect defects in the material. Protection from the rays of the x-ray.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| First evaluation | Metals and their testing |
| Week seven: | <i>Structural networks. The formation of crystals. Deformation mechanisms.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week eight: | <i>Defects of crystalline metal structure and errors in crystalline meshes.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week nine: | <i>Metal alloys. Phase diagram of the double bonds.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week ten: | <i>Diagrams of balancing iron-carbon alloys. The most important structures of Fe - C bonds.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week eleven: | <i>Iron Metallurgy. The process of obtaining iron in high furnaces. Steel and its production. The benefit of steel in converters, in the Simens-Martin furnace and in electric furnaces.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week twelve: | <i>Standardized description of metallic materials with examples of other relevant standards. Classification of steels. The symbolism of steels according to DIN EN standards, etc.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week thirteen: | <i>Baking technology, tempering and rearrival. TTT Diagrams.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week fourteen: | <i>Impact of alloying elements on microstructure, in thermal and other properties of materials.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Week fifteen: | <i>Necessary properties and internal structures of wrought, molded and sintered materials.</i> Literature: <i>Fatmir Çerkini, Teknika e materialeve</i> |
| Second evaluation | Fe-C diagram. Heat treatment and symbolization of steels |

Academic policies and rules of conduct

Set etiquette policies in line with USHAF status.

The teacher sets the criteria for regular attendance at lectures and exercises and rules of conduct such as: keeping calm in class, switching off cell phones, entering the room on time, etc.