

Career and Technical Education Programs
Academic Year 2019-2020
Curriculum Frameworks by Career Cluster

Division of Career and Adult Education
Florida Department of Education
Rule 6A-6.0571

Florida Department of Education
Curriculum Framework

Course Title: Introduction to Agriculture, Food, & Natural Resources
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food, and Natural Resources

Secondary – Middle School

Course Number	8021100
CIP Number	148021100M
Grade Level	6-8
Standard Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Agriculture, Food and Natural Resource career cluster. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures.

Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8021100	Introduction to Agriculture, Food, & Natural Resources	AGRICULTUR 1 @2 EXP AG @4	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of the Food Products & Processing Systems career pathway.
- 02.0 Demonstrate an understanding of the Plant Systems career pathway.
- 03.0 Demonstrate an understanding of the Animal Systems career pathway.
- 04.0 Demonstrate an understanding of the Power, Structure, and Technical Systems career pathway.
- 05.0 Demonstrate an understanding of the Natural Resource Systems career pathway.
- 06.0 Demonstrate an understanding of the Environmental Service Systems career pathway.
- 07.0 Demonstrate an understanding of the Agribusiness Systems career pathway.
- 08.0 Apply leadership and communication skills.
- 09.0 Describe how information technology is used in the Agriculture, Food & Natural Resources career cluster.
- 10.0 Use information technology tools.

**Florida Department of Education
Student Performance Standards**

Course Title: Introduction to Agriculture, Food, & Natural Resources
Course Number: 8021100
Course Length: Semester

Course Description:

Beginning with a broad overview of the Agriculture, Food, and Natural Resources career cluster, students are introduced to the terminology, careers, history, required skills, and technologies associated with each pathway in the Agriculture, Food, and Natural Resources career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills.

CTE Standards and Benchmarks	
01.0	Demonstrate an understanding of the Food Products & Processing Systems career pathway – the student will be able to:
01.01	Define and use proper terminology associated with the Food Products & Processing Systems career pathway.
01.02	Describe some of the careers available in the Food Products & Processing Systems career pathway.
01.03	Identify common characteristics of the careers in the Food Products & Processing Systems career pathway.
01.04	Research the history of the Food Products & Processing Systems career pathway and describe how the associated careers have evolved and impacted society.
01.05	Identify skills required to successfully enter any career in the Food Products & Processing Systems career pathway.
01.06	Describe technologies associated in careers within the Food Products & Processing Systems career pathway.
02.0	Demonstrate an understanding of the Plant Systems career pathway – the student will be able to:
02.01	Define and use proper terminology associated with the Plant Systems career pathway.
02.02	Describe some of the careers available in the Plant Systems career pathway.
02.03	Identify common characteristics of the careers in the Plant Systems career pathway.
02.04	Research the history of the Plant Systems career pathway and describe how the careers have evolved and impacted society.
02.05	Identify skills required to successfully enter any career in the Plant Systems career pathway.
02.06	Describe technologies associated in careers within the Plant Systems career pathway.

CTE Standards and Benchmarks

03.0 Demonstrate an understanding of the Animal Systems career pathway – the student will be able to:

03.01 Define and use proper terminology associated with the Animal Systems career pathway.

03.02 Describe some of the careers available in the Animal Systems career pathway.

03.03 Identify common characteristics of the careers in the Animal Systems career pathway.

03.04 Research the history of the Animal Systems career pathway and describe how the careers have evolved and impacted society.

03.05 Identify skills required to successfully enter any career in the Animal Systems career pathway.

03.06 Describe technologies associated in careers within the Animal Systems career pathway.

04.0 Demonstrate an understanding of the Power, Structural and Technological Systems career pathway – the student will be able to:

04.01 Define and use proper terminology associated with the Power, Structural and Technological Systems career pathway.

04.02 Describe some of the careers available in the Power, Structural and Technological Systems career pathway.

04.03 Identify common characteristics of the careers in the Power, Structural and Technological Systems career pathway.

04.04 Research the history of the Power, Structural and Technological Systems career pathway and describe how the careers have evolved and impacted society.

04.05 Identify skills required to successfully enter any career in the Power, Structural and Technological Systems career pathway.

04.06 Describe technologies associated in careers within the Power, Structural, and Technological Systems career pathway.

05.0 Demonstrate an understanding of the Natural Resource Systems career pathway – the student will be able to:

05.01 Define and use proper terminology associated with the Natural Resource Systems career pathway.

05.02 Describe some of the careers available in the Natural Resource Systems career pathway.

05.03 Identify common characteristics of the careers in the Natural Resource Systems career pathway.

05.04 Research the history of the Natural Resource Systems career pathway and describe how the careers have evolved and impacted society.

05.05 Identify skills required to successfully enter any career in the Natural Resource Systems career pathway.

05.06 Describe technologies associated in careers within the Natural Resource Systems career pathway.

06.0 Demonstrate an understanding of the Environmental Service Systems career pathway – the student will be able to:

CTE Standards and Benchmarks

06.01 Define and use proper terminology associated with the Environmental Service Systems career pathway.

06.02 Describe some of the careers available in the Environmental Service Systems career pathway.

06.03 Identify common characteristics of the careers in Environmental Service Systems career pathway.

06.04 Research the history of the Environmental Service Systems career pathway and describe how the careers have evolved and impacted society.

06.05 Identify skills required to successfully enter any career in the Environmental Service Systems career pathway.

06.06 Describe technologies associated in careers within the Environmental Service Systems career pathway.

07.0 Demonstrate an understanding of the Agribusiness Systems career pathway – the student will be able to:

07.01 Define and use proper terminology associated with the Agribusiness Systems career pathway.

07.02 Describe some of the careers available in the Agribusiness Systems career pathway.

07.03 Identify common characteristics of the careers in Environmental Service Systems career pathway.

07.04 Research the history of the Agribusiness Systems career pathway and describe how the careers have evolved and impacted society.

07.05 Identify skills required to successfully enter any career in the Agribusiness Systems career pathway.

07.06 Describe technologies associated in careers within the Agribusiness Systems career pathway.

08.0 Apply leadership and communication skills – the student will be able to:

08.01 Discuss the establishment and history of the FFA organization.

08.02 Identify the characteristics and responsibilities of organizational leaders.

08.03 Demonstrate parliamentary procedure skills during a meeting.

08.04 Participate on a committee which has an assigned task and report to the class.

08.05 Demonstrate effective communication skills through delivery of a speech, a slide presentation, or conducting a demonstration.

