



Ecology Action GROW BIOINTENSIVE® Mini-Farming 8 Month Internship Program Coursework

The following is the actual coursework students will complete throughout their internship. This information includes what lectures, experiments, discussions, and activities students will be participating in each day. It also includes the daily learning objectives, questions that encourage students to check their understanding at the end of each class day, and homework that must be completed before the following class day. This section is organized into Stage 1, Stage 2, and Stage 3 of the full curriculum.

	Stage 1	Stage 2	Stage 3
Theme	Intro	Live it!	Mastery
	What Basic 8 Principles	How Practice Doing	Why-Depth Embodied Integrating contextualizing

At the Completion of The 8 Month Internship, Ecology Action Interns Will Have Completed:

- ❖ 208 hours classroom instruction
- ❖ 1344 hours garden time including hands on experience of all major principles including seed saving, self-run experimentation, and observational activities
- ❖ Completed 1, personalized Diet, Farm, and Income Design
- ❖ Written 32 Journal Entries
- ❖ Engaged and written reflection on 30 garden Observational Activities
- ❖ Learned to evaluate soil in 4 different ways
- ❖ Planned and executed 1 small scale research project
- ❖ Taught 3, interactive classes
- ❖ Created 1 comprehensive, organized portfolio of all their internship work

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Stage 3 Mastery

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Start of Stage 1: Introduction to the practice

March 20 - April 27

[8 classes]

Class 1: Big Picture Sustainability

March 23

Foundational Concepts: **Growing Population, Shrinking arable land**
Sustainability = Cycle
Meat vs. Plant-based Diets

- 8:30 Group check-in
- 8:45 [Lecture] Introduction to structure of the course (RB)
- 9:30 [Lecture] Philosophy/ history (MD)
- 10:30 [Lecture]
 World situation (JJ) - *soil, water, nutrient SOM*
 EA goals (JJ)
- 12:00 [Discussion] How has and does the current world situation affect you? (RB)
- 12:30 Lunch
- 2:00 [Discussion] What is sustainability? (RB)
- 2:30 [Lecture] Presentation/ Video animation on cycle of food, waste and Carbon (RB)
- 3:30 [Activity] Follow up, What is sustainability? (RB/ JP) JJ
 Nutrient Cycling and Sustainability
 Where does biomass come from?
 Where do minerals come from?
 Where do they go?
- 4:30 [Activity] Why a vegan (without animals) system? (RB, JP)
- 5:00 Class dismissed

Reflect and Answer:

1. Why are you, and not GROW BIOINTENSIVE, the Key to Sustainability?
2. How is “double digging” yourself/letting go of and transforming challenging past experiences key to growing a good life, farm and community?

[Homework]

- Watch: “Down to Earth.” <https://www.youtube.com/watch?v=-hgtg0M71FE>
 (This is NOT a Grow Biointensive video, but will demonstrate many of the important concepts of soil and water we will deepen throughout the year. Don't expect to understand everything.)
- Read “The Living Soil”

- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Selected Readings from the Metamorphosis of Plants
- _____
- _____
- _____

Class 2: 8 GROW BIOINTENSIVE Principles March 28

Foundational Concept: **Soil 101**
Organic Matter

- 8:30 Group check-in/ Review of Monday
 9:00 [Discussion] Foundational Concepts (MD)
 10:15 [Activity] The Hidden World of The Soil (RB)
 11:30 [Lecture] 8 GROW BIOINTENSIVE principles (JP)
 12:30 Lunch
 2:00 [Discussion]/ [Lecture] Advantages of GROW BIOINTENSIVE (RL)
 3:15 [Lecture] The Mini-Farm as an Ecosystem (MD)
 4:45 [Activity] Introduction of “portfolios” to be kept through-out year (RB)
 5:00 Class dismissed

[Homework]

- Watch Self Teaching Series on Section 3, Part A & B.
(<http://www.johnjeavons.info/video.html>, click on the tab for “part 3”)
- [LEVEL 1]** Read “A Farmer's Mini-Handbook: GROW BIOINTENSIVE® Sustainable Mini-Farming,” “Principle 1: Deep Soil Preparation (pgs. 1 & 2)
- [LEVEL 2]** Read *The Sustainable Vegetable Garden*, “4. Preparing a Biointensive Bed: Double-Digging” (pgs. 27-32)
- [LEVEL 3]** Read *How to Grow More Vegetables*, “Deep Soil Creation and Maintenance” (pgs. 15-32)
- Provide written answers to “Reading for Understanding Questions”
- Read Goethe on observation: “Experiment as Mediator between Object and Subject” (5 pgs.)

