TRADITIONAL AND MECHATRONICS DESIGNS

- Engineering design is a complex process which involves interaction between many skills & discipline.
- In traditional design, the components are designed through mechanical, hydraulic or pneumatic components and principles.
- But in mechatronics approach, mechanical, electronics, computer technology & control engineering principles are included to design a system.
- For example design of weighing scale might be considered only in terms of the compression of springs and a mechanism used to convert the motion of spring into rotation of shaft and hence movements of a pointer across a scale.
- In this design measurement of weight is depended on the position of weight on the scale.
- In mechatronics design, the spring might be replaced by load cells with strain gauges and output from them used with a µp to provide a digital readout of the weight on an LED display.
- This scale might be mechanically simpler, involving fewer components and moving parts. But the s/w is somewhat complex.
- similarly the traditional design of the temperature control for a central AC system involves a bimetallic thermostat in a closed loop control system.
- The basic principle behind this system is that the bending of the bimetallic strip changes as the temperature change and is used to operate ON/OFF switch for the temperature control of the AC system.

- The same system can be modified by mechatronics approach.
- This system uses a microprocessor controlled thermo couple as the sensor, such a system has many advantages over traditional system.
- The microprocessor controlled thermodiode system can be applied and is giving precision and programmed control.
- This system is much more flexible.
- This improvement in flexibility is a common characteristics of the mechatronics system when compared with traditional system.

Traditional Design	Mechatronics design
- It is based on traditional system such as mechanical, hydraulic & pneumatic	- It based on mechanical, electronics, computer technology and control engineering.
- Less flexible	- more flexible
- Less accurate	- more accurate
- more complicate mechanism in design	- less complicate mechanism design.
- It involves more components and moving parts	- It involves fewer components & moving parts.