

## ECOS Environmental Collaboration Syllabus

**Leaders: Jesse Sims.300**

**Objectives:**

*The objective for the ECOS Environmental Collaboration is work with a local company in their new business venture to create modular urban farms from used shipping containers. Specifically, we are going to assist them in determining the energy needs of the containers and designing and testing light capture systems in order to decrease the electricity demand of the container.*

**Semester Goals:**

- Work closely with a local engineer to design prototype light capture systems for the containers
- Do an energy analysis of the container to determine the feasibility of using light capture and to find areas where energy efficiency could be improved.

**Project History:**

The Environmental Collaboration team is currently working with a local business that operates multiple restaurants in the Columbus area. The business wants to retrofit old shipping containers into portable urban farms for their own use and to sell to other businesses. The plan is to outfit containers with hydroponic systems in order to grow crops for sale as well as for immediate use in their restaurants. The containers will be able to run on various fuel sources including used vegetable oil, solar panels, and traditional generators and electrical power.

This project involves working on various design challenges related to the containers and their operation. Additionally, we are planning our time to help the business owners meet their goal of having a container built in the next three months, and having containers ready for buyers in six months.

**Time commitment expected of project members:**

Meetings are Tuesdays in the Student Leadership Center in the Ohio Union (ECOS Room)

at 6 pm.

Weekend times (Time and Dates TBD as needed for project)

### **What's in it for you?**

- Learning Goals: Learn more about sustainability and the environment and what we as students and citizens can do to solve environmental problems our community
- Skills gained: engineering design, interpersonal relations, team work, brainstorming, possibly some hands-on work experience installing projects.

### **Project Specific Information**

We are currently focusing on designing a parabolic reflector or Fresnel lens light concentrator which will capture sunlight and direct it into fiber optic cables which will run into the container and shine on the plants.