- Read through observational activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 3: Double-Digging and Observation in the Garden

April 4

Foundational Concepts: **Microbes in the Soil--Needs and Interactions**
Observation, at the Heart of Understanding

The Practice: **Double-Digging**

- 8:30 Group Check-in/ Review of last week
- 9:00 [Discussion] What is a Soil Microbe? (JP)
- 10:00 [Lecture] Why we double dig (RL)
- 11:00 [Activity] How we double-dig: In garden, double-digging demonstration and practice (JJ)
- 12:30 Lunch
- 2:00 [Homework] Homework/ Portfolio check-in (RB)
- 2:30 [Lecture]/ [Activity] Introduction to Observation and Observation Exercise (MD)
- 5:00 Class dismissed

[Homework]

- Watch Self Teaching Series Part 5: A & B
- Watch Compost with John Jeavons (vimeo)
- [LEVEL 1]** Read "A Farmer's Mini-Handbook: GROW BIOINTENSIVE® Sustainable Mini-Farming," Principle 2: Composting
- [LEVEL 2]** Read *The Sustainable Vegetable Garden*, Chapter 5, "What to feed a Biointensive Bed: Compost"
- [LEVEL 3]** Read *How to Grow More Vegetables*, Chapter 3, "The Use of Compost and Soil Fertility"
- Provide written answers to "Reading for Understanding Questions"
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

<input type="checkbox"/>	_____
<input type="checkbox"/>	_____
<input type="checkbox"/>	_____

Class 4: Compost, Fertilization, & Sustainability Review

April 13

Foundational Concepts: Not all Carbon is Equal Organic Matter
The Practice: Compost Building Compost sifting Calculating compost applications Compost and Fertilizer Application

8:30 AM	Group Check-in
9:00 AM	[Activity]: Seeing Carbon (JP/ RB)
9:30 AM	(Review) Basics of sustainability- Where does Carbon come from? Where do minerals come from? Where do they go? (RB)
10:00 AM	[Activity]/ [Lecture] Introduction to Organic Matter and Compost (RB)
11:00 AM	[Activity] Organic Matter and Water Retention (sock demonstration) (RB)
12:30	Lunch
2:00	[Activity] Compost Building Workshop (JP)
3:30	[Activity]
	Break out groups: Compost sifting (JP)
	Calculating compost applications (RB)
	Applying compost and fertilizer (RL)
5:00	Class dismissed

[Homework]
<input type="checkbox"/> Watch Self Teaching Series, Part 2
<input type="checkbox"/> [LEVEL 1] Read "A Farmer's Mini-Handbook: Principle 3: Intensive planting
<input type="checkbox"/> [LEVEL 2] Read <i>The Sustainable Vegetable Garden</i> , "Chapter 6, Seedling"
<input type="checkbox"/> [LEVEL 3] Read <i>How to Grow More Vegetables</i> , "Chapter 5, Open-Pollinated Seeds, Seed Propagation, Close Spacing, and Seed Saving"
<input type="checkbox"/> Provide written answers to "Reading for Understanding Questions"
<input type="checkbox"/> Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

- Touch and explore several composts, what do you see? smell? how moist is it? Record notes on your experience to share in class.
- Read Art, Craft and Efficiency (for MD's class)
- _____
- _____
- _____

**Class 5: The Plant--Seed Propagation,
Intensive Planting/Transplanting, and Watering
April 18**

Foundational Concepts: **What a Seed Needs**
Micro-climate and Living Mulch
Water/ Soil/ Plant Interaction
Water Saving in GROW BIOINTENSIVE

The Practice: **Seed Propagation**
Intensive Planting/ Transplanting
Watering

8:30 Group Check-in

9:00 [Lecture] What a seed needs - AWOMB (RL)

10:30 [Lecture] Principle 3: Close Plant Spacing (MD)

12:00 [Lecture] Introduction/ Overview of Water Saving in GROW BIOINTENSIVE (JJ)

12:30 Lunch

2:00 [Activity] Simultaneous Workshops: Seed Propagation (RL)
 Intensive Planting/ Transplanting (RB)
 Watering (MD)

4:00 [Activity] Pricked out/ not pricked out → evaluate differences in root development (C)

5:00 Class Dismissed

Check Your Understanding:

1. What 2 major advantages does the microclimate produced create?
2. How much water can you save by raising seedlings in flats or nursery beds, and what can it be used for?
3. How much higher yield can result from the pricking-out technique of raising seedlings?

