



CNR 499: Farmer Incubator

Course Syllabus and Program Memorandum

Course Coordinator: John Sheffy
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Instructors and Host Farmers: Chris Malek, David Peterson, Tony Miller, Kat Becker, Tony Schultz, Mark and Kristine Klish, Brent Wiersma, and Holly Petrillo.

Schedule: Friday 3-5 pm
CNR 271

Course Goal: This course prepares students from diverse academic backgrounds for field internships on local farms to pursue careers in sustainable agriculture. It showcases the local knowledge of a small group of exemplary farmers in Central Wisconsin that are organically growing and direct marketing local food. Through readings, discussions, short writing assignments, and field trips led by the farmers, students learn growing and marketing techniques, develop their personal farming plans, and design their eight month internship on a local farm.

Format: Pass/Fail, 1 credit. Students and farmers participate actively in class discussions. Each week students prepare short reflective papers (1-2 pages) on the previous week's topic to share with the class. Over the course of the semester, students create a work plan with their host farmer that outlines their internship and how it will develop their future as new farmers. Students also register for 1-3 internship credits during the summer semester (depending on if it fulfills a formal requirement). The field internship is supported financially by GEM, the host farmers, and AmeriCorps. Students document their experience in a final report due at the end of the fall semester.

Readings: Farmers and students share weekly readings in class to create a reference list.

Week 1: January 25th

Course Overview, Principles of Sustainable Agriculture, Community Development, and Populist Movements

- Logistics and funding
- Scales of production
- Setting goals
- Getting started

Activities: Discuss the course and internship goals and format. Tony Schultz, *Stoney Acres Farm*, discusses the politics of sustainable agriculture and the development of their community farm. Video: Intervale Farmer Incubator.

Week 2: February 1st

Planning, Record Keeping, and Economics

- Business plans
- Feasibility studies
- Pilot marketing
- Grants and partnerships
- CSA
- Farmers Markets
- Restaurants
- Farmgate/Farmstand
- Co-ops
- Supermarkets
- Online sales
- Journaling/Spreadsheets

Activities: Chris Malek, *Malek Farms*, presents his business strategy and on-farm research partnerships. Brent Wiersma, *Moondance Meadows*, describes his planning and record keeping processes.

Week 3: February 8th

Garden Locations and Farm Design

- Hours of sunlight
- Distance to kitchen, water, and animals
- Avoid sources of contamination
- Size, number, and shape of plots
- Raised beds, trenches, lasagna, container, and other styles
- 50/50 production area and cover crop, compost area
- Availability of labor
- Perennials vs. annuals
- Horizons (trees, shrubs, fruits, leaves, roots, and vines)
- Fencing

Working the Soil

- Deep soil preparation
- Soil components and texture
- Compost
- Manure
- Worm castings
- pH adjustment
- Mulch
- Cover crops
- Healthy soil for healthy crops

Activities: David Peterson, *Maplewood Gardens*, and Chris Malek talk about designing and building soils on their organic farms.

Week 4: February 15th

Appropriate Crop and Seed Selection

- Nutrient needs
- Water availability
- Pest resistance
- Temperature tolerance
- Intercropping ability
- Timing of required maintenance
- Indigenous varieties
- Effective use of multiple growing horizons
- Crop diversity

Integrated Pest and Weed Management

- Identification of weeds and pests
- Knowledge of weed and pest life cycles
- Timing and location of planting
- Physical barriers and removal
- Ergonomics of physical weeding
- Trap crops
- Cover crops
- Plant spacing
- Biopesticide application

Activities: David Peterson describes his diverse crop selections and rotations. Kat Becker and Tony Schultz, *Stoney Acres Farm*, describe their techniques for controlling weeds and pests on their organic farm. Holly Petrillo introduces bee keeping and other beneficial insect management strategies.

Week 5: February 22nd

Class cancelled for participation in Upper Midwest Organic Farming Conference!

Week 6: February 29th **Part-time Field Internships Begin!!

Food Harvesting, Processing, and Storage

- Importance of cooling
- Ergonomics
- Wash stations
- Canning
- Curing and drying
- Root cellars
- Diatomaceous earth (biopesticides)

Activities: Kristine Klish, *Stonecrop Organics*, and Brent Wiersma discuss processing techniques for CSA, retail, commercial kitchens, and restaurant sales.

Week 7: March 7th

Water for Every Farm

- Harvesting rainwater and runoff
- Drip irrigation
- Compost tea
- Swale irrigation
- Gray water use
- Shade crops
- Mulch
- Irrigation, plant stress, and disease

Incorporating More Trees and Animals into the Garden

- Maplewoods
- Living fences
- Protein fodder banks
- Fruit trees and grafting
- Berries
- Mushrooms
- Chicken or other animal tractors

Activities: Brent Wiersma and David Peterson discuss techniques of watering vegetables. Mark and Kristine Klish discuss animal rotations in their dairy, chicken, pig grazing system.

Week 8: March 14th

Nursery Management

- Direct seeding vs. transplants
- Potting soil mix
- Seedbed or container preparation
- Seed spacing
- Soil temperature, humidity, and light
- Hardening off
- Care of transplants
- Continuous seeding and harvest cycle

Season Extension Techniques

- Hoop houses
- Green houses
- Cold frames
- Heating with compost
- Heating with animals
- Heating with stones, thermal mass

Activities: Tony Miller, *Whitefeather Organics*, and Brent Wiersma discuss propagation techniques for a diversity of crops in their CSA farms.

Week 9: March 21st
No Class Spring Break

Week 10: March 28th
Field Trip to Maplewood Gardens to help collect and process maple syrup.

Week 11: April 4th
Field trip to Whitefeather Organics for hoop house nursery management.

Week 12: April 11th
Field trip to Stonecrop Organics Farm for pasture and livestock tour.

Week 13: April 18th
Field trip to Moondance Meadows for commercial kitchen and agroforestry designs.

Week 14: April 25th
Field trip to Malek Farms to cut and plant organic potatoes.

Week 15: May 2nd
Field trip to Stoney Acres Farm to transplant vegetables from greenhouse to garden beds.

Week 16: May 9th **Full-time Field Internships Begin!
Final papers due.