

## GLG GreenCubator Educational Tract Co-Hort Curriculum Outline

### **Class #1: Orientation/Intro to Urban Agriculture**

- Orientation Presentation Delivery
- Program Overview
- Highlight Incentives
  - Entrance into Jobs/Skills Program
  - Additional Paid Opportunities (TBA)
  - Dept of Labor Apprenticeship Opportunities
- Q/A
- Activity: Each Participant will select a seed variety to start a “pet plant” that they will maintain and care for through the entirety of the class. The purpose is for the participants to learn the appreciation needed for cultivating life, and gain an understanding of how long term efforts yield long term results applicable in all aspects of life.

### **Class #2: Intro to Plant Biology**

- Facilitate with brief Power Point Presentation
  - Heavy with pictures and just a few bullet points to keep interests
- Overview of Plant Structure and Biology
  - Just the basics and emphasis on simple definition terms
- Live Demo Plants passed around and discussed
  - Purpose is to show how cell structure of plants is related to photosynthesis and nutrient cultivation
- Q/A
- Activity: Each participant will “clone” a basil plant and track the growth of new root structures and biomass of the plant. Purpose is to demonstrate how quickly plants heal themselves and the energy that goes into it at the atomic level. This is important in a professional setting, as horticulturalist use industry specific terms frequently. To be taken seriously in a professional setting, an individual must know basic terminology.

### **Class #3: Applied Soil Science**

- Soil Physical Properties
  - Different Types of Soils
  - Ideal Soils for Agriculture
- Soil Chemistry and Fertility
- Biology and Ecology Topic Discussion
- Q/A
- Activity: Each Participant will start seeds in four types of common soils: Clay, Loam, Sandy, Silty. We will track the growth and performance of each plant in each soil type.

### **Class #4: Basics of Hydroponics**

- Introduction to basic hydroponic growing mediums

- Substances intended to replace soil for plant growth
- Differences in growing techniques
  - Nutrient Filament Technique (NFT)
  - Flood & Drain (Ebb & Flow)
  - Deep Water Culture/Shallow Water Culture
- Nutrient Dosing – A “how to” overview on how plants receive and consume “food” in a hydroponic setting
- Basic Operating Procedures
  - Watering
  - Lighting
  - Cultivation
  - Air Circulation/Humidity control
  - Measuring pH and Nutrient levels
- Q/A
- Activity: Each Participant will assist in building a demonstration grade hydroponic system

#### **Class #5: Basics of Aquaponics**

- Difference between Hydroponics and Aquaponics
  - History of Aquaponics
  - Fish
  - Closed Loop Cycle
  - Pros/Cons
- Nitrosomonas Cycle – How beneficial bacteria colonies convert fish waste into high density organic plant food, and purifies water for optimal fish life cycle.
- Advantages of Aquaponics to traditional farming practices
- “Crash Course” Powerpoint Presentation
- Q/A
- Activity: Each Participant will assist in building a demonstration aquaponic system

#### **Class #6: Social and Environmental Issues related to Agriculture**

- History of United States Agriculture
  - Powerpoint Presentation Colonial America to Present Day
  - Brief and to the point, no opinions just historical facts
- Social and Modern Issues in Agriculture
  - Highlighting Social, Environmental, and Economic Topics
- Q/A
- Activity: Each Participant will participate in a Round Table Discussion on “solutions” to the issues presented in class.

#### **Class #7: Basic Horticultural Operations**

- Day to day activities needed for any growing operation
- Managing Fertility
  - Composting for Soil

- Nutrient Dosing/Management in Hydroponics/Aquaponics
    - How to raise/lower pH without harming plants, bacteria, and/or fish
    - How to correct Nitrogen, Potassium, Phosphorous deficiencies
- Pest and Disease Management
  - Organic vs. Synthetic (pros and cons of each)
- Q/A
- Activity: Each Participant will make a take home compost bin. The purpose is to have everyone begin practicing sustainability at home and in their communities. Dialogue will be targeted at everyone starting a small back yard garden in hopes that they carry the lessons learned back to their neighborhoods.

### **Class #8: Intro to Small Agricultural Business Planning**

- Food Safety and Handling (GAP)
  - Emphasize that in order to sell to the public an aspiring farmer must be compliant with USDA/Dept of Health rules and regulations.
    - For younger participants we will create a simple slide show on cleanliness and washing food at home to avoid illness
- Cultivation
  - Planning, Daily Care, Troubleshooting
- Harvesting
  - Simple Strategies to be safe and efficient
- Distribution/Marketing/Sales
  - A “how to” discussion on the farm to table sales model GLG has created in house.
- Business Planning
  - A “how to” develop a simple plan. Will be basic and use a Lemonade Stand as an example in relation to participating in a Farmers Market Stand
- Current Crop Prices to show participants how much monetary value a variety of popular vegetables are currently fetching in our region
- Q/A
- Activity: Each Participant will be presented with a Completion Certificate, and information on the Jobs/Skills classes. We will wrap up with a graduation party that we will provide food and refreshments sourced from local, sustainable providers. Invitations to stay in touch regardless of Jobs/Skills participation will be extended. Each participant will complete a survey and out take procedures as well.