[Homework]

- [LEVEL 1]** Read “A Farmer's Mini-Handbook: GROW BIOINTENSIVE® Sustainable Mini-Farming,”
- [LEVEL 2]** Read *The Sustainable Vegetable Garden*,
- [LEVEL 3]** Read *How to Grow More Vegetables*,
- Provide written answers to “Reading for Understanding Questions”
- During Garden Meeting: Take a post hole digger and dig 24” down in random garden beds, evaluate moisture level
- Watch Vimeo; Diet Design from the Heart with John Jeavons
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 6: Planning for Feeding Ourselves and the Soil
April 25

Foundational Concepts: 60/30/10 Efficient Carbon capturers Efficient Calorie producers Our Dietary Needs
The Practice: Diet and Garden Design- Carbon Farming Calorie Farming

8:30 Group Check-In

9:00 Crop Personalities: Carbon and Calorie Crops Defined (JP)

10:00 [Activity]: Area Efficiency vs. Weight Efficiency (RB)

11:30 Introduction to the Master Charts (RB)

12:30 Lunch

2:00 [Activity] Garden Walk: Observing 60/30/10 (JP)

3:15 Intro to Diet and Garden Design - Diet Design by the Heart (in the garden) (RB)

5:00 Class dismissed

[Homework]

- Watch Vimeo: Limited Inputs Experiment with Samuel Nderitu
- [LEVEL 1]** Read “A Farmer's Mini-Handbook: GROW BIOINTENSIVE® Sustainable Mini-Farming,”
- [LEVEL 2]** Read *The Sustainable Vegetable Garden*,
- [LEVEL 3]** Read *How to Grow More Vegetables*,
- Provide written answers to “Reading for Understanding Questions”
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- This week’s study session: One Bed Unit Exercise
- _____
- _____
- _____

**Class 7: Data Collection, Experimental Design and
A Whole-Systems Perspective
April 25**

Foundational Concepts: Data Collection for GROW BIOINTENSIVE mini-farms
Developing an Investigative Mind
GROW BIOINTENSIVE as A Whole System

The Practice: Data Collection Practice
Experimental Design- Spacing Trial

8:30 AM	Group Check-In
9:00 AM	Principle 8: Whole Systems Perspective (MD)
11:00 AM	[Lecture]: Data collection (RL)
12:30 PM	Lunch
2:00 PM	Experimental Design Workshop
	Theory of variables and controls (RB) (1:30)
	Personal experiences of experimental management (MD) (0:30)
	Staff round-table about experience with on farm experimentation (0:15)
4:15 PM	Introduction to year long crop personality/ experiment/ data project
(RB)	
5:00	Class dismissed

Reflect and Answer:

How can I increase the health, vigor, productivity and sustainable soil fertility through a small amount of research annually? What should a test be performed three years in a

row?

[Homework]

- Choose crop for crop personality project, complete experimental design worksheet
- Study Material Covered
- Read pg. for Design Activity, Goal Setting
- _____
- _____
- _____

Class 8: Test Your Understanding, Level 1**April 27**

8:30 Group Check-in

9:00 [Activity]: Test Your Understanding, Level 1

10:30 [Lecture]: Review of expectations during garden observation months (RB)

11:00 [Lecture]: TBD (JJ)

1:00 Lunch

2:30 TBD

5:00 Class dismissed

Start of Stage 2: Live it!**April 28 - June 26**

- ❖ Structured Garden Observation Daily,
- ❖ Practical implementation of GROW BIOINTENSIVE® principles
 - ❖ Learning Journal
 - ❖ Hands on, guided Biointensive cooking
 - ❖ Visioning your long-term home project
- ❖ Prepare Presentation on What you Learned During This Time

