

# Sustainable Agriculture (SAG)

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## Courses

### **SAG 142 Small Farm Business Planning and Management (3 Hours)**

This course provides a comprehensive overview of small farm business planning and management and will equip students with the skills and tools needed to operate a farm enterprise. Instruction will cover enterprise selection, goal setting, resource assessment, farm analysis, budgeting and bookkeeping (including tax forms), production costs, risk management, and other management principles. Students will gain knowledge of popular software tools used to track enterprise budgets and manage records. Students will conduct a whole farm analysis of a real-world farm business and develop production recommendations based on their findings.

### **SAG 165 Farm Producer Food Safety (3 Hours)**

Upon successful completion of this course, students should be able to explain the basic legal compliance issues and regulatory agencies regarding food safety and the post-harvest handling of local food products from the farm to market. This course focuses on identifying producer food safety strategies, obstacles, and solutions as well as understanding requirements of FDA's Food Safety Modernization Act (FSMA) and USDA GAP criteria. The course includes training modules and certification from the Producer Safety Alliance (PSA). It will provide students with practical methods of application involved with food safety risk assessment and planning on the campus farm as well as other area farms.

### **SAG 167 Local Food Production (3 Hours)**

Upon successful completion of this course, the student should be able to analyze and explain the basic cooking methods, recipe conversion and professional food preparation and handling of local food products. Additionally, the student should be able to safely operate common food service equipment used in commercial kitchens. It will provide students with practical methods of application involved with safe handling and production of post-harvest local food products. SAG 167 is the same course as HMGT 167; enroll in only one.

### **SAG 170 Value-Added Production (3 Hours)**

The value of farm products can be increased by canning, cleaning, cooling, cooking, combining, churning, culturing, grinding, extracting, drying, handcrafting, packaging, and distributing. Through sourcing raw agricultural products directly from the farm, students will learn how to transform quality ingredients into higher-value products through the application of time-tested techniques thus capturing more value from their own products. In addition to learning about what certifications are needed and what safety regulations should be followed if wanting to market each category of value-added products, students will complete Better Process Control training which provides certification for producing and marketing low acid and acidified foods. Students will also learn the processes and regulations that should be followed if wanting to market home kitchen-produced value-added products such as jams, jellies, preserves, baked goods, cheese, jerky, soaps, and herbal products. SAG 170 is the same course as HMGT 170; enroll in only one.

### **SAG 205 Agroecology in the Americas (3 Hours)**

Through exploring Agroecology in the Americas, students will gain understanding of diverse agroecological farming techniques and community efforts that can be used to strengthen local food systems. While domesticating numerous crops throughout the Americas thousands of years ago, smallholder farmers developed innovative farming practices that laid the foundations of several societies. Many of these practices continue throughout the Americas, anchoring local agricultural systems in local ecosystems, and, hence, increasing resiliency and sustainability. This course will provide insight into how smallholder agroecological techniques and network formation approaches can strengthen collective efforts increasing the resiliency and sustainability of local food systems.

### **SAG 225 On-Farm Plant Breeding (3 Hours)**

Through this exploration of on-farm plant breeding, students will gain the understanding necessary to begin breeding their own crop varieties on-farm. Farmers have maintained symbiotic relationships with plants to supply food to our communities and societies since we domesticated the first crops thousands of years ago. Farmers guiding crops through the process of evolution (i.e., plant breeding) is an essential component of resilient and sustainable agricultural systems. Looking through the historical, biological, social, and practical dimensions of plant breeding, this course will enable you to create crop varieties that are tailored to your community, your farm, and you.

### **SAG 245 Principles of Sustainable Market Farming (3 Hours)**

This course is designed to familiarize Market Farmers with sustainable methods of production of crops grown in the Market Farming industry. The course will prepare students in the basic principles of soils; pest and weed management; varieties of plants to grow; establishment, growth, harvesting and post-harvesting of crops; marketing methods; and business management. Students will become familiar with principles of sustainability and the importance of good record keeping. 3 hrs. lecture/wk.

