[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

Machines are made up of machine elements, which are individual parts of the machine that move and impact on other parts to make the machine work. Although a machine element may consist of smaller structural parts, the entire setup that performs the function is considered the element. For example, a valve consists of several components, including a handwheel and a shaft or stem, but only the entire valve would be called a machine element. There are a wide variety of different machine elements, both general-purpose and special-purpose, and their optimal design is a major field of study in engineering.
General-purpose machine elements can be used in any application, and include items such as gears, bearings, and shafts. Gears are rotating parts with interlocking teeth that turn against other gears, causing them to turn and transmit rotational force, or torque. Bearings are used to carry force — an example is the ball bearing, which allows for reduced friction as it rolls freely

2. Course Goals and Objectives (Approximately 100 words)

The other main category of machine element is the special-purpose machine element. These devices also use the basic principles of force and motion to function, but unlike general-purpose elements, they can be used only in specific applications. Pistons and valves are examples of such parts. Valves control the flow of fluid or gas through a pipe by obstructing the pipeline, and can be opened or closed using an external switch or wheel. Pistons are moving components used in engines and pumps to transmit force from the pressure of gas or fluid in a cylindrical chamber, or to force out that gas or fluid.
In designing a machine element, engineers seek to optimize several factors. The machine element must have enough strength and durability to perform its intended function reliably, but should also be as small and light as possible. Ideally, it should also be easy and inexpensive to manufacture and maintain while still conforming to industry standards. Since the basic

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

Mashina detallari. Shoobidov Sh.A. Texnika oily o`quv yurtlari uchun darslik. Тошкент: “O`zbekiston ensiklopediyasi”, 2014. -444 b.
Mashina detallari. Kurganbekov M.M., Moydinov A. O`quv qo`llanma. I va II qismlar.-Toshkent: “O`zbekiston ensiklopediyasi”, 2014. -384 b.

4. Reference

Mashina detallari. R.N. Tojiboyev, A.J. Jo`rayev, R.X. Maksudov. “Fan va texnologiya”, 2010, 216 b.
“Mashina detallari” Kurganbekov M.M., Musayev S.O., Mirzayev Q.Q. kursi bo`yicha laboratoriya ishlari. O`quv –uslubiy qo`llanma. ToshDTU, 2011.-89 b.

5. Course Requirements and Grades

Course prerequisites:
Students should have some background in Chemistry, Mathematics, Physics.
Grading System:
Homework 15%
Design Project 15%
Mid-term Exams 35%
Final Comprehensive Examination 35%
Total 100%
5=86-100
4=71-85

6. Course Calendar

Week	Main Content
1	Mashina detallarining umumiy tasnifi. Mashinalar ishonchliligi haqida tushur
2	Mashina detallariga ta'sir qiluvchi kuchlanishlar
3	Birikmalar haqida umumiy ma'lumotlar. Payvand birikmalar.
4	Kavsharli va yelimli birikmalar. Parchin mixli birikmalar.
5	Rezbali birikmalar. Umumiy ma'lumotlar. Rezbali birikmalarni mustahkamlikk
6	Shponkali birikmalar. Shlitsali birikmalar.
7	Shlitsali birikmalarning yuklanish qobiliyatini hisoblash usullari. Detallarni tig`
8	Mexanik uzatmalar. Uzatmalarning asosiy parametrlari.
9	Friksion uzatmalar va variatorlar. Tishli uzatmalar.
10	To`g`ri tishli silindrsimon uzatmalarni mustahkamlikka hisoblash. Konussimo
11	Planetar uzatmalar va ularni hisobi. Chervyakli uzatmalar.
12	Vint-gaykali uzatmalar. Tasmali uzatmalar. Zanjirli uzatmalar.
13	Vallar va o`qlar. Podshipniklar.
14	Muftalar. Yuk ko`tarish-tashish mashinalari.