Stage 3: Mastery

June 27 - November 14

General Overview

class #	Deepening Knowledge	Building Your Project
9	Mini-Farm as a System Reflections on Garden Intensive Learning	Project Vision Project Example: The Biointensive Method in Latin America Design 1: Goal Setting It all Begins with Diet *Homework Forms 2 and 3
10	Nutrition Calorie Farming	Intro to Diet Design Design 2: Base Mapping Form 3: Diet Crop Preliminary Worksheet Crash Course in Google Sheets
11	Soil Texture	Design 3: Site analysis Tools for Teaching (assign mini-classes) Time Management Form 6: Initial Diet Design
12	Organic Matter Cation Exchange Capacity	Design 4: The Design-Concept Bed-Crop-Months Form 6 Corrections *Homework - eat diet *Mini-Class 1
13	Life in the Soil (soil biota)	Design 5: Schematic Form 6 changes based on diet experience *Homework - eat diet again *Mini-Class 2
14	Compost Carbon Farming	Form 5: Compost Crop Preliminary Worksheet Form 7: Diet Design *Mini-Class 3
15	Compost (continued)	Form 4 *Mini-Class 4
16	Sustainability Nitrogen Human Waste Recycling	Form 5 and 7 corrections Soil Testing and Result/ Testing Your Soil With Plants *Mini-Class 5
17	Seed Saving: Introduction to genetics The Use of Open Pollinated Seeds	Practice of Seed Saving Form 4 Corrections Form 8

		Income 101 *Mini-Class 6
18	Deepening the Concept: Double digging Intensive planting	Form 9 (1) and 9 (2) *Mini-Class 7
19	Life in the Garden/ Pest Management	Form 9 (3) and 9 (4) Agricultural Leadership (1) Agricultural Business (1) *Mini-Class 8 *Homework - Garden Manager for a day
20	Steve Moore	Tools Weed Management *Homework Test Your Soil with Plants
21	Current Events Seminar	All Design Forms Due Agricultural Leadership (2) Agricultural Business (2)
22	Arid Farming/ Watering Techniques	Planning Crop Rotation
23	Greenhouses as Season Extension	Planning and Crop Rotation Continued Fundraising- Do you need to and How Compiling Data at the end of the Season
24	Crop personality/ Research Project presentations Herbs in a Grow Biointensive System	Agricultural Leadership (3) Agricultural Business (3)
25	Class debrief/ Group Exit Interview	Putting it All Together

Start of Stage 3: Mastery

Class 9: Gardening as a System and Building Your Project Vision June 27

<p>Deepening Your Knowledge: Garden As A System Reflections on Garden Intensive Learning</p>
<p>Building Your Project: Project Vision Design 1: Goal Setting It all Begins with Diet</p>

- 8:30 Group Check-In/ Welcome Back (RB)
- 9:00 [Activity] Teaching Practice: Mini-Presentations of Learning Moments (Interns) (RB)
- 10:30 [Discussion] Group discussion reflecting on the 2 month garden intensive, sharing from observational activities and learning journals. (RB)
- 11:30 [Lecture] Inter-Relationships of the Mini-Farm (MD)
- 12:30 Lunch
- 2:00 [Video] Watch a Project Example: The Biointensive Method in Latin America (Juan Manuel Martinez)
- 3:00 [Discussion] What is your project vision?/ Presentation of Project Plan and Expectations (JJ/ RB)
- 3:30 [Activity] Goal Setting Exercise (MD)
- 4:30 [Activity] It All Begins With Diet: (JP)
- 5:00 Class Dismissed

[Homework]

- Watch on Vimeo: Results of Grow Biointensive in Kenya with Samuel Nderitu and Peris Wanjiru
- Watch on Vimeo: Women Empowerment Programmes with Peris Nderitu
- Booklet #31, Form 2 (study session)
- Finalize Project and Personal Goals
- Nutrition Reading
- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 10: Diet and Nutrition
July 10

Deepening Your Knowledge: **Nutrition**
Calorie Farming

Building Your Project: **Intro to GROW BIOINTENSIVE Diet Design**
Design 2: Base Mapping

- 8:30 Group Check-in
- 9:00 [Discussion] Food Talk (RB)

