WEEK 7

Pilapil, Nina Camille D.
10695066

Task 1. Provide a summary of the main concepts that went through about solar radiation.

Solar Radiation. Solar radiation is energy emitted by the sun. Solar radiation that reaches the Earth's surface is attenuated both in spectral distribution and in total irradiance.

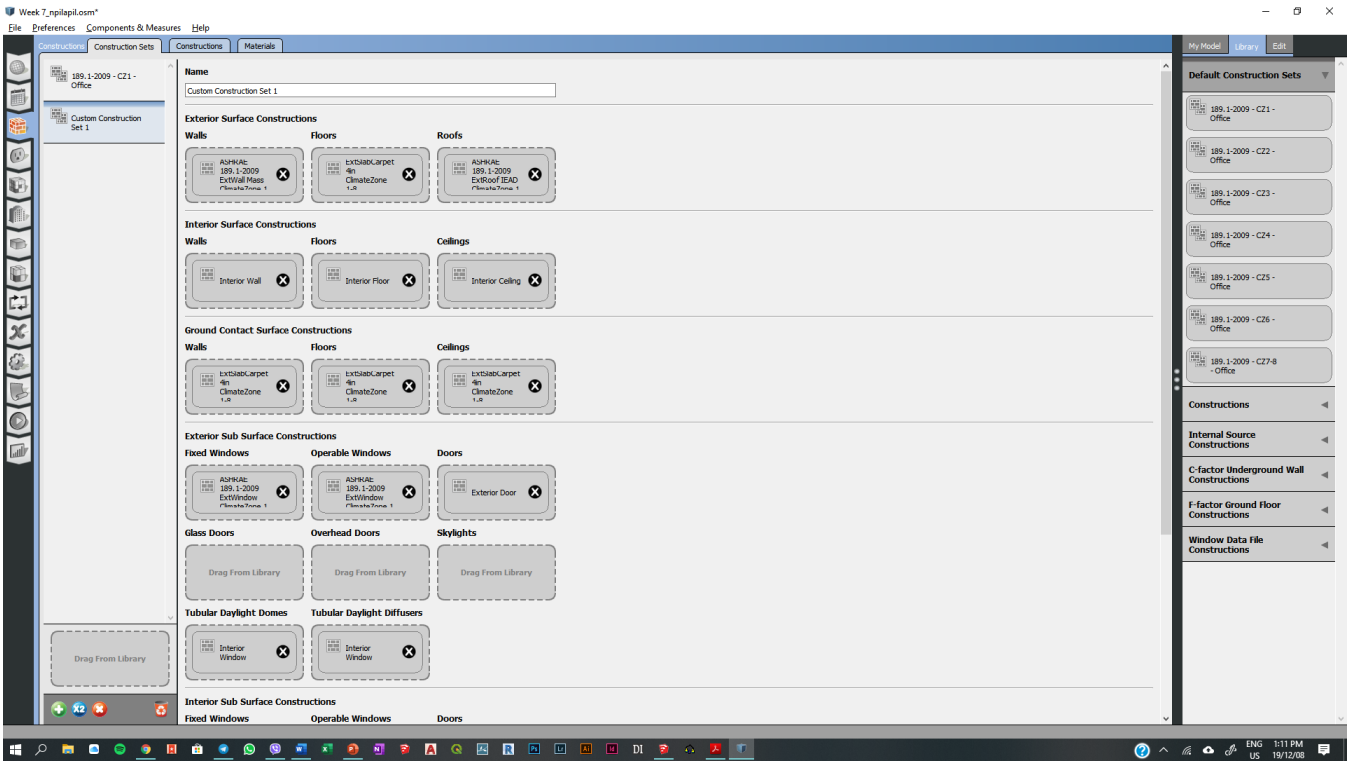
Diffuse & Direct Beam Solar Radiation. Diffuse and direct beam solar radiation are two types of solar radiation that reach the Earth's surface. Some of the sunlight that passes through the Earth's atmosphere reaches the surface of the Earth direct and undisturbed is called beam solar radiation. In diffuse solar radiation, sunlight passes through the Earth's atmosphere and is absorbed, scattered, or reflected.

