



Program Planning Guide

Sustainable Agriculture Associate in Applied Science (A15410)

Program Length: 5 semesters

Program Sites: Chatham Main Campus, Day Program

Career Pathway Options: Associate in Applied Science in Sustainable Agriculture

Suggested Course Schedule		Class	Lab	Work	Credits	Notes:
1st Semester (fall)						
ACA 122	College Transfer Success	0	2	0	1	
AGR 111	Basic Farm Maintenance	2	3	0	2	
AGR 139	Intro to Sustainable Ag	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	
Total Semester Hours		14	9	0	17	
2nd Semester (spring)						
AGR 121	Biological Pest Management	3	0	0	3	
AGR 160	Plant Science	2	2	0	3	
ANS 111	Sustainable Livestock Mgt	2	2	0	3	
ENG 111	Writing and Inquiry	3	0	0	3	
HOR 130	Greenhouse Design	3	0	0	3	
Humanities/Fine Arts Elective		3	0	0	3	
Total Semester Hours		16	4	0	18	
3rd Semester (summer)						
WBL 111	Work-Based Learning I	0	0	10	1	
Total Semester Hours		0	0	10	1	



4th Semester (fall)						
AGR 214	Agriculture Marketing	3	0	0	3	
AGR 220	Ag Mechanization	2	2	0	3	
AGR 267	Permaculture	2	2	0	3	
HOR 168	Plant Propagation	2	2	0	3	
Com Elective	ENG 112, ENG 114, or COM 110	3	0	0	3	
Crop Prod	AGR 265 (SP) OR AGR 266 (FA)	2	2	0	3	
	Total Semester Hours	14	8	0	18	
5th Semester (spring)						
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	
Math Elective	MAT 110 OR MAT 143	2	2	0	3	
	Total Semester Hours	11	8	0	14	
Total Semester Hours Credit Required for Graduation: 68						



Course Descriptions

ACA 122 College Transfer Success

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/ICAA as a premajor and/or elective course requirement.

AGR 111 Basic Farm Maintenance

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 Management

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 will be able to identify and recommend methods of prevention and control of selected insects and diseases.

AGR 139 Intro to Sustainable Ag

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 will be able to identify the principles of sustainable agriculture as they relate to basic production practices.

AGR 160 Plant Science

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

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

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 Agriculture Marketing

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 Ag Mechanization

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 265 Organic Crop Prod: Spring

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 will be able to demonstrate a knowledge of organic crop production appropriate for the spring season.

**AGR 266 Organic Crop Prod: Fall**

This 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

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 Adv Organic Crop Production

Prerequisite: 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

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 Mgt

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, students will recognize appropriate breeds for their farm needs and demonstrate knowledge of small scale livestock production.

BUS 280 REAL Small Business

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.

CIS 111 Basic PC Literacy

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

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/ICAA as a general education course in Communication.

ENG 111 Writing and Inquiry

Prerequisite: Take one set: Set 1: DRE 097; Set 2: ENG 002; Set 3: BSP 4002

Corequisite: Take ENG 011

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/ICAA as a general education course in English Composition.

**ENG 112 Writing/Research in the Disc**

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/ICAA as a general education course in English Composition.

ENG 114 Prof Research & Reporting

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/ICAA as a general education course in English Composition.

HOR 130 Greenhouse Design

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

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.

MAT 110 Math Measurement & Literacy

Prerequisite: Take one set: Set 1: DMA 010, DMA 020, and DMA 030; Set 2: DMA 025; Set 3: MAT 003; Set 4: BSP 4003

Corequisite: Take MAT 010

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

Prerequisite: Take one set: Set 1: DMA 010, DMA 020, DMA 030, and DRE 098; Set 2: DMA 010, DMA 020, DMA 030, and ENG 002; Set 3: DMA 010, DMA 020, DMA 030, and BSP 4002; Set 4: DMA 025 and DRE 092; Set 5: DMA 025 and ENG 002; Set 6: DMA 025 and BSP 4002; Set 7: MAT 003 and DRE 08; Set 8: MAT 003 and ENG 002; Set 9: MAT 003 and BSP 4002; Set 10: BSP 4003 and DRE 098; Set 11: BSP 4003 and ENG 002; Set 12: BSP 4003 and BSP 4002

Corequisite: Take MAT 043

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/ICAA as a general education course in Mathematics (Quantitative).



Approved Humanities/Fine Arts Electives Associate in Applied Science Degree/Diploma		Approved Social/Behavioral Science Electives Associate in Applied Science Degree/Diploma	
ART 111	Art Appreciation	ANT 210	General Anthropology
ART 114	Art History Survey I	ANT 220	Cultural Anthropology
ART 115	Art History Survey II	ECO 151	Survey of Economics
DRA 111	Theatre Appreciation	ECO 251	Principles of Microeconomics
ENG 125	Creative Writing I	ECO 252	Principles of Macroeconomics
ENG 231	American Literature I	HIS 111	World Civilization I
ENG 232	American Literature II	HIS 112	World Civilization II
ENG 241	British Literature I	HIS 131	American History I
ENG 242	British Literature II	HIS 132	American History II
HUM 110	Technology & Society	HIS 222	African-American History I
HUM 115	Critical Thinking	HIS 223	African-American History II
HUM 120	Cultural Studies	HIS 226	The Civil War
HUM 122	Southern Culture	HIS 236	North Carolina History
HUM 150	American Women's Studies	POL 120	American Government
HUM 160	Introduction to Film	PSY 150	General Psychology
MUS 110	Music Appreciation	PSY 237	Social Psychology
MUS 112	Introduction to Jazz	PSY 241	Developmental Psychology
PHI 240	Introduction to Ethics	PSY 246	Adolescent Psychology
REL 110	World Religions	PSY 281	Abnormal Psychology
REL 211	Intro to Old Testament	SOC 210	Introduction to Sociology
REL 212	Intro to New Testament	SOC 213	Sociology of the Family
		SOC 220	Social Problems
		SOC 225	Social Diversity
		SOC 232	Social Context of Aging
		SOC 240	Social Psychology