08.06 Use a computer to assist in the completion of project related to the Agriculture, Food, & Natural Resources career cluster.

09.0 Describe how information technology is used in the Agriculture, Food & Natural Resources career cluster – the student will be able to:

09.01 Identify information technology (IT) careers in the Agriculture, Food & Natural Resources career cluster, including the responsibilities, tasks and skills they require.

CTE Standards and Benchmarks

09.02 Relate information technology project management concepts and terms to careers in the Agriculture, Food & Natural Resources career cluster.

09.03 Manage information technology components typically used in professions of the Agriculture, Food & Natural Resources career cluster.

09.04 Identify security-related ethical and legal IT issues faced by professionals in the Agriculture, Food & Natural Resources career cluster.

10.0 Use information technology tools – the student will be able to:

10.01 Identify the functions of web browsers, and use them to access the World Wide Web and other computer resources typically used in the Agriculture, Food & Natural Resources career cluster.

10.02 Use e-mail clients to send simple messages and files to other Internet users.

10.03 Demonstrate ways to communicate effectively using Internet technology.

10.04 Use different types of web search engines effectively to locate information relevant to the Agriculture, Food & Natural Resources career cluster.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Introduction to Agriculture, Food, & Natural Resources and Career Planning*
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food, and Natural Resources

Secondary – Middle School

Course Number	8021110
CIP Number	148021100M
Grade Level	6-8
Standard Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

*Effective July 1, 2017, there is no longer a promotion requirement for middle grades students to complete a Career and Education Planning course. However, these courses will continue to be available and should be taught integrating the eight career and education planning course standards. The MyCareerShines powered by Kuder® career planning system is available free of charge to all Florida middle and high schools to assist students in exploring career options and developing an academic and career plan.

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Agriculture, Food and Natural Resource career cluster. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures.

Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8021110	Introduction to Agriculture, Food, & Natural Resources and Career Planning	AGRICULTUR 1 @2 EXP AG @4	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Demonstrate an understanding of the Food Products & Processing Systems career pathway.
- 02.0 Demonstrate an understanding of the Plant Systems career pathway.
- 03.0 Demonstrate an understanding of the Animal Systems career pathway.
- 04.0 Demonstrate an understanding of the Power, Structure, and Technical Systems career pathway.
- 05.0 Demonstrate an understanding of the Natural Resource Systems career pathway.
- 06.0 Demonstrate an understanding of the Environmental Service Systems career pathway.
- 07.0 Demonstrate an understanding of the Agribusiness Systems career pathway.
- 08.0 Apply leadership and communication skills.
- 09.0 Describe how information technology is used in the Agriculture, Food & Natural Resources career cluster.
- 10.0 Use information technology tools.

Listed below are the eight career and education planning course standards.

- 11.0 Describe the influences that societal, economic, and technological changes have on employment trends and future training.
- 12.0 Develop skills to locate, evaluate, and interpret career information.
- 13.0 Identify and demonstrate processes for making short and long term goals.
- 14.0 Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
- 15.0 Understand the relationship between educational achievement and career choices/postsecondary options.
- 16.0 Identify a career cluster and related pathways through an interest assessment that match career and education goals.
- 17.0 Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.
- 18.0 Demonstrate knowledge of technology and its application in career fields/clusters.

**Florida Department of Education
Student Performance Standards**

Course Title: Introduction to Agriculture, Food, & Natural Resources and Career Planning
Course Number: 8021110
Course Length: Semester

Course Description:

Beginning with a broad overview of the Agriculture, Food, and Natural Resources career cluster, students are introduced to the terminology, careers, history, required skills, and technologies associated with each pathway in the Agriculture, Food, and Natural Resources career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills.

CTE Standards and Benchmarks	
01.0	Demonstrate an understanding of the Food Products & Processing Systems career pathway – the student will be able to:
01.01	Define and use proper terminology associated with the Food Products & Processing Systems career pathway.
01.02	Describe some of the careers available in the Food Products & Processing Systems career pathway.
01.03	Identify common characteristics of the careers in the Food Products & Processing Systems career pathway.
01.04	Research the history of the Food Products & Processing Systems career pathway and describe how the associated careers have evolved and impacted society.
01.05	Identify skills required to successfully enter any career in the Food Products & Processing Systems career pathway.
01.06	Describe technologies associated in careers within the Food Products & Processing Systems career pathway.
02.0	Demonstrate an understanding of the Plant Systems career pathway – the student will be able to:
02.01	Define and use proper terminology associated with the Plant Systems career pathway.
02.02	Describe some of the careers available in the Plant Systems career pathway.
02.03	Identify common characteristics of the careers in the Plant Systems career pathway.
02.04	Research the history of the Plant Systems career pathway and describe how the careers have evolved and impacted society.
02.05	Identify skills required to successfully enter any career in the Plant Systems career pathway.
02.06	Describe technologies associated in careers within the Plant Systems career pathway.

CTE Standards and Benchmarks

03.0 Demonstrate an understanding of the Animal Systems career pathway – the student will be able to:

03.01 Define and use proper terminology associated with the Animal Systems career pathway.

03.02 Describe some of the careers available in the Animal Systems career pathway.

03.03 Identify common characteristics of the careers in the Animal Systems career pathway.

03.04 Research the history of the Animal Systems career pathway and describe how the careers have evolved and impacted society.

03.05 Identify skills required to successfully enter any career in the Animal Systems career pathway.

03.06 Describe technologies associated in careers within the Animal Systems career pathway.

04.0 Demonstrate an understanding of the Power, Structural and Technological Systems career pathway – the student will be able to:

04.01 Define and use proper terminology associated with the Power, Structural and Technological Systems career pathway.

04.02 Describe some of the careers available in the Power, Structural and Technological Systems career pathway.

04.03 Identify common characteristics of the careers in the Power, Structural and Technological Systems career pathway.

04.04 Research the history of the Power, Structural and Technological Systems career pathway and describe how the careers have evolved and impacted society.

04.05 Identify skills required to successfully enter any career in the Power, Structural and Technological Systems career pathway.