- 9:30 [Lecture] Calorie farming/ Growing Your Own Diet (review and deepening) (JJ)
 10:45 [Lecture] Introduction to Nutrition (CH)
 11:15 [Discussion] Food and Culture (JP)
 12:30 Lunch
 2:00 [Lecture] Base Mapping (MD)
 3:00 [Activity] Base Mapping (MD)
 3:45 [Lecture] GROW BIOINTENSIVE Diet Design (JJ)
 4:45 [Activity] Booklet #31, Form 3: Diet Crop Preliminary Worksheet (All guide)
 (attendants MD, RB)
 5:15 Class dismissed

Check Your Understanding:

1. Up to how many times the calories can be grown per unit of area and time with calorie crops?
2. What is the criteria for a "Calorie crop"? What are 5 examples?
3. What is the maximum weight of food a woman can generally eat? The weight range of food she would prefer to eat? What is the maximum weight of food a man can generally eat? The weight range of food he would prefer to eat?

[Homework]

- Tuesday Evening Watering: [Meditation] How would you manage if you *needed* to grow all your own food tomorrow?
- Complete Base mapping Activity
- Read Lab Procedure for Soil Texture and Bulk Density and Particle Density Test Lab
- Read Boolet #31 pg. 10
- Watch Self Teaching Mini-Series; Part 8A and B; Choosing your crops
- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 11: Soil Texture and Structure and Skills for Teaching, Diet Continued July 11

Deepening Your Knowledge: **Soil Texture and Structure**

Building Your Project: **Tools for Teaching (assign mini-classes)**
Time Management
Diet Design Continued
Design 3: Site analysis

- 8:30 Group Check-In
 9:00 [Lecture] Introduction to Soils (RB)
 10:15 [Activity] Simultaneous Workshops
 Soil texture by feel (RB)
 Bulk Density and Particle Density lab (RB)
 11:45 [Discussion] Teaching strategies in home country (RB)
 12:30 Lunch
 2:00 [Lecture] Tools for Teaching (Guest lecturer)
 3:00 Design 3: Site Analysis (MD)
 4:30 Diet Design Continued/ Form 6: Initial Diet Design (JJ)
 5:00 Class Dismissed

Check Your Understanding:

1. What is the difference between texture and structure these?
2. What elements create Soil Structure?

[Homework]

- Practice Soil Texture by feel with a different soil, record your results
- Complete Particle Density and Bulk Density Lab Reflection
- Watch Organic Matter Cycle Video
- Complete Form 6: Initial Diet Design
- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 12: Organic Matter, Cation Exchange Capacity

July 18

Deepening Your Knowledge: Organic Matter Cation Exchange Capacity
Building Your Project: Bed-Crop-Months for Planning Design 4: Conceptual

8:30 Group Check-In

9:00 [Lecture] Advanced Organic Matter (RB)

10:00 [Activity] Organic Matter, TBD (RB)

11:00 [Activity] Magnet metaphor for understanding CEC (JP)

[Lecture] Cation Exchange Capacity; relationship to soil surface area and nutrient cycling (RB)

12:00 [Discussion] Factors that Influence CEC (RB)

12:30 Lunch

2:00 [Activity] Design 4: Conceptual (MD)

3:30 Mini-Class 1

4:00 Look at Form 6/ Make corrections as a group (JJ)

5:00 Class dismissed

Check Your Understanding:

1. How are Organic Matter, Humus, Organic Materials and Compost different
2. What is CEC and how does it affect your soil and the way plants grow?

[Homework]

- Reflection on OM activity
- Eat the diet you designed in Form 6
- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 13: Gardening as a System and Building Your Project Vision July 25

Deepening Your Knowledge: **Life in the Soil (Soil Biota)**

Building Your Project: **Getting Real-Diet Design Corrections Based on Experience
Design 5: Schematic**

- 8:30 Group Check-In
- 9:00 [Lecture] TBD (MD)
- 10:00 [Lecture] Advanced Soil Biota (JP)
- 11:15 [Activity] Micro and Macro-Fauna Lab (RB)
- 12:30 Lunch
- 2:00 [Lecture]/ [Activity] Design 5: Schematic (MD)
- 3:30 [Activity] Mini-Class 2
- 4:00 Form 6 changes based on diet experience (JJ), (JP, class-aide)
- 5:00 Class dismissed

