



Program Planning Guide

Sustainable Agriculture, Associate in Applied Science Degree, A15410

Program Length: 5 Semesters

Career Pathway Options: Associate in Applied Science Degree in Sustainable Agriculture Technology

Program Site/s: Chatham Main Campus, Day Program

Suggested Course Schedule:

		Hours				Notes:
Class		Lab	Clinical	Credit		
1st Semester						
ACA	Student Success Course				1	
AGR 111	Basic Farm Maintenance	1	3	0	2	
AGR 139	Intro to Sustainable Agriculture	3	0	0	3	
AGR 170	Soil Science	2	2	0	3	
ANS 110	Animal Science	3	0	0	3	
CIS 111	Basic PC Literacy	1	2	0	2	
	Social/Behavioral Science Elective	3	0	0	3	
					17	

2nd Semester						
AGR 121	Biological Pest Management	3	0	0	3	
AGR 160	Plant Science	2	2	0	3	
ANS 111	Sustainable Livestock Management	2	2	0	3	
ENG 111	Writing and Inquiry	3	0	0	3	
	Humanities/Fine Arts Elective	3	0	0	3	
					15	

3rd Semester						
WBL 111	Work-based Learning I	0	10	0	1	

4th Semester						
AGR 214	Agricultural Marketing	3	0	0	3	
AGR 220	Agriculture Mechanization	2	2	0	3	
AGR 267	Permaculture	2	2	0	3	
HOR 168	Plant Propagation	2	2	0	3	
	Take one course:	2	2	0	3	
AGR 265	Organic Crop Production: Spring					
AGR 266	Organic Crop Production: Fall					
	Communications - Take one course:	3	0	0	3	
ENG 112	Writing/Research in the Disc					
ENG 114	Professional Research & Reporting					
COM 110	Introduction to Communication					
					18	

5th Semester						
AGR 212	Farm Business Management	3	0	0	3	
AGR 268	Adv. Organic Crop Production	2	6	0	4	
BUS 280	REAL Small Business	4	0	0	4	
	Mathematics - Take one course:	2	2	0	3	
MAT 110	Math Measurement & Literacy					
MAT 143	Quantitative Literacy					
	Elective - Take one course:				3	
HOR 130	Greenhouse Design	3	0	0		
AGR 221	Farm Structures	2	2	0		
					17	

Total Semester Hours Credit Required for Graduation: 68

Sustainable Agriculture

Course Descriptions

~ 2 ~

Program Specific Courses:

AGR 111 Basic Farm Maintenance 1-3-2

This course covers fundamentals of maintenance and repair of farm facilities and equipment. Topics include safe use of hand tools and farm machinery, carpentry, concrete, painting, wiring, welding, plumbing, and calculating costs and materials needed. Upon completion, students should be able to answer theoretical questions on topics covered and assist with maintenance and repair of farm facilities and equipment.

AGR 121 Biological Pest Mgmt 3-0-3

This course will emphasize the building and maintaining of healthy soil, plant, and insect biological cycles as the key to pest and disease management. Course content includes study of major pests and diseases, including structure, life cycle, and favored hosts; and biological and least toxic methods of chemical control. Upon completion, students should be able to identify and recommend methods of prevention and control of selected insects and diseases.

AGR 139 Intro to Sustainable Agriculture 3-0-3

This course will provide students with a clear perspective on the principles, history, and practices of sustainable agriculture in our local and global communities. Students will be introduced to the economic, environmental, and social impacts of agriculture. Upon completion, students should be able to identify the principles of sustainable agriculture as they relate to basic production practices.

AGR 160 Plant Science 2-2-3

This course introduces the basic principles of botany that pertain to agricultural production. Emphasis is placed on the anatomy and physiology of flowering plants. Upon completion, students should be able to identify and explain plant systems.

AGR 170 Soil Science 2-2-3

This course covers the basic principles of soil management and fertilization. Topics include liming, fertilization, soil management, biological properties of soil (including beneficial microorganisms), sustainable land care practices and the impact on soils, and plant nutrients. Upon completion, students should be able to analyze, evaluate, and properly amend soils/media according to sustainable practices.

AGR 212 Farm Business Management 3-0-3

This course introduces budgeting, farm analysis, production costs, business organizations, and general management principles. Topics include enterprise budgets, partial budgets, whole farm budgets, income analysis, and business organizations. Upon completion, students should be able to prepare and analyze a farm budget.

AGR 214 Agricultural Marketing 3-0-3

This course covers basic marketing principles for agricultural products. Topics include buying, selling, processing, standardizing, grading, storing, and marketing of agricultural commodities. Upon completion, students should be able to construct a marketing plan for an agricultural product.

AGR 220 Agricultural Mechanization 2-2-3

This course is a study of farm machinery and agricultural equipment. Topics include selection and operation of tractors, materials handling equipment, tillage and harvesting equipment, and irrigation systems. Upon completion, students should be able to identify equipment parts and explain the basic principles of machinery operation and management.

AGR 221 Farm Structures 2-2-3

This course covers basic agricultural buildings and structures. Topics include building materials, cost estimating, basic blueprint reading, and job planning. Upon completion, students should be able to complete a cost estimate for constructing an agricultural structure.

