

## **230001 HEATING, VENTILATING, AND AIR CONDITIONING EQUIPMENT**

1. Kutztown University requires humidity control for classrooms, and offices. Certain areas in dormitories may also require humidity control as per University requirements.
2. Provide split ductless system where advisable from an engineering standpoint, such as for spaces requiring extended cooling seasons or spaces remote from central AC. Provide for monitoring of space temperature.
3. Provide air conditioning with mini-split DX system for IT Data closets. Provide for monitoring of space temperature.
4. The University does not activate cooling plants until May 1<sup>st</sup>. Consider using direct expansion cooling for interior zones without windows that will have year-round load.
5. Provide CO<sub>2</sub> sensors in spaces to modulate outside air dampers on air handlers.
6. Provide economizer cycles, where feasible, to take advantage of free cooling.
7. Strainers shall be Y type, except for heat pump systems which shall be centrifugal type.
8. Hydronic heating systems are preferred over steam.
9. Provide manual air vents at high points of systems.
10. Provide operating and standby heat exchangers to prevent equipment failure.
11. A variable frequency drive is required for motor sizes of 5 hp and larger.
12. Keep fan coils from above ceilings, and avoid ceiling-mounted units, whenever possible. Oversize drain lines.
13. Cooling equipment shall have insulated drain pans with access doors.
14. Where mechanical systems are installed exterior to the facility, e.g. roof/pad mounted, and subject to water system freezing, the hydronic portions of the

systems shall include a glycol protection system including recovery and make-up abilities.