



# Agriculture, Food, and Natural Resources

## Fredericktown High School Career Cluster Program of Study

This Program of Study Template can serve as a guide, along with other career planning materials, as you continue your career path. Courses listed within this plan are only recommended coursework and should be individualized to meet each learner's educational and career goals. **Ask your high school counselor to help you fill in the required courses you need to graduate.**

| Grade | English<br>8 semesters  | Math<br>6 semesters   | Science<br>6 semesters                            | Social Studies<br>6 semesters  | Other Required Courses,<br>Recommended Electives   | Career & Technical Courses and/or<br>Degree Major Courses @ Unitec  | SAMPLE Occupations<br>Relating to this Pathway   |
|-------|---|---|---|--|--|---|--|
| 9     | Comm Arts I   | High School Math  | High School Science Course                        | High School S.S. Course  | Personal Finance<br>Computer Science<br>Ag electives   | See high school counselor for course offerings  | <p><b>Occupations Requiring Postsecondary Education</b></p> <ul style="list-style-type: none"> <li>▶ Agricultural Communications Specialist</li> <li>▶ Agricultural Salesperson</li> <li>▶ Food &amp; Drug Inspector</li> <li>▶ Food Meal Supervisor</li> <li>▶ Food Processor</li> <li>▶ Meat Cutter-Meat Grader</li> <li>▶ Meat Processor</li> <li>▶ Produce Buyer</li> </ul> <p><b>Occupations Requiring Baccalaureate Degree &amp; Beyond</b></p> <ul style="list-style-type: none"> <li>▶ Agricultural Educator</li> <li>▶ Bacteriologist</li> <li>▶ Biochemist-Nutritionist</li> <li>▶ Bioengineer</li> <li>▶ Dietician</li> <li>▶ Food &amp; Fiber Engineer</li> <li>▶ Food Scientist</li> <li>▶ Meat Science Researcher</li> <li>▶ Microbiologist</li> <li>▶ Quality Control Specialist</li> </ul> |
| 10    | Comm Arts II  | High School Math  | High School Science Course                        | High School S.S. Course  | Personal Finance<br>Computer Science<br>Ag electives   | See high school counselor for course offerings  |  |
| 11    | Comm Arts III & Comm Arts elective<br><br>*English Comp I<br>*Public Speaking         | Pre-College Algebra or high school math course<br><br>*College Algebra,<br>*College Trig. | High School Science Course<br>*General Biology    | High school S.S. Electives – History & Government<br><br>*American History I & II,<br>*Western Civ I & II<br>*Spanish<br>*Gen Psyche and Socio | *Ag electives<br>*Zoology<br>*Anatomy & Physiology<br>*General Chemistry<br>*Botany<br><br>(Available for Dual Enrollment) | See high school counselor for course offerings<br><br>*Check with school counselor for dual enrollment classes available on the web or on one of the MAC campuses |  |
| 12    | Senior Comm Arts & Comm Arts elective<br><br>*English Comp II<br>*Intro to Literature | Pre- College Algebra high school courses<br><br>*College Algebra,<br>* College Trig.      | High School Science Course<br>*Intro to Chemistry | High school S.S. Electives –History & Government<br><br>*American History I & II<br>*Western Civ I & II<br>*Spanish<br>*Gen Psyche and Socio   | *Ag electives<br>*Zoology<br>*Anatomy & Physiology<br>*General Chemistry<br>*Botany<br><br>(Available for Dual Enrollment) | See high school counselor for course offerings<br><br>*Check with school counselor for dual enrollment classes available on the web or on one of the MAC campuses |  |

\*Dual Credit courses can often be substituted for high school credit. Check with your Counselor.

\*Dual Enrollment courses can be taken on a MAC campus or online.

Assessments/Certifications: College Placement Assessments, Compass, ACT, SAT

Clubs/Extracurricular Activities: CTSO(s):  FBLA  FCCLA  FFA \*Ask your Counselor what is available at your school.

Work-Based Learning:  After School Employment  Internship/Mentorship  Job Shadowing  Service Learning  Supervised Business Experience