04.06 Describe technologies associated in careers within the Power, Structural, and Technological Systems career pathway.

05.0 Demonstrate an understanding of the Natural Resource Systems career pathway – the student will be able to:

05.01 Define and use proper terminology associated with the Natural Resource Systems career pathway.

05.02 Describe some of the careers available in the Natural Resource Systems career pathway.

05.03 Identify common characteristics of the careers in the Natural Resource Systems career pathway.

05.04 Research the history of the Natural Resource Systems career pathway and describe how the careers have evolved and impacted society.

05.05 Identify skills required to successfully enter any career in the Natural Resource Systems career pathway.

05.06 Describe technologies associated in careers within the Natural Resource Systems career pathway.

06.0 Demonstrate an understanding of the Environmental Service Systems career pathway – the student will be able to:

CTE Standards and Benchmarks

06.01 Define and use proper terminology associated with the Environmental Service Systems career pathway.

06.02 Describe some of the careers available in the Environmental Service Systems career pathway.

06.03 Identify common characteristics of the careers in Environmental Service Systems career pathway.

06.04 Research the history of the Environmental Service Systems career pathway and describe how the careers have evolved and impacted society.

06.05 Identify skills required to successfully enter any career in the Environmental Service Systems career pathway.

06.06 Describe technologies associated in careers within the Environmental Service Systems career pathway.

07.0 Demonstrate an understanding of the Agribusiness Systems career pathway – the student will be able to:

07.01 Define and use proper terminology associated with the Agribusiness Systems career pathway.

07.02 Describe some of the careers available in the Agribusiness Systems career pathway.

07.03 Identify common characteristics of the careers in Environmental Service Systems career pathway.

07.04 Research the history of the Agribusiness Systems career pathway and describe how the careers have evolved and impacted society.

07.05 Identify skills required to successfully enter any career in the Agribusiness Systems career pathway.

07.06 Describe technologies associated in careers within the Agribusiness Systems career pathway.

08.0 Apply leadership and communication skills – the student will be able to:

08.01 Discuss the establishment and history of the FFA organization.

08.02 Identify the characteristics and responsibilities of organizational leaders.

08.03 Demonstrate parliamentary procedure skills during a meeting.

08.04 Participate on a committee which has an assigned task and report to the class.

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08.06 Use a computer to assist in the completion of project related to the Agriculture, Food, & Natural Resources career cluster.

09.0 Describe how information technology is used in the Agriculture, Food & Natural Resources career cluster – the student will be able to:

09.01 Identify information technology (IT) careers in the Agriculture, Food & Natural Resources career cluster, including the responsibilities, tasks and skills they require.

CTE Standards and Benchmarks

09.02 Relate information technology project management concepts and terms to careers in the Agriculture, Food & Natural Resources career cluster.

09.03 Manage information technology components typically used in professions of the Agriculture, Food & Natural Resources career cluster.

09.04 Identify security-related ethical and legal IT issues faced by professionals in the Agriculture, Food & Natural Resources career cluster.

10.0 Use information technology tools – the student will be able to:

10.01 Identify the functions of web browsers, and use them to access the World Wide Web and other computer resources typically used in the Agriculture, Food & Natural Resources career cluster.

10.02 Use e-mail clients to send simple messages and files to other Internet users.

10.03 Demonstrate ways to communicate effectively using Internet technology.

10.04 Use different types of web search engines effectively to locate information relevant to the Agriculture, Food & Natural Resources career cluster.

Listed below are the eight career and education planning course standards:

The student will be able to:

11.0 Describe the influences that societal, economic, and technological changes have on employment trends and future training.

12.0 Develop skills to locate, evaluate, and interpret career information.

13.0 Identify and demonstrate processes for making short and long term goals.

14.0 Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.

15.0 Understand the relationship between educational achievement and career choices/postsecondary options.

16.0 Identify a career cluster and related pathways that match career and education goals.

17.0 Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.

18.0 Demonstrate knowledge of technology and its application in career fields/clusters.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

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Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

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Florida Department of Education
Curriculum Framework

Course Title: Fundamentals of Agriculture, Food, and Natural Resource Systems
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food, and Natural Resources

Secondary – Middle School

Course Number	8021300
CIP Number	148021300M
Grade Level	6-8
Standard Length	year
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Agriculture, Food and Natural Resource career cluster. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures.

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Course Structure

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The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8021300	Fundamentals of Agriculture, Food, and Natural Resource Systems	AGRICULTUR 1 @2 EXP AG @4	year

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Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Summarize the evolution of production agriculture.
- 02.0 Differentiate between animal welfare and ethical treatment of animals
- 03.0 Explain skills and principles used in dairy production.
- 04.0 Explain skills and principles used in livestock production.
- 05.0 Explain skills and principles used in poultry production.
- 06.0 Explain skills and principles used in aquaculture production
- 07.0 Explain skills and principles used in vegetable production.
- 08.0 Investigate and demonstrate skills and principles used in nursery production.
- 09.0 Apply scientific and technical skills in production agriculture.
- 10.0 Manage leadership and communication skills
- 11.0 Examine good work habits, and career planning in agriculture production.
- 12.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in production agriculture.
- 13.0 Identify components of network systems.
- 14.0 Describe and use communication features of information technology.

**Florida Department of Education
Student Performance Standards**

Course Title: Fundamentals of Agriculture, Food, and Natural Resource Systems
Course Number: 8021300
Course Length: Semester

Course Description:

The next series in the world of the Agriculture, Food, and Natural Resources career cluster, students will be engaged in activities with terminology, careers, history, required skills, and technologies associated with each pathway in the Agriculture, Food, and Natural Resources career cluster. Additionally, they will be provided with opportunities to acquire and demonstrate beginning leadership skills.

CTE Standards and Benchmarks	
01.0	Summarize the evolution of production agriculture – the student will be able to:
01.01	Describe the importance of agriculture on a world, national, state and community scale.
01.02	Distinguish the major agricultural production areas of the United States.
01.03	Distinguish agriculture products produced in Florida.
01.04	Interpret how changes in production practices, population, and land use have influenced the agriculture economy.
01.05	Demonstrate how development of new technology has affected agriculture production.
01.06	Examine the changes in agriculture careers that reflect the changes in production methods.
02.0	Differentiate between animal welfare and ethical treatment of animals – the student will be able to:
02.01	Describe the proper handling of production animals.
02.02	Compare animal welfare and animal rights.
02.03	Explain how animal welfare and animal rights advocate groups impact production agriculture.
02.04	Summarize animal cruelty and the consequences of cruel treatment of animals.
03.0	Explain skills and principles used in dairy production – the student will be able to:
03.01	Explain the difference between breeds of dairy cattle.

