HVAC Laboratory

Experiments

- Efficiency determination of preheating resistance
- Preheating air in an air conditioning installation
- Dehumidification process study
- Mass balance in the evaporator
- Energy balance in the evaporator
- Re-heat effect
- Determination of air specific heat capacity
- Dehumidification in a recycling process
- Energy balance in the steam generator
- Operation system of the evaporator
- Determine the effect of high outlet pressure on the system
- Relate pressure and temperature of the system
- Monitoring changes in system as capillary tube is clogged
- Determine correct loading for cooling systems
- Determine the effect of inadequate liquid on cooling system
- Determine the effect of excess liquid on cooling system

This laboratory course introduces students to the concepts of Heating, Ventilation and Air-Conditioning (HVAC). It develops physical understanding through experimentation as students performs experiment and analyze raw data and organize it into a comprehensive lab report.

Major equipments involve in this laboratory course are:

- Basic Cooling Troubleshooting Training Set
- Split Air Conditioner Training Set
- Computer Controlled Air Conditioning, Refrigeration and Heat Pump Units
- Steam Generators
- Computer Controlled Recirculating Air Conditioning Unit
- Computer Controlled Bench Top Cooling Tower

Figure 1 Basic Cooling Troubleshooting Training Set

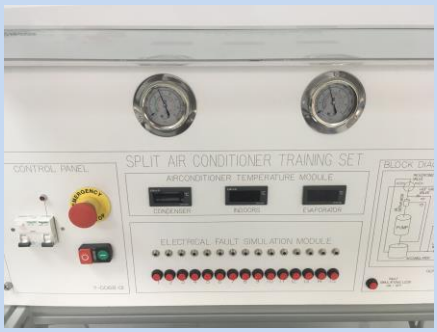

Figure 2 Split Air Conditioner Training Set

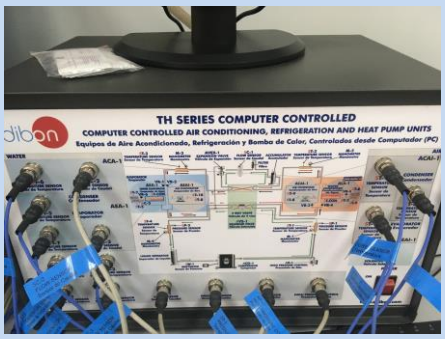

Figure 3 Computer Controlled Air Conditioning, Refrigeration and Heat Pump Units

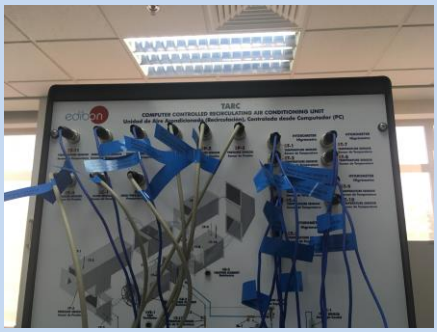

Figure 4 Computer Controlled Recirculating Air Conditioning Unit