Solar Radiation Absorption. The solar radiation absorption is made possible by atmospheric components, the ozone, water, and carbon dioxide. These atmospheric components absorb the incident radiation in specific wavelength bands. The stratospheric ozone absorbs all the ultraviolet component of the solar radiation wavelength less than 0.29.

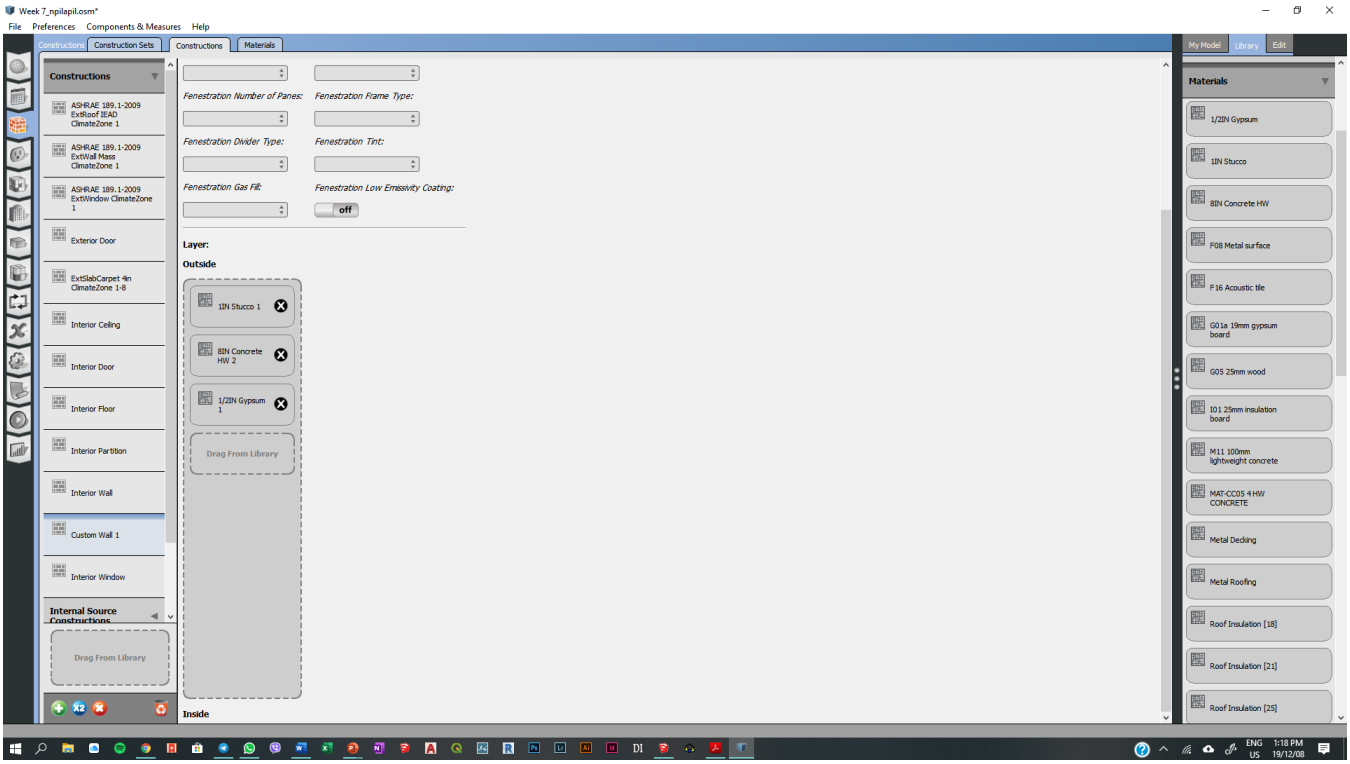
Solar Radiation Density. The extraterrestrial solar irradiance, the maximum yearly average solar radiation density, has a value of 1367 W/m^2.