CTE Standards and Benchmarks

03.02 Demonstrate knowledge of proper health and nutrition for dairy animals.

03.03 Explain the safety procedures used for dairy products.

03.04 Compare different styles of dairies and milking parlors.

03.05 Identify the varieties of dairy products and the methods of processing.

03.06 Create a dairy product.

04.0 Explain skills and principles used in livestock production – the student will be able to:

04.01 Compare the different breeds of livestock.

04.02 Differentiate the different cuts and grading of meat.

04.03 Evaluate proper health and nutrition for livestock animals.

04.04 Demonstrate knowledge of terminology for animals based on species and condition (eg. age, sex, bred, etc...)

04.05 Determine different reproduction methods, and the process of selective breeding.

04.06 Explain how the use of biotechnology has impacted the livestock industry.

05.0 Explain skills and principles used in poultry production – the student will be able to:

05.01 Compare different types of poultry and their uses in production agriculture.

05.02 Differentiate proper techniques for classification and grading of poultry and poultry products.

05.03 Describe proper safe handling techniques for poultry products.

05.04 Evaluate knowledge of health and nutrition for poultry.

05.05 Explain how the use of biotechnology has impacted the poultry industry.

06.0 Explain skills and principles used in aquaculture production – the student will be able to:

06.01 Compare the different breeds of aquatic species.

06.02 Evaluate proper health and nutrition for aquatic species.

06.03 Demonstrate knowledge of terminology for aquatic species.

CTE Standards and Benchmarks

06.04 Determine different reproduction methods.

06.05 Explain how the use of biotechnology has impacted the aquatic species industry.

07.0 Explain skills and principles used in vegetable production – the student will be able to:

07.01 Produce a vegetable crop.

07.02 Compare the components of soil.

07.03 Perform a soil test.

07.04 Describe how climate can affect crop production.

07.05 Compile knowledge of growing seasons for a geographic region.

07.06 Explain the use of Best Management Practices in crop production.

07.07 Investigate the impact of pests on crop yields.

07.08 Model the safety precautions on a pesticide and fertilizer label.

07.09 Assess proper irrigation methods for crops.

07.10 Analyze knowledge of harvesting techniques and equipment

07.11 Compare types of storage facilities.

07.12 Explain how the use of biotechnology has impacted vegetable crop production.

08.0 Explain skills and principles used in nursery production – the student will be able to:

08.01 Perform plant propagation.

08.02 Develop a growing schedule for nursery plants.

08.03 Model methods for Integrated Pest Management.

08.04 Compare types of growing media.

08.05 Identify nutrients necessary for plant growth from the periodic table and their functions.

08.06 Identify plants based on common and scientific names.

CTE Standards and Benchmarks

08.07 Describe principles for plant growth.

08.08 Explain different methods of irrigation.

08.09 Explain how the use of biotechnology has impacted plant production.

09.0 Apply scientific and technical skills in production agriculture – the student will be able to:

09.01 Formulate scientifically investigable questions, construct investigations, collect and evaluate data, and develop scientific recommendations based on findings.

09.02 Employ technological tools to expedite workflow including word processing, databases, reports, spreadsheets, multimedia presentations, electronic calendar, contacts, email, and internet applications

10.0 Manage leadership and communication skills – the student will be able to:

10.01 Discuss the establishment and history of the FFA organization.

10.02 Compare the characteristics and responsibilities of organizational leaders.

10.03 Demonstrate parliamentary procedure skills during a meeting.

10.04 Participate on a committee which has an assigned task and report to the class.

10.05 Demonstrate effective communication skills through delivery of a speech or conducting a demonstration.

10.06 Use a computer to assist in the completion of an agricultural project.

11.0 Demonstrate good work habits, and career planning in agriculture production – the student will be able to:

11.01 Identify attitudes and habits necessary to achieve career success.

11.02 Describe personality aspects to consider when choosing a career.

11.03 Identify the basic steps in career planning.

11.04 Identify and research careers within a specific area of agriscience.

12.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in production agriculture – the student will be able to:

12.01 Apply basic mathematics operations to solve agricultural problems.

12.02 Correctly use measuring devices and utilize measurements to solve agricultural problems.

12.03 Prepare written and/or oral materials using correct English grammar.

CTE Standards and Benchmarks

12.04 Identify the main idea in oral presentations and/or written materials.

12.05 Locates, organizes, and interprets information from a variety of agricultural sources.

12.06 Describe the historical evolution of agriculture.

12.07 Select and study a problem that can be tested under controlled conditions to establish a hypothesis or to illustrate a known law.

13.0 Identify components of network systems – the student will be able to:

13.01 Identify structure to access internet, including hardware and software components.

13.02 Identify and configure user customization features in web browsers, including preferences, caching, and cookies.

13.03 Recognize essential database concepts.

13.04 Define and use additional networking and internet services.

14.0 Describe and use communication features of information technology – the student will be able to:

14.01 Define important internet communications protocols and their roles in delivering basic Internet services.

14.02 Identify basic principles of the Domain Name System (DNS).

14.03 Identify security issues related to Internet clients.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Extended Student Supervision

Because of the production and marketing cycle of the agriculture industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Fundamentals of Agriculture, Food, and Natural Resource Services
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food, and Natural Resources

Secondary – Middle School

Course Number	8021400
CIP Number	148021300M
Grade Level	6-8
Standard Length	year
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Agriculture, Food and Natural Resource career cluster. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures.

Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8021400	Fundamentals of Agriculture, Food, and Natural Resource Services	Agriculture 1 @2 EXP AG @4	year

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Identify components of agribusiness.
- 02.0 Recommend appropriate agriculture communications concepts
- 03.0 Summarize skills used in landscape services.
- 04.0 Incorporate knowledge and skills involved with food science.
- 05.0 Construct a floral design.
- 06.0 Communicate skills gained from small, companion animal care.
- 07.0 Recommend leadership and communication styles.
- 08.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology.
- 09.0 Recognize the value of responsibility, good work habits, and planning for career opportunities in agriculture services.
- 10.0 Identify components of network systems
- 11.0 Describe and use communication features of information technology

**Florida Department of Education
Student Performance Standards**

Course Title: Fundamentals of Agriculture, Food and Natural Resource Services
Course Number: 8021400
Course Length: 1 Year

Course Description:

This course is designed to develop competencies in the area of agriculture services. This includes: the global impact of agribusiness, communications, landscaping, food science, floral design, companion animal care, as well leadership skills. Laboratory-based activities are an integral part of this course. These include safe use and application of appropriate technology, scientific testing and observation equipment.

CTE Standards and Benchmarks	
01.0	Identify components of agribusiness – the student will be able to:
01.01	Describe the business cycle.
01.02	Complete a profit/loss statement.
01.03	Distinguish between types of competition practices.
01.04	Demonstrate proper methods of recording merchandise.
01.05	Summarize proper use of customer service skills.
01.06	Explain proper management techniques.
02.0	Recommend appropriate agriculture communications concepts – the student will be able to :
02.01	Sort and classify types of communication used in Agriculture.
02.02	Create messages using various forms of communication.
02.03	Generate a speech.
02.04	Compare and contrast different types of media.
02.05	Create a photo story.
02.06	Demonstrate proper ethics in communication.

CTE Standards and Benchmarks

02.07 Identify and compare regulating agencies.

02.08 Evaluate careers in agriculture communications.

03.0 Summarize skills used in landscape services – the student will be able to:

03.01 Distinguish plants based on common and scientific name.

03.02 Conduct a soil test.

03.03 Construct an irrigation system.

03.04 Compare and contrast landscape styles.

03.05 Select plants based on environmental factors.

03.06 Design a landscape.

03.07 Model personal safety and knowledge of equipment.

03.08 Explain proper procedures for applying pesticides and fertilizer based on Best Management practices.

03.09 Inventory an ecosystem.

03.10 Apply knowledge of invasive plants.

03.11 Apply knowledge of customer interactions

04.0 Incorporate knowledge and skills involved with food science – the student will be able to:

04.01 Explain the process from farm to consumer

04.02 Investigate safe food handling practices, and their regulating agencies

04.03 Document changes in food preservation and how it impacted our civilization

04.04 Recognize food processing and packaging procedures.

04.05 Explain how to develop and market a food product.

04.06 Describe the components of a nutrition label

04.07 Create and market a food product.

CTE Standards and Benchmarks

05.0 Construct a floral design – the student will be able to:

05.01 Compare and contrast historical and cultural contributions to design.

05.02 Identify types of arrangements and products.

05.03 Demonstrate knowledge of floral pricing.

05.04 Verify flowers by common and scientific name.

05.05 Assemble a floral arrangement.

05.06 Summarize knowledge of inventory skills.

05.07 Develop a marketing plan.

06.0 Communicate skills gained from small, companion animal care – the student will be able to:

06.01 Demonstrate knowledge of proper nutrition and health in small and companion animals.

06.02 Differentiate between animal welfare and animal rights.

06.03 Describe the training process for service animals

06.04 Compare and contrast career opportunities available for companion animals based on animal type and breed.

06.05 Explain proper care for a small animal.

07.0 Recommend leadership and communication styles – the student will be able to:

07.01 Explore the establishment and history of the FFA organization.

07.02 Analyze the characteristics and responsibilities of organizational leaders.

07.03 Demonstrate parliamentary procedure skills during a meeting.

07.04 Evaluate a committee which has an assigned task and report to the class.

07.05 Demonstrate effective communication skills through delivery of a speech or conducting a demonstration.

07.06 Use a computer to assist in the completion of an agricultural project.

08.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology – the student will be able to:

CTE Standards and Benchmarks

08.01 Apply basic mathematics operations to solve agricultural problems.

08.02 Correctly use measuring devices and utilize measurements to solve agricultural problems.

08.03 Apply the scientific method to solve an agricultural problem.

08.04 Prepare written and/or oral materials using correct English grammar.

08.05 Identify the main idea in oral presentations and/or written materials.

08.06 Locates, organizes, and interprets information from a variety of agricultural sources.

08.07 Describe the historical evolution of agriculture.

09.0 Recognize the value of responsibility, good work habits, and planning for career opportunities in agriculture services – the student will be able to:

09.01 Identify attitudes and habits necessary to achieve career success.

09.02 Describe personality aspects to consider when choosing a career.

09.03 Identify the basic steps in career planning.

09.04 Develop basic career plan.

09.05 Identify and research careers within a specific area of agriscience.

10.0 Identify components of network systems – the student will be able to:

10.01 Identify structure to access internet, including hardware and software components.

10.02 Identify and configure user customization features in web browsers, including preferences, caching, and cookies.

10.03 Recognize essential database concepts.

10.04 Define and use additional networking and internet services.

11.0 Describe and use communication features of information technology – the student will be able to:

11.01 Define important internet communications protocols and their roles in delivering basic Internet services.

11.02 Identify basic principles of the Domain Name System (DNS).

11.03 Identify security issues related to Internet clients.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Extended Student Supervision

Because of the production and marketing cycle of the agriculture industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Orientation to Agriscience and Career Planning*
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food and Natural Resources

Secondary – Middle School

Course Number	8100110
CIP Number	01019910OR
Grade Level	6-8
Standard Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

*Effective July 1, 2017, there is no longer a promotion requirement for middle grades students to complete a Career and Education Planning course. However, these courses will continue to be available and should be taught integrating the eight career and education planning course standards. The MyCareerShines powered by Kuder® career planning system is available free of charge to all Florida middle and high schools to assist students in exploring career options and developing an academic and career plan.

Purpose

This course provides an overview of agriculture, and will help students to be educated about their food supply. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Student will learn a basic understanding of agriculture with focuses on plants, animals, and natural resources. Students will also learn about our food system and the safety procedures in agriculture systems.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8100110	Orientation to Agriscience and Career Planning	AGRICULTUR 1 @2 EXP AG @4	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Demonstrate knowledge and skills in agriscience research.
- 02.0 Demonstrate knowledge and skills in the importance of agriculture.
- 03.0 Demonstrate knowledge and skills in agriscience laboratories and workshops.
- 04.0 Demonstrate knowledge and skills plant sciences.
- 05.0 Demonstrate knowledge and skills in animal sciences.
- 06.0 Demonstrate knowledge and skills in food science.
- 07.0 Demonstrate product knowledge and skills in agricultural processing and marketing.
- 08.0 Demonstrate knowledge and skills in natural resources.
- 09.0 Demonstrate leadership and communication skills.
- 10.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology.