AGR 265 Organic Crop Production: Spring 2-2-3

This course includes a study of spring organic crop production practices, including vegetables, cut flowers, and culinary and medicinal herbs. Topics include variety selection, production methods, and record keeping procedures for certification. Upon completion, students should be able to demonstrate a knowledge of organic crop production appropriate for the spring season.

Sustainable Agriculture

Course Descriptions

~ 3 ~

AGR 266 Organic Crop Production: Fall 2-2-3

The course includes a study of fall organic crop production practices, including vegetables, cut flowers, and culinary and medicinal herbs. Topics include variety selection, production methods, and record keeping procedures for certification. Upon completion, students should be able to demonstrate a knowledge of organic crop production appropriate for the fall season.

AGR 267 Permaculture 2-2-3

This course introduces the design of sustainable human habitats as part of a sustainable system, with emphasis placed on living systems of the temperate region. Topics include fundamentals of permaculture system design for farms, including gardens, fields, water, animals, buildings, economics, and society. Upon completion, students should be able to design a functional holistic farm system.

AGR 268 Advanced Organic Crop Production 2-6-4

Prerequisites: Take One: AGR 265 or AGR 266

This course provides students with structured practical experience in managing the complexities of organic crop production. Emphasis is placed on crop management skills and decision making associated with production-related operations such as cover crop management, irrigation, and post-harvest physiology. Upon completion, students should be able to create and implement a crop management plan and demonstrate competency in the selection and efficient use of equipment.

ANS 110 Animal Science 3-0-3

This course introduces the livestock industry. Topics include nutrition, reproduction, production practices, diseases, meat processing, sustainable livestock production, and marketing. Upon completion, students should be able to demonstrate a basic understanding of livestock production practices and the economic impact of livestock locally, regionally, state-wide, and internationally.

ANS 111 Sustainable Livestock Management 2-2-3

This course covers the integration of livestock as part of a sustainable farming system with emphasis on small-scale production for niche markets and pasture. The course will cover appropriate breed selection, nutrition and living requirements for livestock such as goats, hogs, sheep, poultry, and bees. Upon completion, student should recognize appropriate breeds for their farm needs and demonstrate knowledge of small-scale livestock production.

BUS 280 REAL Small Business 4-0-4

This course introduces hands-on techniques and procedures for planning and opening a small business, including the personal qualities needed for entrepreneurship. Emphasis is placed on market research, finance, time management, and day-to-day activities of owning/operating a small business. Upon completion, students should be able to write and implement a viable business plan and seek funding.

HOR 130 Greenhouse Design 3-0-3

This course covers greenhouse facilities planning and equipment selection. Topics include types of greenhouses, location factors, materials, glazing selection, calculation of heating/cooling requirements, lighting, benches, and energy conservation. Upon completion, students should be able to demonstrate knowledge of material selection, facilities planning, equipment need selection, and appropriate calculations.

HOR 168 Plant Propagation 2-2-3

This course is a study of sexual and asexual reproduction of plants. Emphasis is placed on seed propagation, grafting, stem and root propagation, micro-propagation, and other propagation techniques. Upon completion, students should be able to successfully propagate ornamental plants.

Sustainable Agriculture

Course Descriptions

~ 4 ~

General Education/Other Requirements:

ACA 111 College Student Success 1-0-1

This course introduces the college's physical, academic, and social environment and promotes the personal development essential for success. Topics include campus facilities and resources; policies, procedures, and programs; study skills; and life management issues such as health, self-esteem, motivation, goal-setting, diversity, and communication. Upon completion, students should be able to function effectively within the college environment to meet their educational objectives.

ACA 115 Success and Study Skills 0-2-1

This course provides an orientation to the campus resources and academic skills necessary to achieve educational objectives. Emphasis is placed on an exploration of facilities and services, study skills, library skills, self-assessment, wellness, goal-setting, and critical thinking. Upon completion, students should be able to manage their learning experiences to successfully meet educational goals.

ACA 122 College Transfer Success 0-2-1

This course provides information and strategies necessary to develop clear academic and professional goals beyond the community college experience. Topics include the CAA, college policies and culture, career exploration, gathering information on senior institutions, strategic planning, critical thinking, and communications skills for a successful academic transition. Upon completion, students should be able to develop an academic plan to transition successfully to senior institutions. This course has been approved for transfer under the CAA and ICAA as a premajor and/or elective course requirement.

CIS 111 Basic PC Literacy 1-2-2

This course provides an overview of computer concepts. Emphasis is placed on the use of personal computers and software applications for personal and fundamental workplace use. Upon completion, students should be able to demonstrate basic personal computer skills.

COM 110 Introduction to Communication 3-0-3

This course provides an overview of the basic concepts of communication and the skills necessary to communicate in various contexts. Emphasis is placed on communication theories and techniques used in interpersonal group, public, intercultural, and mass communication situations. Upon completion, students should be able to explain and illustrate the forms and purposes of human communication in a variety of contexts. This course has been approved for transfer under the CAA and ICAA as a general education course in Communications.

