**Chemical Engineering Principle 2**

Continuing from the previous semester (Chemical Engineering Principle 1) that we have taken mass balance (based on the principle of mass conservation: mass in=mass out) we have gone through the basics of the chemical process including the reactive and non-reactive chemical reactions, then we had continued with the first chapter of energy balance (first law of thermodynamic) which introduced the principle of energy conservation:

∆H+∆Eu +∆Ep =Q-W (first law of thermodynamic)

**Energy Balance**

In this semester we continued with chapter8 and 9 of the reference book (Elementary Principles of Chemical Process), chapter 8 included all the basic principles of energy balance for (non-reactive process) including the process through open system and close system and the changes of the enthalpy related to that.

∆H=∆U+PV

In chapter 8 we have been introduced to new instruments as well like: heat exchanger

m1

m1

m2

m2

In the end of chapter 8 we have been introduced to the Psychrometric chart (humidity chart) as a chart relate the (enthalpy, temperature, pressure, dry bulb temperature, humidity, moisture content).

In chapter 9, we have continued with the same concept of the energy balance but this time with the reactive balance as a result we had to study about the heat formation and the formation of the combustion.

**Thermodynamic**

In the second part of this course we moved to a new topic which is new and different topic than the previous one even though it is talking about heat which is one form of energy. The second part of the chapter was divided into three chapters:

* Chapter 3: Second Law of thermodynamic

Which states that ‘Energy systems have a tendency to increase their entropy (chaos) rather than decrease it’? The focus of the chapter was about the transferring of the heat between the reservoirs and the Carnot cycle.

* Chapter 4: Entropy.

Entropy is an extensive property of a system and sometimes is referred to as *total entropy*. Entropy per unit mass, designated *s*, is an intensive property and has the unit kJ/kg · K. The term *entropy* is generally used to refer to both total entropy and entropy per unit mass since the context usually clarifies which one is meant.

* Chapter 5: Power and refrigeration system.

The method of teaching by Prof.Aznizam Abu Bakar was very effective and convenient in a way that helped us improving our abilities to understand the basic concepts of chemical engineering (heat, entropy, enthalpy…etc), his way of teaching included distributing quizzes and exercises to the students in a way that helped them exercise the theory of the subject in addition to that it will help them archive all the material they have in a decent manner.