[A-3]COURSE SYLLABUS

1. Course Description (Approximately 100 words)

Engineering thermodynamics is one of the general technical subjects, studying the principles and constructive properties of heat transfer, transformation, transmission, use and operation of thermal machines and devices. This subject can be divided into 3 parts: Thermodynamics, Heat and Mass Transfer Theory, and Heat Machines and Devices. Thermodynamics examines the laws of energy exchanging in various physic and chemical processes occurring in the heat effects of macroscopic systems. Technical thermodynamics examines the laws of heat and mechanical energy exchange. Technical thermodynamics is a theoretical basis of thermal engineering, in conjunction with the theory of heat and mass transfer, by design and calculation of all thermal machines.
This course teaches students to generate heat energy by using thermal machines, power equipment and aggregates, to convert them into other types of energy, to transfer, to distribute, and to use technological equipment efficiently. The course covers issues such as the fuel

2. Course Goals and Objectives (Approximately 100 words)

The main goal of the course is to provide theoretical and practical knowledge on energy generation and the efficient use of machines and aggregates of industrial enterprises; Developing the fundamental knowledge on analyzing the processes of energy exchange in machine and aggregates, heat and cooling machines, increasing the effectiveness of new techniques and technologies.

LEARNING OUTCOME
On completion of this module, the successful student should be able to:
-understand basic concept and laws of termodynamics;
-evaluate properties of ideal and real gases;
-have a basic knowledge how energy is transmitted;
-analyze thermodynamic processes in gas and liquids;

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

Issiqlik texnikasi. Author: Nurmatov Z, O'qiyuvchi, 1998
Техническая термодинамика и теплопередача, Author: Карминский В.Д, Маршрут, 2005
Теплотехника, Author: Колчин А.И, Высш. шк, 2000
Engineering thermodynamics, Author: R.K.Rajput, Laxmi publication (P) LTD, 2007

4. Reference

http://www.teplotexnika.ru
http://www.ktemp.dp.ya/ru/inf1.html
http://www.ziyonet.uz

5. Course Requirements and Grades

Students will be assessed by exams and homework. Students will be given tasks as a homework regularly after each lectures. Sometimes students works in a small group.
All homework assignment worth as 30 %.
There will be two midterm exams form of test worth 20 % each.
Final exam worth 30 %.

6. Course Calendar

Week	Main Content
1	Introduction to thermodynamics.
2	Ideal gas properties.
3	The first law of thermodynamics
4	Thermodynamic processes of ideal gases
5	The second law of thermodynamics
6	Vapor property and cycle
7	Compressors. IC engine cycles
8	Gas turbine engines cycles
9	Refrigeration cycles
10	Heat transfer
11	Energetic and environmental issues of using heat power
12	Revision
13	
14	