

Memorandum



■ Campus Energy Management

To: Campus Community

From: Matthew Brubaker

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Date: August 6, 2015

Regarding: SUNY Cortland's Space Temperature Policy

Facilities Operations and Services is pleased to provide an overview of the heating and cooling systems on campus as part of the changeover from heating to cooling and from cooling to heating. By sharing this information, our goal is to help the campus community understand the general operation of the heating and cooling systems on campus.

First, it is important to understand that there are a wide variety of heating and cooling system types installed within the various buildings on campus. The types of systems installed within each building have an effect on the overall comfort levels throughout the spaces within the building. Similarly, the types and location of building controls and control systems, such as thermostats, along with other variables such as the room exposure (north, south, east, west), the room internal heat sources (lights, people, computers, other equipment, etc.), are all factors that have an impact on overall space comfort and temperature. Additionally, certain facilities may have differing temperature setpoints, which are dictated more by the nature of the facility than by the temperature set point, such as a data center processing facilities and certain research equipment laboratories. It is for these reasons that there may be a temperature swing from the intended temperature set points indicated in SUNY Cortland's Space Temperature Set Points.

During the "shoulder" seasons in the spring (April 1st – May 31st) and fall (September 1st – November 1st), it is acceptable to open and close windows when you are in your work area, classroom, or residence hall for additional ventilation. However, it is the campus expectation that you close those windows when you leave the space for the evening or an extended period of time. Closing windows when you leave spaces will reduce heating loads and or cooling loads as outside temperatures change throughout the shoulder season and at times outside temperatures can change rapidly. Additionally, it is a campus expectation that your space be secure when you are away or leave at the end of your work day.

Overview of Building Temperature Control Parameters

To help the Campus Community understand the operation of the heating and cooling systems on campus, a summary of building heating and cooling systems, as well as their general control system, is presented below.

In general, we do not have a predetermined date when we convert buildings from heating to cooling or from cooling to heating; however, certain regulatory guidelines state that heat should be available to be turned on October 1st. In general, our aim is to have cooling systems on by June 1st. We begin converting buildings when the weather forecast indicates a prolonged period of cold weather or warm weather, depending on the season and mode of operation. The

most difficult times are periods or days when it might start out in the 30's or 40's in the morning and rise to 75 or 80 by afternoon. For energy conservation purposes, it is not advantageous to heat a building in the morning and then spend half the day trying to cool it down. Another challenge that could complicate the process is how the building is physically situated. In the winter, some classrooms and offices on one side of a building might be comfortable or too warm while those on the other side may be too cold because of less exposure to the sun or greater exposure to wind.

As stated above, the **heating** systems shall be prepared and ready to operate by October 1st of each year. The heating system will only be turned ON when several factors are met, namely: long term weather conditions (10 or more forecasted days with temperature during the day below 60 deg F and evening temperatures are expected to be below 40 deg F); system functions; building schedule; and other operational factors.

The **cooling** systems shall be prepared and ready to operate on or about May 1st of each year; however, may remain OFF until June 1st when ALL available cooling systems would be operational. The cooling system will only be turned ON when several factors are met, namely: long term weather conditions (10 or more forecasted days with temperature during the evening above 55 deg F and day time temperatures are expected to be above 75 deg F); system functions; building schedule; and other operational factors.

SUNY Cortland's Space Temperature Set Points:

- Temperature settings in all spaces during occupied periods will be:
 - heated to a target temperature of 68 degree Fahrenheit during the winter, and
 - cooled to a target temperature of 76 degree Fahrenheit in centrally air conditioned spaces during the summer.
- Space such as research facilities requiring critical temperature settings will be more tightly controlled.
- Space temperatures will be set by Facilities Operations and Services in the Building Management Control System. Occupants who control their own thermostats are required to adhere to these settings.
- We recognize that temperatures will fluctuate within the building around these set points and every effort will be made to stay within 2 degree Fahrenheit of this range.

Heating:

Older campus buildings utilize converted steam or hot water via radiator systems. Although effective and simple to operate, these older systems are difficult to zone and control in order to maintain comfortable space temperatures throughout all areas of the building. Many systems are zoned such that only one thermostat will control a single floor or an entire section of a building; some buildings have only one to two thermostats for the entire building. In these buildings, areas where the thermostat is located will tend to be comfortable while other areas of the building may become too hot or too cold.

Other campus buildings are heated with hot water via fin-tube radiation and incorporate central forced-air systems for both heating and cooling. Depending on the use and function of the building, these systems can be designed such that there is only one thermostat for a section or floor of a building, or there may be a thermostat for each individual space. The latter provides for adequate control through the majority of spaces of a building.

Cooling:

Older, smaller campus buildings and residence halls have no air conditioning or have very limited cooling that is provided by individual air conditioners, which have minimal temperature controls. Renovated buildings and many newer campus

buildings have central air conditioning provided from central forced-air type systems. Depending on the use and function of the building, these systems may be designed such that there is only one thermostat for a section or floor of a building or there may be a thermostat for each individual space. Again, the latter provides for adequate control through the majority of spaces of a building.

The Occupant Responsibilities:

- Supplemental space heaters and personal air conditioners shall only be issued in the case of long-term system malfunctions and as authorized and provided by Facilities Operations and Services.
- No other use of space heaters or personal air conditioners is permitted, and unauthorized equipment will be removed.
- If you feel your space is too hot or too cold, please contact your Building Administrator or feel free to contact Customer Service at x2100.

Summary:

The indicated space temperature setpoints are based on established standards for human comfort, productivity and safety. Building occupants will be made aware of the specific space temperature targets and feedback systems in place within their buildings. Occupants are encouraged to work with Building Administrators to achieve acceptable temperature, humidity and ventilation levels.

Actual space temperatures may vary across buildings due to the wide range of space types and building control systems on campus. Maximum comfort and efficiency will be achieved when occupants actively adapt to building conditions through modification of air flow via fans, sunlight exposure, and apparel choices, among other comfort factors.

SUNY Cortland will periodically evaluate the space temperature set points based on improvements to building systems, advances in occupant comfort and productivity research, and feedback from occupants. Based on this information, if you are unsure the space temperature conditions within your building can be reasonably maintained in accordance with this policy, or if you are having problems with "too hot /too cold" issues within your building, please do not hesitate to contact the Building Administrator or Facilities Operations and Services Customer Service Center at 607-753-2100. We look forward to working with building occupants to create a comfortable and energy-conserving environment.