

Davis Library HVAC System Operation

Building Equipment-

A steam converter makes hot water that is circulated throughout the building by electric pumps. There are hot water radiators placed along exterior walls scattered throughout the building, typically under the windows. There are 9 air handling units serving all the spaces in the library. These air handlers bring in fresh air and are also used to heat/cool the spaces. Most rooms have individual air "boxes" (VAVs) that serve them. These VAVs control the amount of air serving a space and reheat the air to desired temperatures. An electric chiller is located in the Service building which serves the library and produces chilled water that is pumped through pipes underground and then through the building to the air handling units. The air handling units push cool air through ductwork to individual VAVs and the spaces they serve.

Cooling/Heating control-

Enabling heating to the building uses a slightly complicated algorithm to turn on the heating pumps. But basically, with outdoor temperatures that are less than 55 degrees, the heat will be enabled. If outdoor temps stay below 65 for a day or so, the heat will also be enabled until they rise above 65 degrees, at which point the heat shuts off.

The process of using air conditioning and chilled water is done manually, this is done in the spring. It's a guess as to the correct date this should occur. Typically, Facilities will look for sustained outdoor air temperatures that stay above 60 degrees daily before enabling the chiller. (**NOTE:** A 70- degree day in early April will most likely **not** have the cooling enabled for the season)

Once cooling is enabled for the season, the outdoor air temperatures will need to be above 62 before the chiller starts. At that point, cooling will be enabled to the building.

Most rooms have a thermostat for occupant comfort. The set points for an unoccupied room is 65 degrees during the heating season and 82 degrees during the cooling season. Occupied settings for common spaces are 70 degrees during the heating season and 75 degrees during the cooling season.

Occupant comfort control-

Occupants can adjust their heating and cooling set points by using a slide hidden under the cover on the right side of the thermostat. The scale is accurate (and admittedly hard to read) but gives the occupant a means to control their desired set point.

During the summer cooling season, users can adjust their set point from a low of 75 degrees F to 82 degrees F. For the winter heating season, the set point can be adjusted from a low of 65 Degrees F to 72 degrees F. Be mindful that sometimes even the minimum amount of air serving a space will keep it cooler than what the space actually needs depending on the heat load of the space.

Many rooms incorporate a motion sensor to determine whether the space is occupied or not. This will limit the air to the space as well as expand the temperature control set points to the unoccupied settings.

Be aware, there is a few minutes of delay as the system reacts to the motion sensor in a newly occupied space. Once activated, it may take your space some time to get the room to your desired temperature. There is a 30-minute delay once no motion is sensed in the room before the space goes to an unoccupied mode.



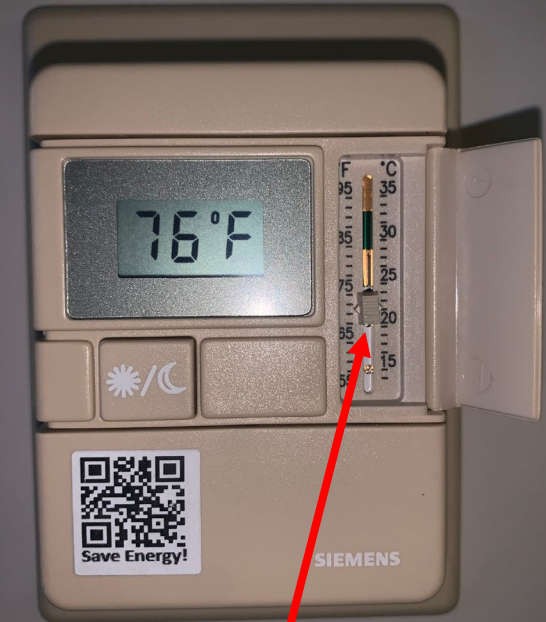
This thermostat is in a common space and has no slide adjustment. Set points are 75 for cooling and 70 for heating.



You can push this button in case you feel that your motion sensor is faulty. This will give you 2 hours of occupied time. This should only be used in very rare cases, and you should notify facilities that you are regularly pushing it so we can investigate.



The slide is hidden behind the cover. **Note:** there is a Celsius and Fahrenheit scale. This thermostat is set at 55 degrees F. It will put the set point when in cooling mode to 75 degrees, and if in heating mode, the set point will be 65 degrees. This slide may need to be adjusted to a more moderate temperature.



This thermostat is set at 70 degrees F. It will put the set point when in cooling mode to 75 degrees, and if in heating mode, the set point will be 70 degrees. This slide may work well any time of the year and may never need to be touched.