Task 2. Create a PDF file with screenshots of all the steps in the second lesson on OpenStudio and explain briefly the reason behind each step.

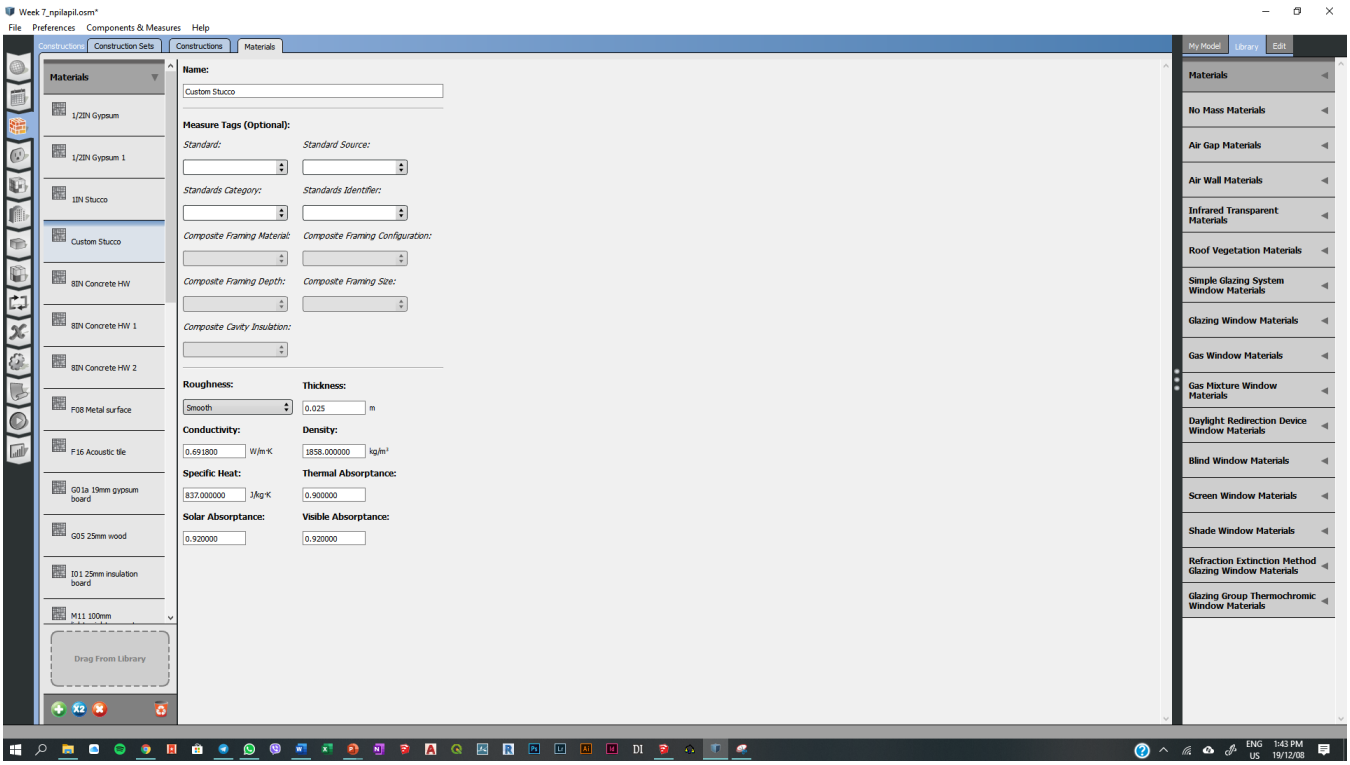
Creating/Modifying a Construction Set. Open the OpenStudio file and go to the Construction tab. Choose and duplicate a Default Construction Set. Rename and modify to create your own custom construction set.



