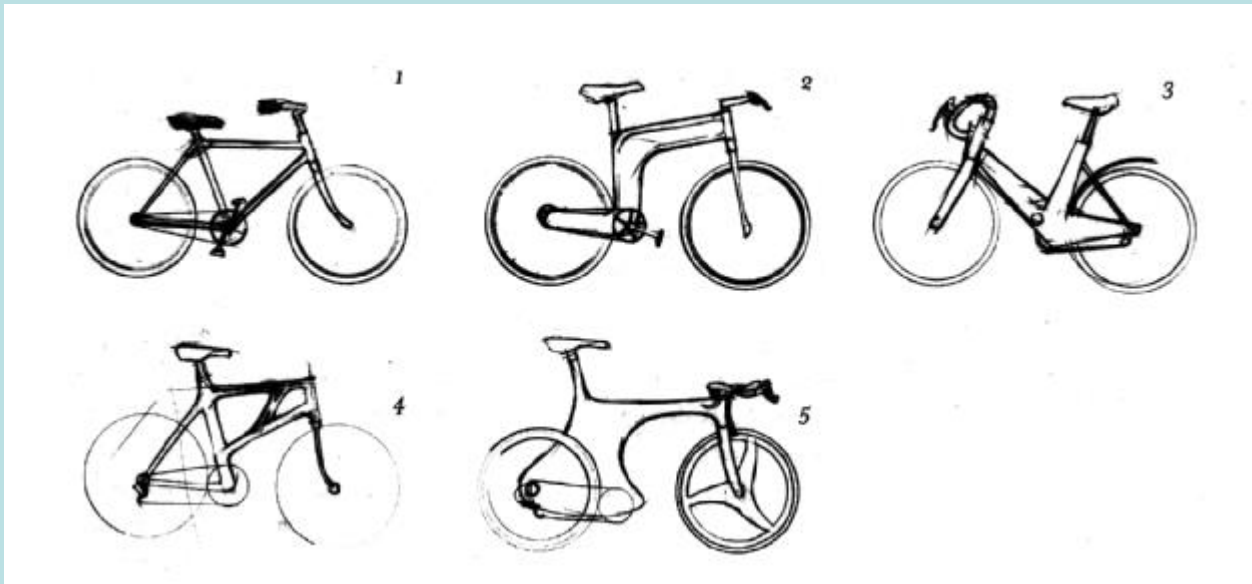


DESIGN IN MECHANICAL ENGINEERING



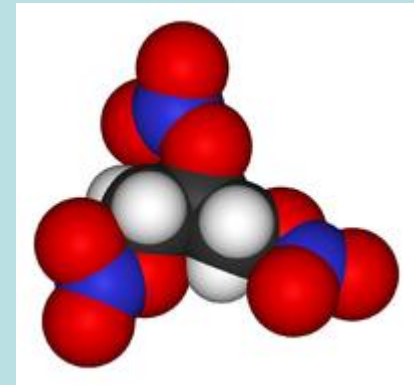
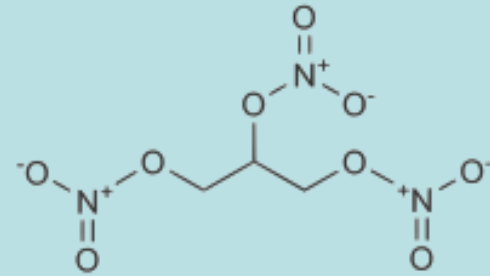
SCIENTIST VS ENGINEER

Scientists try to understand the forces of the nature for the good (!) of mankind.

Engineers makes the forces of the nature work for the good (!) of mankind.

Nitroglycerin

Nitroglycerin by itself is a very strong explosive, but is extremely shock-sensitive (that is, physical shock can cause it to explode) which makes it highly dangerous to transport or use.



Spacefill model of Nitroglycerin

Alfred Nobel invented **Dynamite** which was the first safely manageable explosive form of Nitroglycerin.

Nobel obtained [patents](#) for his invention in Sweden on October 19, 1867.

Functions of an Engineer

- After graduation, you may become involved in one or more of the functions below:
 - **Research** (2 =? 2)
 - **Development** (if it works, who cares if 2 = 2.11 or 1.96)
 - **Design**
 - **Production and Testing,**
 - **Construction,**
 - **Operations and Maintenance,**
 - **Sales,**
 - **Management,**
 - **Consulting,**
 - **Teaching** (If you can not make it, you teach how to make it)

What Companies Want from New Engineers

- Surveys done periodically by Engineering Societies in Developed Countries as well as in Turkey, indicate the first three main skills requested:
 - **Communication skills,**
 - **Team-working skills,**
 - **Technical knowledge,**
 - and others....

What is DESIGN ?

- Engineering Design is a systematic process by which solutions to the needs of humankind are obtained.
- According to the ABET:
Engineering Design is the process of devising a system, component, or process to meet desired needs.
It is a **decision-making process** (often iterative) in which the basic sciences, mathematics, and engineering sciences are applied to convert resources optimally to meet the stated objective.

A simple definition of DESIGN:

It is a systematic problem solving activity toward an objective.

Very Similar to Thinking Process...

Engineering Design Process

