

## *Sustainable Food and Farming Program*

### **Bachelor of Science Degree Requirements**

The Bachelor of Sciences degree in Sustainable Food and Farming requires students to take courses in four categories:

- a. University General Education Requirements (33- 39 credit)
- b. Core Required Classes (26-31 credits)
- c. Agricultural Science and Practice Classes (24 credits)
- d. Professional Electives (18 credits)

Course selection should be made with an adviser as there is flexibility within the requirements depending on a student's career goals and previous experierenc.

#### **1. University General Education Requirements**

The General Education Program at the University of Massachusetts Amherst offers students a unique opportunity to develop critical thinking, communication, and learning skills that will benefit them for a lifetime.

- College Writing (CW) 3 credits
- General Mathematics (R1) 3 credits
- Analytical Reasoning (R2) 3 credits
- Biological Science (BS) 4 credits
- Physical Sciences (PS ) 4 credits
- Arts or Literature (AT or AL) 4 credits
- Historical Studies (HS) 4 credits
- Social & Behav. Sci. (SB) 4 credits
- Social World (AT, AL, I, SI) 4 credits
- U.S. Diversity (U) 3 credits (may be combined with another GenED)
- Global Diversity (G) 3 credits (may be combined with another GenED)

In addition two GenEd classes are taken within the major; Integrative Experience and Junior Writing, which are included among the core classes below.

## 2. Core Required Classes

These classes are required of most students earning a Bachelor of Sciences degree in the Stockbridge School of Agriculture. There is some flexibility depending on a student's career goals and previous course work.

### A. Botany

STOCKSCH 108 - Intro to Botany (4)

(BIOLOGY 151 or the equivalent may satisfy this requirement for transfer students)

### B. Soil Science

STOCKSCH 105 - Soil Science (4)

### C. Ecosystem Course - Choose one

BIOLOGY 287 - Ecology (3)

STOCKSCH 186 - Introduction to Permaculture (3)

STOCKSCH 378 - Agroecology (3)

STOCKSCH 510 – Management and Ecology of Plant Diseases (3)

### D. Mathematics Requirements

MATH 104 - Alg/Anal Geo/Trig (3)

or MATH 101 (2)      and      MATH 102 (2)

or advanced Math depending on Math Placement Test

Also a University approved Analytical Reasoning Course (R2)

### E. Analytical Reasoning – University approved Analytical Reasoning Class (R2) (3)

### F. Chemistry Requirement

STOCKSCH 117 - Agricultural Chemistry (3)

or CHEM 110 (4) – Fall (includes Saturday labs on alternate weeks)

or CHEM 111 (4) – Fall or Spring

### G. Junior Writing (GenEd)

STOCKSCH 382 - Writing for Sustainability (3)

or NATSCI 397A - CNS Junior Writing (3)

### H. Integrative Experience (GenEd)

STOCKSCH 379 - Ag Systems Thinking (3)

or NATSCI 494I - Global Issues in Applied Biology (3)

- i. **Take one course in food/land policy or one course in agricultural education**  
STOCKSCH 297 AL – Agricultural Leadership and Education (3)  
or STOCKSCH 342 - Pesticides, Public Policy and the Environment (3)  
or STOCKSCH 355 - Community Food Systems (3)  
or STOCKSCH 356 - Food Justice and Policy (3)  
or STOCKSCH 387 – Global Food Systems (3)  
or STOCKSCH 397R – Social Permaculture: Building Resilient Communities (3)  
or ...other courses with permission

### **3. Agricultural Science and Practice Classes**

These courses comprise the “heart” of the major and make the Stockbridge School of Agriculture unique in the nation. They consist of both traditional agricultural science courses which are offered at most major agricultural universities, as well as practical hands-on classes that make UMass the place to study sustainable agriculture!

**Students must take 24 credits in agricultural science and practice.** These include:

- 6 credits at 100 level or above
- 12 credits at 200 level or above
- 6 credits at the 500 level or above

100 Level Classes (no more than 6 credits may count toward the major from this list)

- STOCKSCH 100 – Botany for Gardeners (4)  
STOCKSCH 101 – Insects and Related Forms (2)  
STOCKSCH 111 – Intro Plant Pathology (2)  
STOCKSCH 118 - Intro to Sustainable Food and Farming (1)  
STOCKSCH 120 - Organic Gardening & Farming  
STOCKSCH 166 – Practical Beekeeping (3)  
STOCKSCH 170 – Pesticide Certification (1)  
STOCKSCH 182 – Principles of Pesticide Management (2)  
STOCKSCH 197 CP – Crop Planning for Diversified Vegetable Farms (1)  
STOCKSCH 197 F – Financial Mgt. for the Small Diversified Farm (1)  
STOCKSCH 197 FR – Food Waste/Recovery - Sustainable Food Systems (1)  
STOCKSCH 186 - Introduction to Permaculture (3)  
STOCKSCH 190 MC - Intro to Mushroom Culture (1)  
STOCKSCH 190 PW - Personal Wellness for Farmers and Gardeners (3)  
STOCKSCH 198 P – Permaculture Gardening at UMass (1)