Listed below are the eight career and education planning course standards.

- 11.0 Describe the influences that societal, economic, and technological changes have on employment trends and future training.
- 12.0 Develop skills to locate, evaluate, and interpret career information.
- 13.0 Identify and demonstrate processes for making short and long term goals.
- 14.0 Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.
- 15.0 Understand the relationship between educational achievement and career choices/postsecondary options.
- 16.0 Identify a career cluster and related pathways through an interest assessment that match career and education goals.
- 17.0 Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.
- 18.0 Demonstrate knowledge of technology and its application in career fields/clusters.

**Florida Department of Education
Student Performance Standards**

Course Title: Orientation to Agriscience and Career Planning
Course Number: 8100110
Course Length: Semester

Course Description:

This course is designed to provide an understanding of the agricultural food system, environmental resources, and strategies used to produce and market agricultural products, and an exploration of research through the use of the scientific method. Throughout the semester/year student will take a closer look at agriculture and learn about the research and development of our food supply.

CTE Standards and Benchmarks	
01.0	Demonstrate knowledge and skills in agriscience research – the student will be able to:
01.01	Define agriscience.
01.02	Describe products of agriscience.
01.03	Define the scope of research in agriscience.
01.04	Discuss the impact of research on agriculture on consumer opinion.
01.05	Identify the steps of the scientific method.
01.06	Apply the scientific method to solve an agricultural problem.
02.0	Demonstrate knowledge and skills in the importance of agriculture – the student will be able to:
02.01	Describe the historical evolution of agriculture and its impact on civilization.
02.02	Discuss the scope of agriculture and its impact on daily life.
02.03	Identify specific areas of commodity production in the state, nation and world.
03.0	Demonstrate knowledge and skills in agriscience laboratories and workshops – the student will be able to:
03.01	Identify tools, machines and equipment used in agriculture.
03.02	Demonstrates proper laboratory/ workshop safety techniques.

03.03	Complete a project demonstrating the safe use of agricultural tools, machinery or equipment.
03.04	Discuss the impact of agricultural mechanization and engineering on society.
03.05	Conduct an experiment using proper laboratory techniques.
04.0	Demonstrate knowledge and skills in plant sciences – the student will be able to:
04.01	Distinguish between horticulture, forestry, and agronomic.
04.02	Propagate and grow an agricultural plant.
04.03	Identify supplies and services industries related to plant science.
04.04	Develop a specimen collection of local plant materials.
04.05	Demonstrate proper planting techniques.
04.06	Discuss organic agriculture and conventional agriculture as it relates to plants
05.0	Demonstrate knowledge and skills in animal sciences – the student will be able to:
05.01	Distinguish between food, service and companion animals.
05.02	Identify breeds of food, service and companion animals.
05.03	Identify supplies and services industries related to animal science.
05.04	Identify the needs of an animal and describe and describe proper care for that animal.
05.05	Identify consumer foods and products derived from animals.
05.06	Discuss organic and conventional agriculture as it relates to livestock production.
06.0	Demonstrate knowledge and skills in food science – the student will be able to:
06.01	Describe the proper handling techniques and storage of food products from farm to plate.
06.02	List and explain methods of food preservation.
06.03	Conduct a food taste test.
06.04	Develop a production and marketing plan for a food product.
06.05	Read and interpret a food label.

07.0	Demonstrate product knowledge and skills in agricultural processing and marketing – the student will be able to:
07.01	Define agricultural product processing and marketing.
07.02	Describe the processing and marketing of an agriculture product from farm to consumer.
07.03	Prepare, process, and market an agricultural product.
08.0	Demonstrate knowledge and skills in natural resources – the student will be able to:
08.01	Define and identify renewable and nonrenewable natural resources.
08.02	Describe agricultural management practices that conserve natural resources.
08.03	Describe effects of pollution on the environment.
08.04	Demonstrate how to recycle or conserve a natural resource.
09.0	Demonstrate leadership and communication skills – the student will be able to:
09.01	Describe the aims and purposes of the FFA organization.
09.02	Identify opportunities available to FFA members.
09.03	Identify characteristics of a good leader.
09.04	Participate in a cooperative leadership development activity or FFA Career Development Event.
09.05	Identify the importance of effective communication skills.
09.06	Demonstrate effective communication skills.
10.0	Integrate the use of science, mathematics, reading, geography, history, writing and communication in agriscience and technology – the student will be able to:
10.01	Apply basic mathematic operations to solve agricultural problems.
10.02	Correctly use measuring instruments and utilize measurements to solve agricultural problems.
10.03	Prepare written and oral materials using correct English grammar.
10.04	Identify the main idea in oral presentations and written materials.
10.05	Locates, organizes and interprets information from a variety of agricultural sources.

Listed below are the eight career and education planning course standards:

The student will be able to:

11.0 Describe the influences that societal, economic, and technological changes have on employment trends and future training.

12.0 Develop skills to locate, evaluate, and interpret career information.

13.0 Identify and demonstrate processes for making short and long term goals.

14.0 Demonstrate employability skills such as working in a group, problem-solving and organizational skills, and the importance of entrepreneurship.

15.0 Understand the relationship between educational achievement and career choices/postsecondary options.

16.0 Identify a career cluster and related pathways through an interest assessment that match career and education goals.

17.0 Develop a career and education plan that includes short and long-term goals, high school program of study, and postsecondary/career goals.

18.0 Demonstrate knowledge of technology and its application in career fields/clusters.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Extended Student Supervision

Because of the production and marketing cycle of the agriculture industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Introduction to Agriscience
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food and Natural Resources

Secondary – Middle School

Course Number	8100120
CIP Number	01019921EX
Grade Level	6-8
Standard Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

Purpose

This course is the first in a sequence of courses designed to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Agriculture, Food and Natural Resource career cluster. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Student will learn a basic understanding of agriculture with focuses on plants, animals, and natural resources. Students will also learn about our food system and the safety procedures in agriculture systems.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8100120	Introduction to Agriscience	AGRICULTUR 1 @2 EXP AG @4	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Identify the importance of agriscience.
- 02.0 Identify and practice agriculture safety skills.
- 03.0 Describe the importance of plants and animals in agriculture.
- 04.0 Use selected techniques to produce finished products from agricultural materials.
- 05.0 Describe leadership and communication skills.
- 06.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology.

