Common Optimizer Simulation Scenarios

X25 Analytics is a useful tool for modeling hypothetical situations on your campus, allowing you to make data changes to your class schedule or available rooms without changing any 25Live data. This page outlines some common scenarios you might want to experiment with.

Taking a Building Offline

Scenario: You have several buildings which need to be remodeled, but doing so would make them unavailable for an entire term. You want to find the largest number of buildings you could close while still being able to place all your classes.

1. Make a separate room list for each building which could potentially be taken offline. Put the rest of your locations in a leftover "all other rooms" list.

2. Start a new Optimizer simulation and select all the event list(s) you need to place. Select all your room lists.

3. Choose the building(s) you want to take offline and deselect its list.

4. Run the simulation and examine the results. Did everything get placed?

5. Experiment with deselecting different combinations of buildings to see the effects.

Consolidating Classes into Fewer HVAC Zones

Scenario: You're looking to cut costs by turning off heating and cooling in rooms when they're not in use. If you create a schedule that uses fewer HVAC zones, you don't need to worry about air conditioning there.

1. Make a separate room list for each HVAC zone within a building.

2. Start a new Optimizer simulation and add at least two runs to it.

3. Select the lists for most of your HVAC zones in the first run, and put those you think you can deactivate in the second run.

4. When you run the simulation, the Optimizer will attempt to place all the classes in the room lists available to the first run, and will only attempt to place the classes that weren't placed in the first run in the HVAC zones you hope to deactivate.

5. Experiment with deactivating different zones to see the effects. Leave a zone unselected in all runs if you want to avoid placing any classes there at all.

Giving Priority Placement to Certain Departments

Scenario: Your institution has standard time blocks, but not all departments are adhering to them. To incentivize them to follow policy, you want to give priority placement to the departments whose classes meet at standard meeting times.

1. Make two event lists labeled "standard times" and "non-standard times."

2. Sort classes according to their department and add them to the appropriate lists.

3. Create a new Optimizer simulation and add two runs to it.

4. Select the "standard" event list in the first run and the "non-standard" list in the second run.

5. Run the simulation. The Optimizer will place the first run's classes before attempting to find rooms for any classes in the second run.

> ✅ **Tip: Placing Large Classes Before Small Classes**
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> This technique also works for placing large classes before small classes, or any other distinction of this type you want to make.
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> You can perform a multi-tiered simulation by making multiple lists and placing them on different runs: e.g. "large standard classes" → "large non-standard classes" → "small standard classes" → "small non-standard classes"

Reducing Location Capacity for Social Distancing

Scenario: Your institution has a policy that classrooms must operate at reduced capacity to allow students to stay safe during a global pandemic. You want to see how effective your schedule would be at various levels of capacity reduction.

1. Create a room list that includes all locations on campus.

2. Add an "alter capacity" transformation to this list. Set it to "decrease XX percent" where XX is your school's policy.

3. Run an Optimizer simulation with this reduced capacity to see the effects.

4. Go back to the list and change the value in the transformation.

5. Repeat steps 3-4 to experiment with different social distancing capacity reductions.

Applying New Standard Meeting Times

Scenario: Your institution wants to schedule classes into a new set of time blocks, either something entirely different from what you're using now or just to "clean up" the classes that meet at nonstandard times.

1. Select the Settings tab and start creating a new time mapping.

2. Select your most recent snapshot in the Source area on the right to ensure that all its meeting patterns are represented in the map.

3. Select days and times in the Destination area to map each meeting pattern to a new time block. This mapping can be used for any snapshots that share similar meeting patterns as the Source.

4. Select the Projects tab and create a new Optimizer event list.

5. Apply the "Meeting Pattern" transformation and select the mapping you defined earlier.

6. Run the Optimizer simulation with this list to see the placement effects.