|   |  |   |   |  |  |  |   |
|---|--|---|---|--|--|--|---|
| Sample Career Specialties / Occupations | <p>Agricultural Communication Specialists<br/> Agricultural Educators<br/> Agricultural Sales<br/> Bacteriologists<br/> Biochemists<br/> Bioengineers<br/> Cheese Makers<br/> Fieldmen<br/> Food &amp; Drug Inspectors<br/> Food &amp; Fiber Engineers<br/> Food Brokers<br/> Food Meal Supervisors<br/> Food Processors<br/> Food Scientists<br/> Meat Cutters<br/> Meat Graders<br/> Meat Processors<br/> Meat Science Researchers<br/> Microbiologists<br/> Nutritionists/Dieticians<br/> Produce Buyers<br/> Quality Control Specialists<br/> Storage Supervisors<br/> Toxicologists</p> | <p>Agricultural Educators<br/> Agricultural Journalists<br/> Aquaculturalists<br/> Bioinformatics Specialists<br/> Biotechnology Lab Technicians<br/> Botanists<br/> Commodity Marketing Specialists<br/> Crop Farm Managers<br/> Custom Hay/Silage Operators<br/> Education &amp; Extension Specialists<br/> Farmers<br/> Forest Geneticists<br/> Golf Course Superintendents<br/> Grain Operations Superintendents<br/> Greenhouse Mangers<br/> Growers<br/> Plant Breeders and Geneticists<br/> Plant Pathologists<br/> Ranchers<br/> Sales Representatives<br/> Soil &amp; Water Specialists<br/> Tree Surgeons</p> | <p>Agricultural Educators<br/> AI Technicians-Aquaculturalists<br/> Animal Caretakers<br/> Poultry Managers<br/> Poultry Managers<br/> Animal Health Salespersons<br/> Animal Nutritionists<br/> Animal Scientists<br/> Dairy Producers<br/> Embryo Technologists<br/> Embryo Transfer Technicians<br/> Equine Managers<br/> Feed Sales Representatives<br/> Feed Sales Specialists<br/> Feedlot Specialists<br/> Livestock Buyers<br/> Livestock Geneticists<br/> Livestock Inspectors<br/> Livestock Producers<br/> Meat Science Researcher<br/> Pet Shop Operators<br/> Reproductive Physiologists<br/> USDA Inspectors<br/> Veterinarians<br/> Veterinary Assistants<br/> Vivarian Technicians<br/> Wildlife Biologists</p> | <p>Agricultural Applications Software Developers<br/> Agricultural Educator<br/> Agricultural Engineers<br/> Agricultural Extension Communication Technicians<br/> Computer Service Technical Support Technicians<br/> Database Administrators<br/> Electronics Systems Technicians<br/> Engineering Specialists<br/> Equipment/Parts Managers<br/> GPS Technicians<br/> Heavy Equipment Maintenance Technicians<br/> Information Lab Specialists<br/> Machine Operators<br/> Machinists<br/> Recycling Technicians<br/> Remote Sensing Specialist<br/> Waste Water Treatment Plant Operators<br/> Welders</p> | <p>Agricultural Educator<br/> Cartographers<br/> Commercial Fishermen<br/> Ecologists Park Mangers<br/> Environmental Interpreters<br/> Fish and Game Officers<br/> Fish Hatchery Manager<br/> Fisheries Technicians<br/> Fishing Vessel Operators<br/> Forest Technicians<br/> Geologists<br/> Hydrologists<br/> Log Grader<br/> Loggers<br/> Mining Engineers<br/> Pulp and Paper Manager<br/> Soil Geology Technician<br/> Range Technicians<br/> Vessel Crew<br/> Water Monitoring Technician<br/> Wildlife Managers</p> | <p>Agricultural Educator<br/> Environmental Sampling and Analysis Scientists And Technicians<br/> Hazardous Materials Handlers<br/> Hazardous Materials Technicians/ Managers<br/> Health and Safety Sanitarians<br/> Environmental Compliance Assurance Managers<br/> Pollution Prevention and Control Managers/Technicians<br/> Solid Waste Disposers/ Recyclers<br/> Solid Waste Managers/ Specialists/Technicians/ Toxicologists<br/> Waste Water Managers<br/> Water Environment Managers<br/> Water Quality Managers</p> | <p>Ag Lenders<br/> Agricultural Chemical Dealer<br/> Field Service Representative<br/> Chemical Sales Representative<br/> Agricultural Commodity Broker<br/> Agricultural Economist<br/> Agricultural Educator<br/> Agricultural Products Buyer<br/> Animal Health Products Distributor<br/> Banker/Loan Officer<br/> Farm Investment Manager<br/> Farm Manager<br/> Farmer /Rancher/Feedlot Operator<br/> Feed and Supply Store Manager<br/> Field Representative for Bank, Insurance Company or Government Program<br/> Livestock Rancher / Breeder<br/> Dairy Herd Supervisor (DHIA)<br/> Livestock Seller<br/> Produce Commission Agent<br/> Sales Manager<br/> Salesperson</p> |
| Path-ways                               | <p><b>Food Products and Processing Systems</b><br/> (Food Processing and preserving, Packaging, Distribution, Government monitoring &amp; regulation)</p>  | <p><b>Plant Systems</b><br/> (Agronomic, Horticulture, Forestry, Turf, Viticulture, Soils, etc.)</p>  | <p><b>Animal Systems</b><br/> (Large animals, small animals, wildlife animals, and research animals)</p>  | <p><b>Power, Structural &amp; Technical Systems</b><br/> (Power, Structures, Controls, Geospatial Technology, Computer Systems, Electronics, Hydraulics, Pneumatics, etc.)</p>   | <p><b>Natural Resources Systems</b><br/> (Habitat Conservation, Forest Products, Parks and Recreation, Mining, Environmental Services, Fisheries, Soil Conservation, etc.)</p>   | <p><b>Environmental Service Systems</b><br/> (Pollution Prevention, Water &amp; Air Quality, Hazardous Materials, Solid Waste Management, Health &amp; Safety Sanitation, etc.)</p>  | <p><b>Agribusiness Systems</b><br/> (Sales, Service, Farm and Ranch Management, Entrepreneurship, Economics, etc.)</p>  |
| Cluster K&S                             | <p align="center"><b>Cluster Knowledge and Skills</b></p> <p align="center">• Premier Leadership • Personal Growth • Career Success • Organizations and Associations • Organizational Structures and Processes • Safety, Health, and Environmental Management • Health and Safety Procedures • Tools, Equipment, Machinery and Technology • Issues • Technology and Globalization • Scientific Inquiry</p>   |   |   |  |  |  |   |