[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

Mechanization is the process of changing from working largely or exclusively by hand or with animals to doing that work with machinery. In an early engineering text a machine is defined as follows:
Every machine is constructed for the purpose of performing certain mechanical operations, each of which supposes the existence of two other things besides the machine in question, namely, a moving power, and an object subject to the operation, which may be termed the work to be done.
Automation is the technology by which a process or procedure is performed without human assistance. Automation or automatic control is the use of various control systems for operating equipment such as machinery, processes in factories, boilers and heat treating ovens, switching on telephone networks, steering and stabilization of ships, aircraft and other

2. Course Goals and Objectives (Approximately 100 words)

The relation between automation and mechanization may be illustrated by a simple example. Consider the manufacture of metal washers. These course could be made from lumps of metal using only hand tools. A better way is to use a machine tool which can stamp out dozens of washers at one stroke from sheet metal fed into it. That is mechanization. The machine is under the control of a machinist who watches the product, perhaps with the aid of measuring and sensing devices, and adjust the speed of the machine, if the parts do not come out as required. Now suppose that sensing and measuring devices fitted to the machine examine the washers as they are produced and feed back information to an automatic control unit which compares what is happening with what is ordered by a tape carrying instructions for the machine. That is automation. The manual control of the machinist is replaced by the automatic control which operates through a closed loop, as the feedback path is called.

3. Textbook (Title, Author, Publisher, Year of Publication, etc.)

1. Комплексная механизация и автоматизация ремонта подвижного состава, Перельман Д.Я ва бошқалар, М.: Транспорт,2011г.
2. Основы автоматики и автоматизации тепловозов, Луков Н.М., Учебник для ВУЗов ж.д Транспорта. М.: Транспорт, 1999 -296с.

4. Reference

1. ИШЛАБ ЧИҚАРИШ ЖАРАЁНИНИ АВТОМАТИЗАЦИЯЛАШ ВА МЕХАНИЗАЦИЯЛАШ, Валиев М.Ш., Ташкент - 2012
2. АВТОМАТИЗАЦИЯЛАШ ВА МЕХАНИЗАЦИЯЛАШ АСОСЛАРИ, Юсуфбеков М.Р., Ташкент - 2015

5. Course Requirements and Grades

Course prerequisites:
Students should have some background in Chemistry, Mathematics, Physics.
Grading System:
Homework 20%
Design Project 15%
Mid-term Exams 35%
Final Comprehensive Examination 30%
Total 100%
5=86-100

6. Course Calendar

Week	Main Content
1	Асосий тушунча ва қоидалар. Автомат қурилмалар таркиби
2	Электр бўлмаган қийматларни электр қийматга айлантириб берувчилар
3	Кучайтиргичлар ҳақида умумий маълумот. Магнит кучайтиргичлари
4	Гидравлик кучайтиргичлар. Пневматик кучайтиргичлар
5	Электромагнитли реле. Ўтувчи жараёнлар.
6	Автоматиканинг ижрочи элементлари ҳақида умумий маълумотлар. Бим
7	Ишқаланиш муфталари. Сирпаниш электромагнит муфталари
8	Гидроавтоматика қурилмаларининг таснифи. Гидравлик насослар.
9	Гидравлик ижрочи элементлар. Дискрет ишлаб чиқаришни автоматлаш
10	Дастгоҳларнинг юклаш қурилмаларини ва технологик агрегатларни авт
11	Дастгоҳларавтомат бошқариш тизими. Технологик агрегатларни автома
12	Локомотив таъмирлаш корхоналарнинг яхлит қисмлар ишлаб чиқишда т
13	Пайвандлаш ишларини механизациялаш ва автоматлаштириш. Қурилм
14	[illegible]