

MechSE WELLness

T07 Humidity Control

Intent: Limit the growth of pathogens, reduce off gassing, and maintain thermal comfort via humidity control.

Humidity can influence the degradation of building materials and ability of the human body to release heat through evaporation. High humidity may promote growth of pathogens, which can lead to respiratory irritation and allergies in sensitive individuals. Low humidity can lead to dryness and irritation to airways, skin, eye, throat, and mucous membranes. Low relative humidity is also associated with longer survival of viruses (such as COVID19).

Impact: Maintaining humidity within bounds has multiple benefits to human health and wellness.

What are the requirements to earn this credit?

1. The HVAC systems have the ability of maintaining relative humidity levels between 30% and 60% at all times by adding or removing moisture from the air.
2. The modeled relative humidity levels in the space are between 30% and 60% for at least 98% of all normal business hours (8am to 5pm excluding holidays and weekends) of the year.

How is MechSE accomplishing these requirements?

LUMEB's HVAC systems utilize cooling coils, reheat coils, and total energy recovery wheels that work in harmony to control the relative humidity in the facility between 30% and 60% during normal occupied hours. Since each of us releases moisture into the air through latent heat transfer, LUMEB benefits in the wintertime from the 11 classrooms and hundreds of students in the facility all day. Thank you for staying hydrated and making a personal contribution to our building's relative humidity! Also appreciate that most students have summer internships and allow us to reduce relative humidity in the summer, reduce energy costs, and help us lower our carbon footprint. The design engineer provided a Trane Trace Mathematical Model of LUMEB that shows we satisfy the second requirement above.



UNIVERSITY OF
ILLINOIS
URBANA-CHAMPAIGN