### **SAG 250 Sustainable Food Systems\* (3 Hours)**

**Prerequisites :** SAG 245.

Students in this course will develop a critical perspective on existing and desirable food systems, from field to fork. The concept of a food system will be explored, and students will apply that concept to develop an overview of the existing social system from production, through distribution, to consumption of food. Issues including food system policy, systemic impacts on environment, health, and social equity will be discussed and evaluated. Through experiential learning, students will apply research and observation of food systems in their community as well as others pursuing goals of sustainability to inform their own career and social aspirations.

**SAG 255 Organic and Integrated Pest Management (3 Hours)**

This course introduces the principles and practices used by organic growers, as well as the system of Integrated Pest Management (IPM) used by both certified organic and sustainable farmers. Students will be able to identify important pests and develop skills to identify pests they do not already recognize. Reasons for using organic and sustainable management practices will be understood, and the methods of monitoring, determining action thresholds, and determining appropriate controls will be developed.

**SAG 260 Sustainable Soil Management (3 Hours)**

Establishment and maintenance of soil health is the starting point and goal of sustainable agriculture. This course introduces students to the management of healthy soil for the purpose of producing healthy food. Students will discover the physical, chemical, and biological properties of soil with an emphasis on soil ecosystems. Theory and practice in managing soil as a living system to be nurtured rather than a resource to be mined will be developed through lectures, discussion, and activities utilizing Open Petal Farm as a natural lab.

**SAG 272 Sustainable Agriculture Fall Practicum (2 Hours)**

Through practical experience complemented by lectures and discussions, students will gain exposure to a broad range of tasks facing the market farmer during the fall and early winter seasons. This includes production and marketing of summer crops, planning, and production of fall crops in high tunnels and open field, and marketing these fall crops. Topics include production planning, planting, integrated crop management, harvest and postharvest practices, marketing through various channels, tools and equipment, soil fertility management, and record keeping. Practicum activities will integrate with other courses in this market farming certificate program. Students will learn both conventional and organic production techniques. Entrepreneurship will be emphasized throughout. 7 hrs. practicum/wk.

**SAG 274 Sustainable Agriculture Spring Practicum (2 Hours)**

Through practical experience complemented by lectures and discussions, students will gain exposure to a broad range of tasks facing the market farmer during the winter and early spring seasons. This includes production and marketing of winter crops and planning and production of spring and summer crops in high tunnels and open field and marketing these spring crops. Topics include production planning, planting, integrated crop management, harvest and postharvest practices, marketing through various channels, tools and equipment, soil fertility management and record keeping. Practicum activities will integrate with other courses in this market farming certificate program. Students will learn both conventional and organic production techniques. Entrepreneurship will be emphasized throughout. 7 hrs practicum/wk.

**SAG 276 Sustainable Agriculture Summer Practicum (2 Hours)**

Through practical experience complemented by lectures and discussions, students will gain exposure to a broad range of tasks facing the market farmer during the summer season. This includes planning, production and marketing of spring and summer crops and planning and production of fall crops in high tunnels and open field. Topics include production planning, planting, integrated crop management, harvest and postharvest practices, marketing through various channels, tools and equipment, soil fertility management, and record keeping. Practicum activities will integrate with other courses in this market farming certificate program. Students will learn both conventional and organic production techniques. Entrepreneurship will be emphasized throughout. 7 hrs. practicum/wk.

**SAG 285 Sustainable Agriculture and Food Systems Internship\* (2 Hours)**

**Prerequisites :** SAG 245 with a grade of "C" or higher and (SAG 272 or SAG 274 or SAG 276 with a grade of "C" or higher) and department approval. Students deepen their practical skills and knowledge in a chosen area with an internship in an appropriate setting under instructional supervision. Internship projects are cooperative efforts between mentors in field settings and college staff and students. Internships give students the opportunity to participate in the real-world application of their academic studies. In addition, this synthesis of classroom study with practical experience provides students with skills and insights useful in furthering their education through transfer to a four-year institution or beyond, or selecting a career in a sector of sustainable agriculture and food systems. The student spends the equivalent of 10 hours per week for 14 weeks performing internship duties over the course of the semester or a total of 140 hours.