

Environmental Sustainable Agriculture Education (SAGe/ENVAG)

Also see Environmental Conservation, Geographic Information Systems, and Science

Program Description

The Environmental Sustainable Agriculture Education (SAGe/ENVAG) program provides a foundation of skills for students and community members interested in sustainable agroecological sciences, natural resource management and environmental conservation. This program is designed to provide students with core agriculture-related knowledge and production-related topics, as well as marketing, value added, and business courses. The emphasis is on providing small-acreage farming with a farm-to-table concept. SVC is working closely with Edmonds Community College (EdCC) regarding SAGe which has an urban food production emphasis. Students may substitute SVC courses with SAGe courses at EdCC, with Department Chair approval, if the EdCC course provides a better "fit" for a student's career plans. Washington's agricultural industry is changing. The industry is evolving to include cutting edge careers in a variety of technical fields. Jobs related to agriculture in this state can be found on farms, in factories, on fishing boats, in laboratories, and on the sales room floor. Rich soils, diverse climates and large-scale irrigation make Washington one of the most productive growing regions in the world. The state's deep-water ports and its proximity to important Asian markets also provide natural advantages for agricultural trade. Washington State reports a \$35 billion food and agriculture industry employing over 160,000 people and contributing to 11% percent of the state's economy. Northwest regional data indicates there are 181 agriculture-related employers in Skagit County employing an average of 3,767 people with an average annual income of \$32,000 or approximately \$16 per hour. The Skagit Valley has experienced growth in the area of "agricultural reinvention" with the expansion of small entrepreneurial, specialty farming enterprises, as well as small farms implementing organic farming practices, and alternative livestock production techniques (e.g., grass-fed). In the northwest corner of the state, agriculture plays a significant role in supporting the economic vitality of our region.

Entry into the Program

Please apply to the Admissions Office. Students are generally admitted Fall or Winter quarters. For further information, contact the Department Chair or the Admissions Office.

Associate in Applied Science Transfer (AAS-T) Degree

An Associate in Applied Science Transfer (AAS-T) degree is awarded upon completion of the Environmental Sustainable Agriculture Education degree with a minimum of 90 credits of specified technical and related education coursework above 100-level with both an overall 2.0 grade point average and a 2.0 grade point average in the technical major. Entry into a baccalaureate program at a four-year school will generally require a higher GPA for admission.

SUGGESTED SCHEDULE

ASSOCIATE OF APPLIED SCIENCE (AAS-T) ENVIRONMENTAL SUSTAINABLE AGRICULTURE EDUCATION

Includes required AAS-T courses. Student schedule may vary based on entry point, credit load, and prerequisites. Consult with department chair, advisor or SVC counselor for scheduling options.

First Year

| Fall | Cr | Winter | Cr | Spring | Cr |
|---------------|-----------|---------------|-----------|--------------|-----------|
| ENVAG 101 | 5 | ENVAG 106 | 5 | ENVAG 124 | 5 |
| ENVAG 103 | 4 | ENVAG 127 | 3 | or ENVAG 140 | 5 |
| ENVAG 170 | 5 | ENVAG 171 | 5 | ENVAG 131 | 3 |
| | | ENVAG 198 | 2 | or CAHM 101 | 5 |
| PE 200 | 2 | or ‡ENVAG 199 | | ^BMT 120 | 5 |
| Total | 14 | Total | 15 | Total | 13 |
| Summer | Cr | | | | |
| ENVAG 198 | 2 | | | | |
| or ‡ENVC 199 | | | | | |
| Total | 2 | | | | |

Second Year

| Fall | Cr | Winter | Cr | Spring | Cr |
|--------------|-----------|---------------|------------|--------------|-----------|
| CMST& 210 | 5 | CHEM& 121 | 5 | ENVAG 197 | 2-4 |
| or CMST& 220 | | †MATH& 107 | 5 | ENVC Elec. | 5 |
| †ENGL& 101 | 5 | or †MATH& 146 | | ENGL 104 | 5 |
| ENVC Elec. | 5 | *LC/GE | 5-10 | ^BMT 120 | 5 |
| Total | 15 | Total | 15+ | Total | 17 |

* Learning Community (5-10 credits) or 5 credits of General Education (social sciences, natural sciences or humanities) plus Integrative Experience (IE). Must be outside of technical area, approved by Department Chair or advisor. Please see INDEX regarding Learning Communities.

