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	**Machine Elements**
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 provide students with the basic knowledge and concepts of calculating tolerances, loads, stresses and the safety factors of various mechanical elements using different methods of solving practical problems in engineering.*
Objectives of the course	*The aim of the course is to prepare students with the basic and advanced principles of use, calculation and construction of various machine parts based on their analytical calculations and constructive choices.*
Expected learning outcomes	*After the completion of this module, student will be able to:* • *know the concept of machine elements tolerances, the loads that operate as well as the safety factors of various machine elements,* • *understand the calculation of tolerances, stresses, loads and safety factors of various machine elements (bolts, belt drives; chain drives, gear transmitters, shafts etc.),* • *choose the right methods for calculating machine elements,* • *apply appropriate theoretical methods in solving practical problems.*
Prerequisites	*There are no prerequisites to get started with the Machine Elements. However, it is recommended that students have a basic understanding of Mathematics and Mechanics.*

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			
Contacts with teacher / consultations	1	5	5
Field exercises			

Midterm, seminars and projects.	2	10	20
Homework			
Self-learning time student (at the library or at home)	2	15	30
Final preparation for the exam	1	15	15
Time spent on evaluation (tests, quiz and final exam)	1	5	5
Projects and presentations.	1	5	5
Total			**125**

Teaching methodology	*Lectures and exercises and class 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 five activities that are carried out during the lectures:* 1. *Test 1 (20%), individual assessment* 2. *Test 2 (20%), individual assessment* 3. *Test 3 (30%), individual assessment* 4. *Class activity (10%), individual assessment* 5. *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 work on the Project, and activity carried out during the lectures. *In Test 1, Test 2, Test 3 and the final exam, the evaluation of the students will be done through:* • *Numerical tasks (the student must solve the tasks individually)* • *Theoretical tasks (questions from the material of the subject)* *Activity in the class means the student's engagement in dealing with the issues discussed in the class, during the lectures.* *Project (20%), individual assessment: it is an activity in which students apply the acquired knowledge in a concrete project. It is carried out individually by students who are obliged to carry out the activity, document it, and present it to the subject professor.* ***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. *Dr sc Nijazi IBRAHIMI, DETALET E MAKINAVE I, Prishtinë 2004.* 2. *Dr sc Nijazi IBRAHIMI DETALET E MAKINAVE II/1 dhe 2, Prishtinë 2006.* 3. *Dr sc Sadullah AVDIU, PRAKTIKUMI I DHE II, Prishtinë 2003.* 4. *Dr sc Nijazi IBRAHIMI, DETALET E MAKINAVE I dhe II, Përmbledhje e detyrave te zgjidhura, Prishtinë, 2007.*
Additional Literature	1. *Nieman: Maschinenelemente, Band I & II.* 2. *Jashari I., Pllana G.: Detalet e makinave.*
Designed learning plan	
Week:	**Lectures and exercises to be held**
Week one	*The main dimensions of machine elements. Tolerances. Position of tolerances fields. Types of fits.*
Week two	*Carrying capacity of machine elements and machine elements loaded with static loads.* *Numerical exercises (tolerances).*

Week three	*Mechanical elements Joints (power screw). Bolted connections.* *Numerical exercises (Bolted connections).*
Week four	*Rivets joints. Springs.* *Test 1 (Held after the fourth week)*
Week five	*Transmitters. Friction transmitters. Belt transmitters. Chain transmitters.* *Numerical exercises (belts and chains).*
Week six	*Gear transmitter (introduction) The law of gearing*
Week seven	*Spur and helical gear pairs. Standard profile. Chordal dimension and chordal dimension teeth. Contact ratio.*
Week eight	*Numerical exercises (Torque power and number of rotation of gear transmitters. Contact ratio).*
Week nine	*Analysis of forces on gears.*
Week ten	*Shafts. Axes. Preliminary and final calculation of shafts.* *Test 2 (Held after the tenth week)*
Week eleven	*Types of shafts fits (press fits, channels and keys).*
Week twelve	*Bearings (Calculation and bearing selection)*
Week thirteen	*Couplings.* *Numerical exercises (Calculation of shafts).*
Week fourteen	*Numerical exercises (Calculation of shafts and bearings).*
Week fifteen	*Test 3*
Academic policies and rules of conduct	
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.	