200 Level Classes (at least 12 credits may count toward the major from this list)

- STOCKSCH 200 - Plant Propagation (3)
- STOCKSCH 211 - Pasture Management (3)
- STOCKSCH 235 - Pruning Fruit Crops (2)
- STOCKSCH 255 - Herbaceous Plants (3)
- STOCKSCH 258 - Urban Agriculture (3)
- STOCKSCH 260 - Growing Plants Indoors (3)
- STOCKSCH 265 - Sustainable Agriculture (3)
- STOCKSCH 266 – Managing the Small Farm Enterprise (3)
- STOCKSCH 280 - Herbs, Spices & Medicinal Plants (4)
- STOCKSCH 281- Topics in Herbalism I (2)
- STOCKSCH 282 - Topics in Herbalism II (2)
- STOCKSCH 286 - Permaculture Design & Practice (3)
- STOCKSCH 290 MP - Small Farm Husbandry I - Raising Meat Animals (3)
- STOCKSCH 290 PP - Small Farm Husbandry II - Raising Poultry and Pigs (3)
- STOCKSCH 290 W – Organic Weed Control (3)
- STOCKSCH 297 T – Alternative Medicine for Animals and Humans (1)
- STOCKSCH 300 - Deciduous Orchard Science (3)
- STOCKSCH 305 - Small Fruit Production (3)
- STOCKSCH 315 - Greenhouse Management (4)
- STOCKSCH 320 – Organic Vegetable Production (3)
- STOCKSCH 326 - Insect Biology (3)
- STOCKSCH 342 – Pesticides, Public Policy and the Environment (3)
- STOCKSCH 350 - Sustainable Soil and Crop Management (3)
- STOCKSCH 355 – Community Food Systems (3)
- STOCKSCH 356 – Food Justice and Policy (3)
- STOCKSCH 370 - Tropical Agriculture (3)
- STOCKSCH 375 - Soil and Water Conservation (3)
- STOCKSCH 378 - Agroecology (3)
- STOCKSCH 384 - Plant Physiology (3)
- STOCKSCH 387 – Global Food Systems (3)
- STOCKSCH 390 SF – Student Farm Management I: Planning for Production (3)
- STOCKSCH 397 AL – Agricultural Leadership & Community Education (3)
- STOCKSCH 397B – Behavior of Domestic Animals (3)
- STOCKSCH 397 GB – Grapevine Biology (3)
- STOCKSCH 397 VP – Sustainable Grape Production (3)
- STOCKSCH 485 - Sustainable Food & Farming Senior Capstone (3)
- STOCKSCH 490 SF – Student Farm Mgt. II: Harvest, Marketing & Finance (3)
- STOCKSCH 497 P – Pharmacognocny (3)

500 Level Classes (at least 6 credits may count toward the major from this list)

- STOCKSCH 505 – General Plant Pathology (4)
- STOCKSCH 510 – Management and Ecology of Plant Disease (3)
- STOCKSCH 515 – Microbiology of the Soil (3)
- STOCKSCH 520 – Physiology of Crop Yield (3)
- STOCKSCH 525 – Mycology (3)
- STOCKSCH 530 – Plant Nutrition (3)
- STOCKSCH 535 – Diagnostic Plant Pathology (3)
- STOCKSCH 545 – Postharvest Biology (4)
- STOCKSCH 550 – Plant Hormones and Applied Plant Physiology (3)
- STOCKSCH 580 – Soil Fertility (3)
- STOCKSCH 596 – Independent Study (3)
- STOCKSCH 597 A – Phyto/Bioremediation (3)

Additional Courses outside of Stockbridge that may count toward Ag Science & Practice

- ANIMLSCI 101 - Introduction to Animal Science (3)
- ANIMLSCI 103 - Introduction to Animal Management (3)
- ANIMLSCI 220 - Anatomy & Physiology of Domestic Animals (3)
- ANIMLSCI 260 - Animal Care and Welfare (3)
- ANIMLSCI 332 - Basic Animal Nutrition & Feeding (3)
- ANIMLSCI 390B - Animal Business Management (3)
- ANIMLSCI 421 - Fundamentals of Reproduction (3)
- ANTHRO 397 FD - Food and Culture (3)
- FOOD-SCI 101 - Food and Health (3)
- FOOD-SCI 120 - Food Preservation: Why and How (4 PS GenEd)
- FOOD-SCI 160 - The Nature of Food (3)
- ITALIAN 397K - Food, History and Culture of Italy (3)
- NUTRITN 572 - Community Nutrition (3)
- NUTRITN 597K - Culture, Nutrition and Health (3)
- SOCIOL 391 F - Food and Labor (3)
- NRC 212 - Forest Tree and Shrub Identification (3)
- NRC 225 - Forests and People (3)
- NRC 310 - Community Forestry (3)
- NRC 526 - Silviculture (3)

## Farm Animal Practice Courses that may count toward Agricultural Science and Practice

### **Fall Classes**

ANIMLSCI 232 – Belted Galloway Management I  
ANIMLSCI 234 - Poultry Management I  
ANIMLSCI 297DC – Dairy Calf Management  
ANIMLSCI 298S – Boer Goat Management I

### **Spring Classes**

ANIMLSCI 252 – Belted Galloway Management II  
ANIMLSCI 254 - Poultry Management II  
ANIMLSCI 297D – Dairy Calf Management  
ANIMLSCI 297E – Dorset Sheep Management II  
ANIMLSCI 297S – Boer Goat Management II

## **4. Professional Electives**

Students working closely with an academic adviser are encouraged to select professional elective courses from the major, other UMass majors, and the Five Colleges which help them move toward their own career goals. A total of 18 credits of approved courses are required with at least one course from each category below:

- Biophysical Systems
- Economic Systems
- Social Systems

Students are encouraged to take up to the maximum of 18 credits as Internships or Practica which may be counted toward Professional Electives. These may be farm internships, working with non-profits or businesses, or study abroad. Stockbridge is committed to helping students gain practical experience as part of their major area of study.

This category of requirements makes the Stockbridge School of Agriculture unique among competing institutions in the area of sustainable food and farming by allowing students to custom design a career path that fits their interests. It also ensures that all three aspects of sustainability (environmental, economic and equity) are included in the course of study.

If you have questions about the degree requirements, please contact one of the Sustainable Food and Farming Advisers:

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