**Florida Department of Education
Student Performance Standards**

Course Title: Introduction to Agriscience
Course Number: 8100120
Course Length: Semester

Course Description:

This course is the first course in a sequence of middle school agriculture study. This course is designed to develop competencies in the areas of agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Content of this course is focused on the introduction to the food system. During the semester/ year students will learn about plants, animals, food systems, and natural resources.

CTE Standards and Benchmarks	
01.0	Identify the importance of agriscience – the student will be able to:
01.01	Define agriscience and explain its diversity and scope.
01.02	Describe the importance of agriculture on a world, national, state and community scale.
01.03	Describe the importance of agriculture in each individual's life.
01.04	Collect and discuss information on current agricultural events.
01.05	Trace the evolution of agriscience from its beginnings to current applications.
01.06	Identify the major agricultural production areas of the United States and of Florida and the major commodities produced.
01.07	Describe the diversity of career opportunities in agriculture and its related fields..
01.08	Describe the relationship between natural resources and agriculture.
01.09	Describe technology used in agricultural production, processing, and marketing of agricultural products.
02.0	Identify and practice agriculture safety skills- the student will be able to:
02.01	Identify procedures for safely using equipment
02.02	Identify and use proper personal protective equipment.

02.03	Describe proper procedures for safety in agriculture classroom/lab/farm
03.0	Describe the importance of plants and animals in agriculture – the student will be able to:
03.01	Identify plants important to agriculture.
03.02	Identify animals important to agriculture.
03.03	Demonstrate the proper handling and ethical care of animals.
03.04	Describe animal rights and animal welfare.
03.05	Compare organic farming and conventional farming.
03.06	Identify conditions necessary for agricultural production.
03.07	Evaluate proper health and nutrition for livestock animals.
03.08	Compare companion animals and livestock animals
03.09	Identify the agricultural source of consumer products.
03.10	Trace the development of an agricultural product from the producer to the consumer.
04.0	Use selected techniques to produce finished products from agricultural materials – the student will be able to:
04.01	Complete a project safely using the appropriate agricultural tools, machinery or equipment.
04.02	Prepare and process an agricultural product.
04.03	Propagate horticulture plants.
05.0	Describe leadership and communication skills – the student will be able to:
05.01	Describe the aims and purposes of the FFA organization.
05.02	Identify opportunities available to FFA members.
05.03	Define leadership and different leadership styles.
05.04	Define communication and identify methods of communication
05.05	Prepare and present and extemporaneous speech.
06.0	Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology – the student will be able to:

06.01	Apply basic mathematics operations to solve agricultural problems.
06.02	Correctly use measuring devices and utilize measurements to solve agricultural problems.
06.03	Prepare written and oral materials using correct English grammar.
06.04	Identify the main idea in oral presentations and written materials.
06.05	Locates, organizes, and interprets information from a variety of agricultural sources.
06.06	Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology – the student will be able to:
06.07	Apply basic mathematics operations to solve agricultural problems.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Extended Student Supervision

Because of the production and marketing cycle of the agriculture industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Exploration of Agriscience
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food and Natural Resources

Secondary – Middle School

Course Number	8100210
CIP Number	01019920EX
Grade Level	6-8
Standard Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the Agriculture, Food and Natural Resource career cluster. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8100210	Exploration of Agriscience	AGRICULTUR 1 @2 EXP AG @4	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Explain the evolution of agriculture.
- 02.0 Apply knowledge and skills in plant sciences.
- 03.0 Apply knowledge and skills in Forestry.
- 04.0 Apply knowledge and skills in animal sciences.
- 05.0 Demonstrate knowledge and skills in food science.
- 06.0 Apply knowledge and skills in biotechnology.
- 07.0 Apply knowledge and skills in processing and marketing.
- 08.0 Apply knowledge and skills in natural resources.
- 09.0 Apply leadership and communication skills.
- 10.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology.

**Florida Department of Education
Student Performance Standards**

Course Title: Exploration of Agriscience
Course Number: 8100210
Course Length: Semester

Course Description:

This course is designed for students that have already covered the basic introduction to agriculture. This course is designed to provide instruction that explores the tasks, training, education and physical requirements of a broad range of agriscience and natural resources careers develop competencies in the areas of agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. During the semester/ year student will take a more in depth look into plants, animals, natural resources, and food science as they learn more about our food system.

CTE Standards and Benchmarks	
01.0	Explain the evolution of agriculture- the student will be able to:
01.01	Define agriculture.
01.02	Identify and research careers within a specific area of agriscience.
01.03	Explain how commodities have diversified in Florida.
02.0	Apply knowledge and skills in plant sciences – the student will be able to:
02.01	Produce an agricultural plant.
02.02	Discuss the technology involved in the development of improved crops.
02.03	Identify agribusinesses that provide supplies and services to plant science industries in the state..
02.04	Identify the recommended uses and safety precautions from a pesticide label.
02.05	Discuss basic landscape design.
02.06	Identify pests, pathogens, parasites, and predators of horticultural and agronomic crops.
02.07	Describe the major components of soil.
02.08	Demonstrate how to read a fertilizer label

02.09	Describe various forms of fertilizer and proper application method.
03.0	Apply knowledge and skills in Forestry- the student will be able to:
03.01	Identify the major forest regions of the United States and Florida.
03.02	Describe the importance of forests and forest products.
03.03	Describe how trees grow, reproduce, and components of forest health.
03.04	Describe tools and techniques common to the forest industry.
03.05	Identify pests, pathogens, parasites, and predators of forests.
04.0	Apply knowledge and skills in animal sciences – the student will be able to:
04.01	Describe the differences between animal welfare and animal rights.
04.02	Discuss the technology involved in the development of improved animal products.
04.03	Identify the breeds of livestock important to agriculture.
04.04	Identify agribusinesses that provide supplies and services to animal science industries in the state.
04.05	Describe the uses of livestock and their products.
05.0	Demonstrate knowledge and skills in food science – the student will be able to:
05.01	Demonstrate the proper handling and storage of food products from farm to plate.
05.02	Describe and demonstrate at least one method of food preservation.
05.03	Conduct a food taste test.
05.04	Produce and market a food product.
05.05	Read, interpret, and develop a food label.
05.06	Describe the components of a balance diet.
05.07	Identify and compare USDA standards and grades for agricultural products.
06.0	Apply knowledge and skills in biotechnology – the student will be able to:
06.01	Define biotechnology.

