01.0000 Agricultural Sciences Cluster

The Agriculture/Agricultural Sciences Cluster program prepares individuals to apply technical skills associated with agricultural research and development. The program includes instruction in the scientific method, laboratory techniques and practices, and employability skills required of technicians in biotechnology, environmental science, plant science, animal science, aquaculture science, and food science fields.

Emphasis within the program should be on developing competencies in, the following areas

Sanitizing/maintaining the workplace
Communicating in the workplace
Testing/sampling
Grading/inspecting raw, processed and/or finished products
Receiving/shipping/packaging products
Processing food and food by-products
Performing examining room and laboratory work
Establishing aquaculture production facilities
Managing water facilities
Operating aquaculture system equipment
Managing an aquaculture production operation
Marketing aquaculture products
Evaluating hazardous chemical and waste sample data
Calibrating, operating and maintaining Instrumentation
Understanding and applying pertinent safety regulations
Selecting and using appropriate personal protective and respiratory equipment
Collecting, preparing, documenting, and shipping samples for analysis
Correctly handling and transporting hazardous materials according to regulations

The following are examples of occupations for which instruction may be provided at the secondary level

Seed Analyst
Herbarium Worker
Feed Research Aide
Biological Aide
Artificial Inseminator
Artificial Breeding Technician
Animal Caretaker
Animal Nursery Worker
Fish Hatchery Worker
Plant Propagator

Training received in this program may be used as a basis for entry level into the labor market or for further training at a postsecondary agency. Articulation between the secondary and postsecondary programs will be a part of the regional delivery systems.

The following occupational listing shows examples of occupations that are available to students who advance and successfully complete a specialized program at the postsecondary level.

Food and Drug Inspector
Agricultural Chemicals Inspector
Pesticide Control Inspector
Agricultural Commodities Inspector
Dairy Technologist
Fiber Technologist
Biological Specimen Technician
Laboratory Tester
Food Tester
Pollution Control Technician
Research Kennel Supervisor

In addition to those occupations already noted, there are many agricultural occupations of a professional nature requiring a baccalaureate degree and beyond.

Workplace skills such as 1) those skills used in work performance that are transferable across jobs and occupations and that are instrumental to job and classroom success, 2) skills used to manage life's transitions and 3) skills employed in the resolution of interpersonal, information or task-related problems or problems related to behavior in cooperative group settings should be included in this curriculum. Leadership skill development is an integral part of this program and is delivered through career and technical student organization (FFA) activities. Individualized instruction and learning reinforcement are provided through supervised agricultural experience programs (SAEPS) maintained by each student.

AGRICULTURAL SCIENCES COURSE SEQUENCE

Course Title	Credits per Semester	Length in Semesters	Grade Level
Orientation			
Introduction to the Agricultural Industry	.5	2	9
Basic Agricultural Science	.5	2	10
Supervised Agricultural Experience Program I	*variable	2	9, 10
Preparation			
Agricultural Biotechnology	.5	1	11, 12
Food Science Technology	.5	1	11, 12
Environmental Science	.5	1	11, 12
Aquacultural Science and Technology	.5	1	11, 12
Veterinary Technology	.5	2	11, 12
Agricultural Leadership	.5	1	11, 12
Agricultural Communications	.5	1	11, 12
Agricultural Business Management	.5	2	11, 12
Biological Science Applications in Agriculture (Plants)	.5	1	11, 12
Biological Science Applications in Agriculture (Animals)	.5	1	11, 12
Physical Science Applications in Agriculture I	.5	1	11, 12
Physical Science Applications in Agriculture II	.5	1	11, 12
Supervised Agricultural Experience Program II	*variable	2	11, 12
Agricultural Cooperative Education	*variable	2	12

* As determined at the regional system level.