† Students who do not receive an appropriate test score will require additional coursework to develop necessary skills for entry into class.

‡ ENVC 199 may be taken at any time during the two-year program with Department Chair or advisor approval.

@ Electives must be chosen from within the sciences, GIS or computer technology.

^ or BMT 121, or BMT 122, or MIT 149 or MIT 270.

Program Certificates

SMALL FARM AGRICULTURE CROP PRACTICES (28 CREDITS)

This certificate concentrates on sustainable agriculture practices for small farm operations as well as core agroecological principles and fundamental ecological farm principles.

Required courses: ENVAG 101, 103, 106, 124 (or 128), 127, 170, and 197 (or 198 or 199).

SMALL FARM AGRICULTURE BUSINESS PRACTICES (29 CREDITS)

This certificate concentrates on business practices for sustainable small farm operations as well as core agroecological principles and fundamental ecological farm principles.

Required courses: ENVAG 101, 103, 106, 131 (or CAHM 101), 171, 197 (or 198 or 199), and BMT 120 (or BMT 121, or 122 or MIT 149 or 270).

SMALL FARM AND AGRICULTURE SYSTEMS (42 CREDITS)

This certificate concentrates on sustainable agriculture practices and business practices for sustainable small farm operations as well as core agroecological principles and fundamental ecological farm principles.

Required courses: ENVAG 101, 103, 106, 124 (or 128), 127, 131 (or CAHM 101), 170, 171, 197 (or 198 or 199), and BMT 120 (or BMT 121, or 122 or MIT 149 or 270).

SUSTAINABLE AGRICULTURE AND FOOD SYSTEMS (36 CREDITS)

This certificate provides a foundation of skills for students and community members interested in sustainable agrisocial sciences, natural resource management and environmental conservation. The program is designed to provide students with fundamental agriculture-related knowledge and skills and/or a foundation to pursue other certificates and two-year degrees in a variety of fields including environmental conservation, natural resources, agriculture, greenhouse production, or food systems.

Required Courses: CAHM 101, ENVC 165, ENVAG 106, 121, 122, 170, 171, and 199 (3 credits)

Micro-Certificates

These certificates focus on a specific skill within this program. A certificate is awarded to students who complete the following with a 2.0 grade point average or above:

SMALL FARM AGRICULTURE CROP PRODUCTION (15 CREDITS)

This micro-certificate is designed to offer students specific skills and knowledge in agroecological food systems with an emphasis on sustainable agriculture practices for food production in small farm operations. This involves people and resources to produce, process, and distribute sustainable food products. Regulations regarding handling and processing are covered. Required courses: ENVAG 124 (or 128), 127, 170 and 197 (or 198 or 199).

SMALL FARM AGRICULTURE BUSINESS PRACTICES (15 CREDITS)

This micro-certificate is designed to offer students specific skills and knowledge in agroecological food systems with an emphasis on business practices for sustainable small farm operations. This involves people and resources to produce, process, and distribute sustainable food products. Regulations regarding handling and processing are covered.

Required courses: ENVAG 131 (or CAHM 101), 171, 197 (or 198 or 199), and BMT 120 (or BMT 121, or 122 or MIT 149 or 270).

Course Descriptions

ENVAG 101 Agroecology: An Ecological Approach to Agriculture (5)

Survey of sustainable agriculture particularly in the Pacific Northwest. Explore crop biodiversity, weed and pest management, livestock production and organic crop propagation. Includes water use and pollution, natural resource conservation and energy use on sustainable farms.

ENVAG 103 Horticulture Plant Science (4)

Covers the science behind plant growth of both herbaceous and woody vegetation: from seed selection, germination requirements, plant growth pattern, nutrient demands, flowering, to fruiting.

ENVAG 106 Soil Science (5)

Introduction to basic concepts of soil science, plant nutrition and water management. Topics include soil formation and development, soil structure and composition, physical properties of soils, mineralogy, soil chemistry, nutrient holding capacity, fertilizers, temperature, aeration, and plant, soil and water relationships. Native soils, commercial mixes, soil testing, soil amendments and application rates are covered. Special emphasis is given to soil origins in the Pacific Northwest.