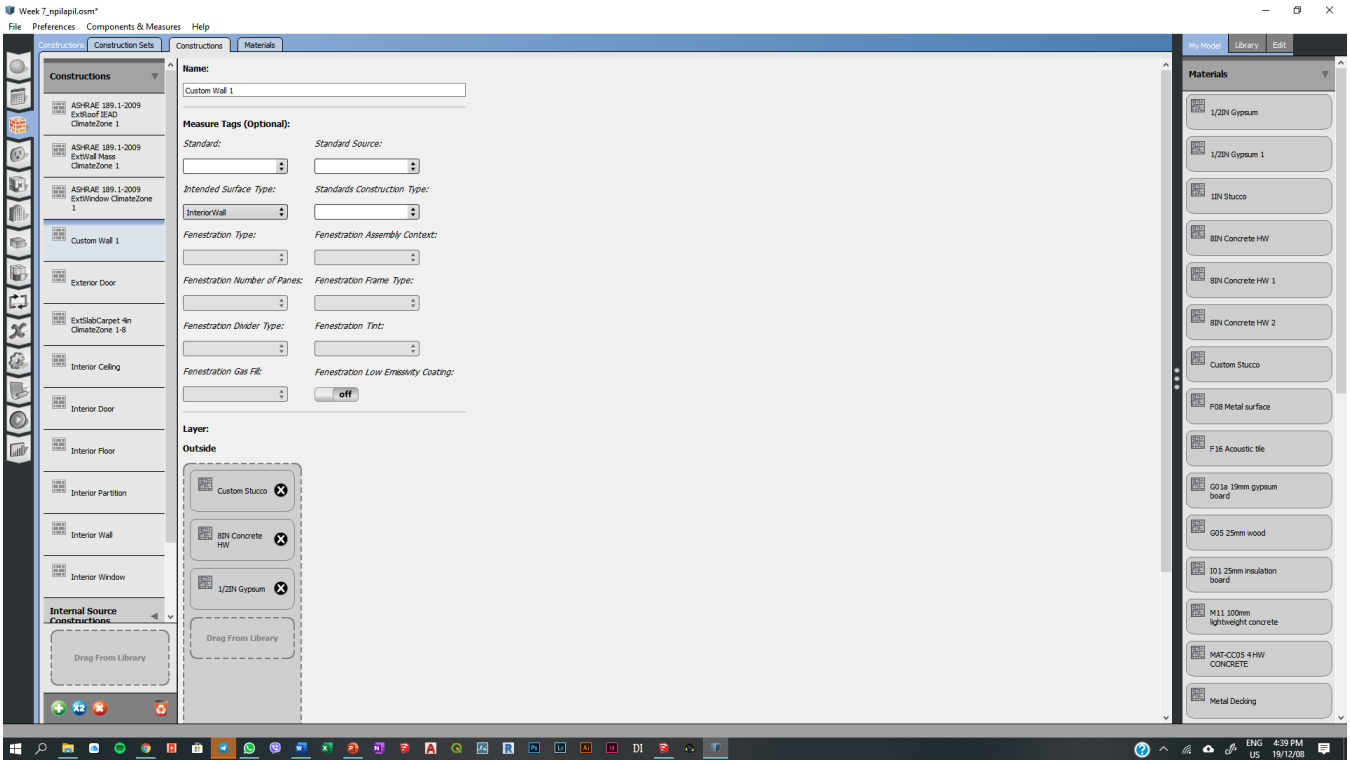
Creating/Modifying a Construction Material. Choose the Construction Set on the left panel where you would like to edit a material. Click on the Constructions tab. Similarly, duplicate an existing material, rename, and modify to create a custom construction material.



Creating/Modifying a Material. Click on the custom construction element you want to modify and switch to the Materials tab. Modify the properties of the material as necessary.



Configuring Construction Materials. After you've created or modified your construction material properties, you can go back to the Construction tab and arrange the layers of any construction element. Note that the order in which you drag Materials (whether default or custom) from the Library on the right to the Layer panel in the center of the program dictates the order from Outside to Inside (top to bottom).



Creating Schedules. Select the schedule tab on the left most panel. Here you can create your predicted schedule of use for your building. Under Run Period Profiles, you can add and create custom schedules by specifying dates, days, months, etc. For example, it is useful to create separate schedules for weekdays/weekends as well as Summer/Winter.