[Homework]

- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week? Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Eat diet design based on changes made in class
- _____
- _____
- _____

Class 13.5
August 15
Guest Instructor: Steve Moore

Class 14: Understanding and Growing Compost September 5

Deepening Your Knowledge: Compost Carbon Farming
Building Your Project: Choosing Crops for Compost Experience + Knowledge: Finalizing Diet Design

8:30 Group Check-in

10:00 [Lecture] Carbon Farming (JP)

10:30 [Lecture] Compost! (JP)

12:30 Lunch

2:00 [Lecture]/ [Activity] Understanding Carbon:Nitrogen ratios in microorganisms, soil, and compost (RB)

3:15 [Activity] Mini-Class 3

3:45 [Activity] Work through Form 5: Compost Crop Preliminary Worksheet and Form 7: Diet Design (JJ)

Check Your Understanding:

1. Why do we need to grow food for the microbes and soil?
2. What is the criteria for a “Carbon crop”? What are 5 examples?

<p>[Homework]</p> <ul style="list-style-type: none"> <input type="checkbox"/> Watch on Vimeo: Steve Moore - Farm Marketing Approaches <input type="checkbox"/> Provide written answers to “Listen for Understanding” questions <input type="checkbox"/> Complete this week’s Observation Activity <input type="checkbox"/> Journal entry: What have I learned, what am I confused about, what do I want to learn next week? Journal entry: What have I learned, what am I confused about, what do I want to learn next week? <input type="checkbox"/> Bring to class nxt. week a sample of something with a high C:N ratio and something with a low C:N ratio, Observation Activity <input type="checkbox"/> [Homework] Bring to class nxt. week a sample of something with a high C:N ratio and something with a low C:N ratio, Observation Activity
--

5 Day Teacher Workshop
August 29 - September 2

Class 15: Compost and Mini-Farm Income September 13

Deepening Your Knowledge: **Compost Continued
Sustainability**

Building Your Project: **Mini-farm Income 101**

8:30 Group Check-In

9:00 [Activity] Show and Tell of high and low C:N ratio samples--review why C:N ratios are relevant to management choices (JP)

9:30 [Activity] Follow Calcium, Nitrogen, Carbon, and Iron through several different systems (RB)

11:00 [Lecture] Review: Relating Calorie and Carbon farming → 60/30/10 (JJ)

2:00 Mini-Class 4: 60/30/10 (Intern)

2:30 [Lecture] Mini-Farm Income 101 (MD)

4:00 [Discussion]/ [Activity] Farm Marketing Brainstorm

5:00 Class Dismissed

Check Your Understanding:

1. What is the basis upon which all life on the Earth depend?
2. Qualitatively, how do root-based, plant-based and manure-based composting differ? How are hot, cool, and cold composting different—in temperature, time required for cured compost and amount of cured compost produced?
3. In detail, what are the 5 ways to increase “compost power” per unit of area and time?
4. What are the 2 most important ways in which this can reduce the challenge noted by the UN-FAO that by 2025, just 10 years from now, up to 2/3 of the world population, ~5.5 billion people, may not have sufficient water to grow food and/or any food?

[Homework]

- Watch on Vimeo: John Jeavons - Fertilizers
- Provide written answers to “Listen for Understanding” questions Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week? Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Readings from Test Your Soil with Plants
- Create Farm Marketing Idea Plan, Prepare to Share
- _____

- _____
- _____

Class 16: Sustainability-What is it and how do we track our own? September 19

Deepening Your Knowledge: **Sustainability continued**
Nitrogen
Human Waste Recycling

Building Your Project: **Soil Testing and Results**
Testing Your Soil with Plants

- 8:30 Group Check-in
 9:00 [Lecture] Nitrogen (RB)
 10:00 [Lecture] Human Waste Recycling (JJ)
 11:15 [Discussion] Human Waste Recycling (JP)
 12:00 [Activity] Mini-Class 5
 12:30 Lunch
 2:00 [Activity] Soil Testing and Results (Guest lecturer John Beeby)
 3:15 [Lecture] Testing Your Soil with Plants (MD)
 4:30 [Discussion] Relating today's lectures to CEC, organic matter, and nutrient cycling (RB)
 5:00 Class dismissed

