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	**Automatic Adjustment - Control**
Level	**Bachelor**
Course Status	**Core**
Year of studies	**III, Semester VI**
Number of hours per week	**3**
Value of Credits - ECTS	**5**
Time / location	
Course lecturer	
Contact details	
Course Description	*The course provides students with fundamental knowledge of Automatic Adjustment, tools and their application in the development automation. Students are taught to design a sequential digital circuit, the mathematical approach of dynamic systems and the method of comparison, the application of Laplace transformations to the solution of differential equations, the application of computers to automatic. Examples of applying Automation to Machinery.*
Objectives of the course	*Familiarity with the basic principles of automatic regulation. Introducing analysis and synthesis methods, as well as elements of automation. Linking the theoretical approach to the real automatic systems that surround us.*
Expected learning outcomes	*Upon successful completion of this course, student will be able to:* • *To know the analogy of different physical systems and their parts with adequate typical models* • *Be capable of independently forming models of technical systems* • *Be able to solve practical problems in the field of automatic regulation.*
Prerequisites	*N/A*

Contribution to the student load (which must correspond with learning outcomes)			
Activity	**Hour**	**Day/Week**	**In total**
Lectures	2	15	30
Theoretical exercises / laboratory	1	15	15
Internship	1	10	10
Contacts with teacher / consultations	1	1	1
Field exercises			

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

Teaching methodology	*The course lasts 15 weeks with 4 hours of individual and group weekly lectures and 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 attend lectures and exercises regularly and to contribute to the discussions that take place in the lectures. Lectures, coaching, individual work, discussions and group work.*
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 (30%), individual assessment* *2. Test 2 (30%), individual assessment* *3. Class activity (10%), individual assessment* *4. Project (30%), 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.*
Literature	
Basic Literature	1. *Shaban Shabani, Dirigjimi dhe rregullimi automatik, Universiteti i Prishtinës, Prishtinë, 2002* 2. *Shaban Shabani, Ramë Likaj, Teknika e rregullimit përmbledhje detyrash të zgjidhura, Prishtinë, 1998*
Additional Literature	1. *H. Peter.J, "Regelungstechnik", Wien, 2000*
The ratio of theory and practice	*70% theory with exercises and 30% laboratory work.*

Designed learning plan	
Week	**Lectures and exercises to be held**

Week one	*Introduction of syllabus, teaching methods and assessment methods.*
Week two	*Introduction to automation, automation development, control, adjustment and management* *Automatic conduction and adjustment*
Week three	*Numerical systems and mathematical operations*
Week four	*Logical Functions, Bulb Algebra, Logical Elements, Logical Function Formulation and Minimization*
Week five	*Combined circuits and sequence sequences, RS bistable, T bistable and D bistable*
Week six	*Test I*
Week seven	*Mathematical approach of dynamic systems and method of comparison* *System analysis in the field of complex variables and in time interval* *Laplace's transformation and its theorems*
Week eight	*Applying Laplace to the solution of differential equations* *Frequency band systems analysis* *Transmission sinusoidal function*
Week nine	*Block diagrams and actions with blocks* *Regulatory facilities and equipment* *Digital control systems*
Week ten	*Systems stability criteria* *Modeling linear adjustment systems in the state space*
Week eleven	*Regulatory action analysis* *Synthesis of regulatory actions* *Examples of applying automation to Machinery*
Week twelve	*Study visits to enterprises*
Week thirteen	*Workshop presentations*
Week fourteen	*Test II*
Week fifteen	*Course summary and presentation of seminar papers*

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.