



GREENHOUSE PROJECT PART II

Each week you will receive a new handout with instructions towards the next part of your greenhouse design project. Your work will be due the following Tuesday at the **beginning** of class. There will be 4 assignments and the fifth week the project in total will be due. You will also be making a brief, 10 minute presentation, to your class on your greenhouse design during lab time of the fifth week. All information should be provided in complete sentences. Grammar and spelling count.

This will be approximately $\frac{1}{2}$ of your lab grade. The other half of the lab grade is based on participation.

WEEK 2 Assignment (DUE Tuesday November 5th): Greenhouse Construction and Environmental Control SHOW ALL CALCULATIONS! & SHOW UNITS of MEASUREMENT

1. Calculate the corrected heating requirement for this greenhouse.
 - a. Your recommendation should be based on crop selection and climate
 - b. Using the web or catalogs estimate the cost for unit heaters or a central heating system that will meet or exceed your corrected heat loss.

2. Calculate the cooling requirements of your greenhouse.
 - a. For the purposes of this exercise limit yourself to either completely passive cooling or fan-and-pad cooling.
 - b. If you do not cost out fan-and-pad cooling you must defend how passive cooling will meet the environmental needs of your chosen crop.
 - c. Remember fan-and-pad cooling systems will need the following calculations.
 - i. Uncorrected air removal rate (cfm)
 - ii. Corrected air removal rate
 - iii. Fan selection based on greenhouse house design and calculation
 - iv. Total square footage of cooling pads and height
 - v. Pump capacity
 - vi. Sump volume

3. Calculate a rough estimate of what it will cost to build your greenhouse. You can cost this out using web resources or use the general guidelines found on page 86 (add 25% for inflation) of your textbook. You may also use a combination of both resources, but be prepared to defend your estimate. At this point you need to include.
 - a. Cost of structure and cover
 - b. Labor
 - c. Heating system
 - d. Cooling system