[Homework]

- Watch on Vimeo: Operational Seed Security Systems with Samuel Nderitu
- Study Session this week - Review Form 5 and Form 7, make corrections
- Watch Self-Teaching Mini-Series: Part 7: Saving Seeds
- Provide written answers to "Listen for Understanding" questions
- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Booklet 13 for Matt's seed class
- _____
- _____
- _____

Class 17: Seed Saving Intensive
Golden Rule Garden
September 26

Deepening Your Knowledge: **Seed Saving: An Introduction to Genetics**
The Use of Open Pollinated Seeds

Building Your Project: **Planning for Seed Saving and How To**

- 8:30 Group Check-in
 9:00 [Discussion] Seed Laws (RL)
 10:00 [Activity] Open-pollinated vs. Hybrid vs. GMO (RB)
 10:30 [Lecture] The Use of Open Pollinated Seeds, Seed Saving and Seed Banks (MD)
 12:00 [Activity] Mini-Class 6: What is Sustainability? (Intern)
 12:30 Lunch
 2:00 [Activity] How to collect and save seeds (E11B)
 3:30 [Activity] Planning for Seed Saving (MD)
 4:30 [Activity] Share Mini-Farm Income Ideas/ Correct Form 4

[Homework]

- Watch video on Vimeo: John Jeavons - Companion Planting, Compost and Cover Crops, Crop Rotations
- Correct Form 6, eat diet
- Study session this week- Form 8
- Provide written answers to “Listen for Understanding” questions
- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week? Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 18: Revisiting Core Concepts October 3

Deepening Your Knowledge: Double-Digging Intensive Planting
Building Your Project: Companion Planting and Crop Rotations Mini-Farm Design Continued

- 8:30 Group Check-In
- 9:00 [Lecture] Taking it deeper, Intensive planting (JJ)
[Lecture] Taking it deeper (no pun intended) Double-Digging/ Deep Soil Preparation (JJ)
- 11:30 [Activity] Evapo-Transpiration (MD)
- 12:30 Lunch
- 2:00 [Discussion]/ [Lecture] Companion Planting and Crop Rotations (JP)
- 3:00 [Activity] Mini-Class 7: Bed Crop Months
- 3:30 [Discussion] Mini-Farm Design Continued (RB)
- 4:15 [Activity] Introduce and work through Form 9 (1) and 9 (2)
- 5:00 Class dismissed

Check Your Understanding:

1. What are the 5 elements that double-digging make possible for improved plant health, growth and productivity?
2. What is the controlling part of the plant?
3. How percentage of the volume of a good soil can generally contain and hold water? In arid regions, how would triple digging assist your farming results? How does double-digging affect nutrient cycling?
4. In Agronomy's specialized topic of Microclimatology, what are its 3 advantages?
5. What 2 or more non-optimal things occur if you single-dig and use intensive spacing?

[Homework]

- Watch on Vimeo: Jake Blehm - Insect Life (w/ Steve Moore and John Jeavons)
- Provide written answers to "Listen for Understanding" questions
- Worksheet: Sunlight/ shade needs of plants → List: What plants in your region love shade? Which prefer sun? Are there any that like hot temperatures but not direct sun? Draw a diagram of how you might plant two of these plants to compliment each other.,
- Complete this week's Observation Activity: water data bed with different spacing and observe several days in a row

- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 19: Life on the Mini-Farm and Growing Your Personal Skill Set October 10

Deepening Your Knowledge: **Life in the Garden/ Pest Management**

Building Your Project: **Agricultural Leadership (1 of 3)**
Agricultural Business (1 of 3)

8:30 Group Check-In

9:00 [Lecture] Life in the Mini-Farm (MD)

10:15 [Lecture]/ [Discussion] Insect Life (JP)

11:15 [Lecture] Integrated Pest Management-- Walk through the garden + Q & A (JB)

12:30 Lunch

2:00 Agricultural Business

3:30 Agricultural Leadership

4:45 Mini-Class 8

5:15 Class dismissed

[Homework]

- Complete this week's Observation Activity
- Garden Manager for a Day
- Study Session - Complete Forms 9 (3) and 9 (4)
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- _____
- _____
- _____

Class 21: Big Perspective, Local Action--What are our challenges globally and What do we do about it?
October 17