ENVAG 121 Greenhouse-Nursery Operations (5)

Introduction to greenhouse management and production. Hands-on approach to exploring greenhouse/nursery operations and basic plant production requirements. Includes a study of greenhouse structures and the management of the greenhouse environment including greenhouse light and lighting, air movement/ventilation and temperature control along with irrigation, fertilizers, pest and disease management and other production issues to create an optimum growing environment for the production of ornamental and vegetable plants. Environmental factors affecting plant growth, manipulating the greenhouse environment, soil and water testing, and nursery operations including production planning and determining cost and profit are emphasized. Laboratory and field trips to commercial operations will be included.

ENVAG 122 Plant Propagation (5)

Propagation of plants from vegetative and reproductive tissues and organs. Plant propagation techniques

are used to multiply selected plants and preserve their essential genetic characteristics and is essential to the success of production agriculture, ornamental horticulture, and native species. Covers the concepts of sexual and asexual plant propagation, seed collecting, and the principles and techniques of propagation by seed and cuttings along with techniques for laboratory, greenhouse, and orchard propagation. Includes handling, preparation, treatment and rooting of cuttings; grafting tools and preparation of grafts; and a field trip to examine how micropropagation in tissue culture is accomplished.

ENVAG 124 Mixed Orchard Production (5)

Covers year-round orchard biology and management from orchard design to planting, grafting, pruning, and thinning. Includes disease and herbivory management for pome fruit, stone fruit, and berry fruit productions.

ENVAG 127 Greenhouse Production Systems (3)

Covers greenhouse management from planning, greenhouse type selection, crop selection, and harvest. Understand laws pertaining to zoning, pesticide use, and postharvest handling.

ENVAG 128 Specialty Row Crop Production (5)

Covers how to schedule, manage, and produce specialty crops in the Pacific Northwest throughout the year; includes crop soil fertility and pollination needs.

ENVAG 131 Post-Harvest to Local Market Operations (3)

Covers postharvest and marketing of sustainable agriculture products for direct, food hub, and traditional markets. Understand the legal requirements for handling, sanitation, packaging, and storage of products including postharvest processing.

ENVAG 170 Sustainable Small Farming and Ranching (5)

Learn the practical aspects of sustainable small acreage production systems for a wide variety of enterprises. Covers how to evaluate personal and family goals, evaluate land and personal resources, develop a farm plan, and research marketing, regulations, and community resources. Course consists of classroom lecture, guest speakers and farm tours. Topics covered: Crop rotations, cover cropping, integrated pest and weed management, grazing and pasture management, waste management plans, smart water use, soil building and conservation techniques.

ENVAG 171 Agricultural Entrepreneurship & Business Planning (5)

Learn about the aspects of small business planning and management and how to develop a business plan for use in an agricultural enterprise. Course covers the management tools necessary to develop a sustainable business: developing a business plan, market research strategies, employee management, financial records, and requirements for a business license,

insurance, and zoning issues. Students will develop a detailed agricultural business plan for their small farm enterprise.

ENVAG 197 Research in Sustainable Agriculture (1-5)

Develop and execute a small agricultural research project in sustainable agriculture in cooperation with a faculty or external research advisor. Conduct primary and secondary research to develop the proposed project. Research will be concluded with a written report outlining results and conclusions.

ENVAG 198 Practicum in Sustainable Agriculture (1-5)

Practicum provides students with an opportunity to integrate knowledge acquired through past coursework. This experience will clarify and broaden a student's career goals, and assist students in discovering, developing, and refining their necessary competencies and skills for their proposed career path.

ENVAG 199 Internship in Sustainable Agriculture (1-15)

Supervised work experience in the field. The internship will augment the classroom learning by applying skills and knowledge learned in an agriculture-related enterprise. Students will be mentored by business professionals who are experienced practitioners in the field, and practice the work skills required to be successful in their chosen field. In partnership with the instructor and the mentor, learning objectives will be determined by the student's internship/work experience placement. Includes a weekly seminar. Prerequisite: Instructor permission required.