ENG 111 Writing and Inquiry 3-0-3

Prerequisites: DRE 098 or ENG 002

Local Prerequisites: Take one: 1) ENG 011; 2) ENG 002; 3) DRE 098; 4) ENG 090; 5) ENG 095

This course is designed to develop the ability to produce clear writing in a variety of genres and formats using a recursive process. Emphasis includes inquiry, analysis, effective use of rhetorical strategies, thesis development, audience awareness, and revision. Upon completion, students should be able to produce unified, coherent, well-developed essays using standard written English. This course has been approved for transfer under the CAA and ICAA as a universal general education transfer component (UGETC) course in English Composition.

ENG 112 Writing/Research in the Disciplines 3-0-3

Prerequisite: ENG 111

This course, the second in a series of two, introduces research techniques, documentation styles, and writing strategies. Emphasis is placed on analyzing information and ideas and incorporating research findings into documented writing and research projects. Upon completion, students should be able to evaluate and synthesize information from primary and secondary sources using documentation appropriate to various disciplines. This course has been approved for transfer under the CAA and ICAA as a universal general education transfer component (UGETC) course in English Composition.

ENG 113 Literature-Based Research 3-0-3

Prerequisite: ENG 111

This course, the second in a series of two, expands the concepts developed in ENG 111 by focusing on writing that involves literature-based research and documentation. Emphasis is placed on critical reading and thinking and the analysis and

Sustainable Agriculture

Course Descriptions

~ 5 ~

interpretation of prose, poetry, and drama: plot, characterization, theme, cultural context, etc. Upon completion, students should be able to construct mechanically-sound, documented essays and research papers that analyze and respond to literary works. Students should be able to respond to literature orally in class discussions and in small group and individual presentations. This course has been approved for transfer under the CAA and ICAA as a general education course in English Composition

ENG 114 Professional Research and Reporting 3-0-3

Prerequisite: ENG 111

This course, the second in a series of two, is designed to teach professional communication skills. Emphasis is placed on research, listening, critical reading and thinking, analysis, interpretation, and design used in oral and written presentations. Upon completion, students should be able to work individually and collaboratively to produce well-designed business and professional written and oral presentations. This course has been approved for transfer under the CAA and ICAA as a general education course in English Composition.

MAT 110 Math Measurement & Literacy 2-2-3

Prerequisite: Take one set: Set 1: DMA 010, DMA 020, and DMA 030 Set 2: DMA 025; Set 3: MAT 003

Local RISE corequisites: Take one group: 1) MAT 010; 2) MAT 003; 3) DAM 010, DMA 020, DMA 030; 4) MAT 060; 5) DMA 025

This course provides an activity-based approach that develops measurement skills and mathematical literacy using technology to solve problems for non-math intensive programs. Topics include unit conversions and estimation within a variety of measurement systems; ratio and proportion; basic geometric concepts; financial literacy; and statistics including measures of central tendency, dispersion, and charting of data. Upon completion, students should be able to demonstrate the use of mathematics and technology to solve practical problems, and to analyze and communicate results.

MAT 143 Quantitative Literacy 2-2-3

Prerequisite: Take one set: 1) DMA 010, DMA 020, DMA 030, DMA 040, DMA 050, and DRE-098; 2) DMA 025, DMA 040, DMA 050 and DRE 098; 3) DMA 025, DMA 045 and DRE 098; 4) DMA 010, DMA 020, DMA 030, DMA 045 and DRE 098; 5) MAT-003 & ENG-002; 6) MAT-003 & ENG-111; 7) MAT-003 & DRE-098; 8) DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, & ENG-002; 9) DMA-010, DMA-020, DMA-030, DMA-045, & ENG-002; 10) DMA-025, DMA-040, DMA-050, & ENG-002; 11) DMA-025, DMA-045, & ENG-002

Local RISE corequisites: Take one group: 1) MAT-043; 2) MAT-003; 3) DMA-010, DMA-020, DMA-030, DMA-040, DMA-050, DRE-098; 4) DMA-025, DMA-040, DMA-050, DRE-098;

5) DMA-025, DMA-045, DRE-098

This course is designed to engage students in complex and realistic situations involving the mathematical phenomena of quantity, change and relationship, and uncertainty through project- and activity-based assessment. Emphasis is placed on authentic contexts which will introduce the concepts of numeracy, proportional reasoning, dimensional analysis, rates of growth, personal finance, consumer statistics, practical probabilities, and mathematics for citizenship. Upon completion, students should be able to utilize quantitative information as consumers and to make personal, professional, and civic decisions by decoding, interpreting, using, and communicating quantitative information found in modern media and encountered in everyday life. This course has been approved for transfer under the CAA and ICAA as a universal general education transfer component (UGETC) course in Mathematics.

WBL 111 Work-Based Learning I 0-10-1

Local Prerequisite: Approval of Instructor or Department Chairperson

This course provides a work-based learning experience with a college-approved employer in an area related to the student's program of study. Emphasis is placed on integrating classroom learning with related work experience. Upon completion, students should be able to evaluate career selection, demonstrate employability skills, and satisfactorily perform work-related competencies.