Deepening Your Knowledge: **Current Event Seminar and Discussion**

Building Your Project: **Agricultural Leadership (2 of 3)**
Agricultural Business (2 of 3)

- 8:30 Group Check-In
9:00 Current Event Seminar/ Discussion - (RB)
12:30 Lunch
2:00 Agricultural Leadership
3:30 Agricultural Business
5:00 Class Dismissed, **All Design Forms Due!**

[Homework]

- Watch on Vimeo: [Low Natural Rainfall Farming with John Jeavons](#)
- Provide written answers to “Listen for Understanding” questions
- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week? Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Review or Look-up the first and last frost dates of your home growing region
- _____
- _____
- _____

Class 22: Mini-Farming for Arid Regions and Down to Earth Planning
Workshop
October 24

Deepening Your Knowledge: **Soil hydrology/ Advanced Watering**
Arid Farming/ Watering Techniques

Building Your Project: **Practice Mini-Farm Task Planning**
Practice Crop Rotation possibilities and guidelines

- 8:30 Group Check-In
 9:00 [Lecture] Advanced watering/ Arid Farming/ Watering Techniques (JJ)
 10:30 [Activity] Soil hydrology (RB)
 11:30 TBD
 12:30 Lunch
 2:00 [Activity] Turning a Diet Design into a Garden Plan (JP)
 5:00 Class Dismissed

Check Your Understanding:

1. What key soil element is increased by overhead watering and what key skill is developed?

[Homework]

- Complete this week's Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week? Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
- Complete Garden Plan Exercise
- _____
- _____
- _____

Class 23: Expanding Your Possibilities: Season extension, fundraising, real data and planning practice

October 31

Deepening Your Knowledge: **Greenhouse as Season Extension**
Herbs in a Grow Biointensive System

Building Your Project: **Planning and Crop Rotation Continued**
Fundraising- Do you need to and How
Compiling Data at the end of the Season

- 8:30 Group Check-In
 9:00 [Discussion] Planning and Crop Rotation Continued (JP)
 9:30 [Lecture] & [Activity] Compiling Data at the end of the Season (MD)
 10:45 [Lecture] Greenhouse and Season Extension (guest or watch Steve Moore's Video)
 12:30 Lunch
 2:00 [Lecture] Fundraising- Do you need to and How (JJ)

- 3:00 [Activity] “Elevator Speech” Game (RB)
 3:45 [Lecture] Herbs in a Grow Biointensive System (RL)
 4:45 Any questions about upcoming presentations, diet design and garden planning, etc.
 5:00 Class dismissed

[Homework]

- Complete this week’s Observation Activity
- Journal entry: What have I learned, what am I confused about, what do I want to learn next week?
Journal entry: What have I learned, what am I confused about, what do I want to learn next week?

Class 24: Reflections- what have you learned and new horizons to explore
November 8

Deepening Your Knowledge: **Crop personality/ Research Project presentations**

Building Your Project: **Agricultural Leadership (3 of 3)**
Agricultural Business (3 of 3)

- 8:30 Group Check-In
 9:00 Crop personality/ Research Project presentations (Interns, 20 min./ each)
 12:30 Lunch
 2:00 [Lecture] Agricultural Leadership (3 of 3) (JB)
 3:30 [Lecture] Agricultural Business (3 of 3) (JB)
 4:45 Q & A for review

[Homework]

- Study for Test Your Understanding Opportunity

Class 25: Gardening as a System and Building Your Project Vision
November 11

Deepening Your Knowledge: **Test Your Understanding Opportunity**
Class De-brief/ Group Exit Interview

Building Your Project: **Putting All the Pieces Together**

- 8:30 Group Check-In

- 9:00 Test Your Understanding Opportunity
11:00 Reflections/ Group Exit Interview
12:30 Lunch
2:00 John's Closing Remarks and Reflections

[Homework]

- Prepare for presentation
- One on one exit interview with your garden manager

Class 26: Final Presentations

November 14

Interns present all of the pieces of their home project:

Sustainabilibuddies and EA Community Invited to Join

- ❖ Site and Location Design
- ❖ Cohesive Diet/Compost/Income Design
- ❖ Marketing and Funding Plan
- ❖ Human Resources Plan