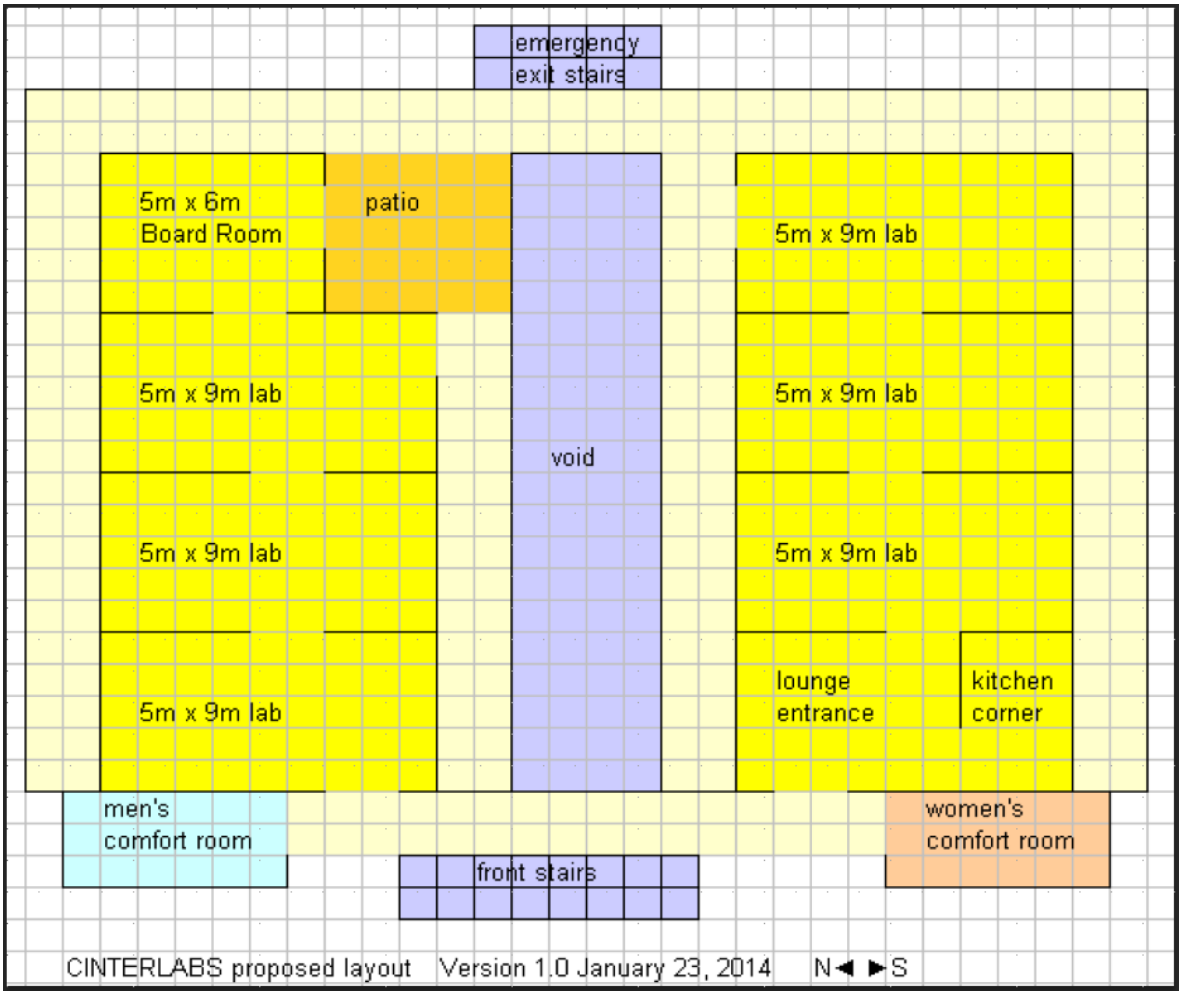
3D Virtual Cinterlabs



Cinterlabs is an interdisciplinary research lab that is planned to be built at the 4th floor of Physical Sciences Building. Above is the mock floor plan of the laboratories made by the university. You are to create an interactive 3D model of Cinterlabs using WebGL. The best works may be used as a prototype for further planning of Cinterlabs.

The possible features are written below. Everything written in **bold** is necessary to at least get at least 55% of the perfect 161 project score (8.25%). You get a perfect 161 project grade of 15% when you implement all of the features in **red** with the maximum **green** features.

Awesome pointing

MODELING	
Basic: Walls, Floor, Door, Window, Stairs	**10**
+ Board Room Objects: Desks, Tables, Shelves, etc. (at least 3)	10
+ Lab Objects: Computer, Servers, Microscopes, Circuits, etc. (at least 3)	10
+ Lounge Objects: Sofa, Furniture, Decorations, etc. (at least 3)	10
+ Comfort Room Objects: Toilet, Mirror, Sink, etc. (at least 3)	10
+ Patio and Kitchen Objects: Refrigerator, Oven, Water Dispenser (at least 3)	10
+ People: 3 Different Looking Persons	10

CAMERA	
X-axis, Y-axis, Z-axis keyboard rotation and Mouse Wheel for Zoom-in/out	**10**
First Person Camera Controls (Mouse for head orientation, Keyboard for movement)	20
First Person Camera Controls with collision	40

LIGHTING	
Lambert Light Reflection Model (D)	0
Phong Light Reflection Model (A + D + S)	**10**

ADVANCED LIGHTING	
+ Implement Fog (with keyboard switch)	15
+ Implement Shadows (with keyboard switch)	30

SHADING	
Flat Shading	**10**
Gouraud Shading (with correct normals)	15
Phong Shading (with correct normals)	20

TEXTURES	
Floor and Wall Textures	**5**
+ Board Room Textures	5
+ Lab Objects Textures	5
+ Lounge Objects Textures	5
+ Comfort Room Textures	5
+ Patio and Kitchen Objects Textures	5
+ People Textures	5

INTERACTIVITY	
+ Light Switch On/Off By Keyboard	5
+ Wall down/up Switch By Keyboard	5
+ Changeable Light Parameters	10
+ HUD with current room, M-V-P matrix parameters displayed and Light Parameters Displayed	10

ANIMATION	
+ Animate Lab Objects (requires lab objects)	10
+ Animate People Walking (requires people)	15
+ People Walking Collision	10

BLENDING	
+ Window pane correct transparency	10

Awesome Points	Equivalent Final Project Percentage
0-10	0%
11-23	1%
24-29	2%
30-35	3%
36-44	4%
45	8.25%
46-80	9%
81-115	10%
116-150	11%
151-185	12%
186-220	13%
221-255	14%
256-295	15%