06.02	Discuss current and future uses of genetic engineering.
06.03	Identify issues associated with biotechnology.
06.04	Explain the history of genetic engineering and biotechnology in agriculture.
06.05	Apply knowledge and skills in biotechnology – the student will be able to:
07.0	Apply knowledge and skills in agricultural processing and marketing – the student will be able to:
07.01	Identify processing and packaging techniques used in agriculture.
07.02	Discuss the difference in marketing strategies between perishable and nonperishable commodities.
07.03	Describe how processing, packaging, and marketing affects the price of an item.
07.04	Recognize misleading advertising.
07.05	Describe how competition benefits the consumer.
08.0	Apply knowledge and skills in natural resources – the student will be able to:
08.01	Identify methods or practices of the conservation natural resources.
08.02	Demonstrate a method or practice of conservation.
08.03	Identify major ecosystems in Florida.
08.04	Discuss the importance of the ecosystems to agriculture, society and each other.
08.05	Define Best Management Practices (BMPs) and explain their benefits to agriculture.
09.0	Apply leadership and communication skills – the student will be able to:
09.01	Discuss the establishment and history of the FFA organization.
09.02	Identify the characteristics and responsibilities of organizational leaders.
09.03	Identify parliamentary procedure skills during a business meeting.
09.04	Demonstrate effective communication skills through delivery of a speech or conducting a demonstration.
09.05	Identify communication skills necessary for effective leadership.
09.06	Identify state and community organizations associated with agricultural promotion.

10.0	Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology – the student will be able to:
10.01	Apply basic mathematics operations to solve agricultural problems.
10.02	Correctly use measuring devices and utilize measurements to solve agricultural problems.
10.03	Apply the scientific method to solve an agricultural problem.
10.04	Prepare written and/or oral materials using correct English grammar.
10.05	Identify the main idea in oral presentations and/or written materials.
10.06	Locates, organizes, and interprets information from a variety of agricultural sources.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Extended Student Supervision

Because of the production and marketing cycle of the agriculture industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Orientation to Agriscience
Course Type: Orientation/Exploratory
Career Cluster: Agriculture, Food and Natural Resources

Secondary – Middle School

Course Number	8100310
CIP Number	01019910OR
Grade Level	6-8
Standard Length	Semester
Teacher Certification	Refer to the <u>Course Structure</u> section.
CTSO	FFA

Purpose

This course provides an overview of agriculture, and will help students to be educated about their food supply. The content includes but is not limited to agricultural literacy, importance of agriculture, the role of science, math, reading, writing, geography, history, and technology in agriculture, plants and animals, and sources of consumer goods from agriculture. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Student will learn a basic understanding of agriculture with focuses on plants, animals, and natural resources. Students will also learn about our food system and the safety procedures in agriculture systems.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8100310	Orientation to Agriscience	AGRICULTUR 1 @2 EXP AG @4	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Demonstrate knowledge and skills in agriscience research.
- 02.0 Demonstrate knowledge and skills in the importance of agriculture.
- 03.0 Demonstrate knowledge and skills in agriscience laboratories and workshops.
- 04.0 Demonstrate knowledge and skills in plant sciences.
- 05.0 Demonstrate knowledge and skills in animal sciences.
- 06.0 Demonstrate knowledge and skills in food science.
- 07.0 Demonstrate product knowledge and skills in agricultural processing and marketing.
- 08.0 Demonstrate knowledge and skills in natural resources.
- 09.0 Demonstrate leadership and communication skills.
- 10.0 Integrate the use of science, mathematics, reading, geography, history, writing, and communication in agriscience and technology.

**Florida Department of Education
Student Performance Standards**

Course Title: Orientation to Agriscience
Course Number: 8100310
Course Length: Semester

Course Description:

This course is designed to provide an understanding of the agricultural food system, environmental resources, and strategies used to produce and market agricultural products, and an exploration of research through the use of the scientific method. Throughout the semester/year student will take a closer look at agriculture and learn about the research and development of our food supply.

CTE Standards and Benchmarks	
01.0	Demonstrate knowledge and skills in agriscience research – the student will be able to:
01.01	Define agriscience.
01.02	Describe products of agriscience.
01.03	Define the scope of research in agriscience.
01.04	Discuss the impact of research on agriculture on consumer opinion.
01.05	Identify the steps of the scientific method.
01.06	Apply the scientific method to solve an agricultural problem.
02.0	Demonstrate knowledge and skills in the importance of agriculture – the student will be able to:
02.01	Describe the historical evolution of agriculture and its impact on civilization.
02.02	Discuss the scope of agriculture and its impact on daily life.
02.03	Identify specific areas of commodity production in the state, nation and world.
03.0	Demonstrate knowledge and skills in agriscience laboratories and workshops – the student will be able to:
03.01	Identify tools, machines and equipment used in agriculture.
03.02	Demonstrates proper laboratory/ workshop safety techniques.

03.03	Complete a project demonstrating the safe use of agricultural tools, machinery or equipment.
03.04	Discuss the impact of agricultural mechanization and engineering on society.
03.05	Conduct an experiment using proper laboratory techniques.
04.0	Demonstrate knowledge and skills in plant sciences – the student will be able to:
04.01	Distinguish between horticulture, forestry, and agronomic.
04.02	Propagate and grow an agricultural plant.
04.03	Identify supplies and services industries related to plant science.
04.04	Develop a specimen collection of local plant materials.
04.05	Demonstrate proper planting techniques.
04.06	Discuss organic agriculture and conventional agriculture as it relates to plants
05.0	Demonstrate knowledge and skills in animal sciences – the student will be able to:
05.01	Distinguish between food, service and companion animals.
05.02	Identify breeds of food, service and companion animals.
05.03	Identify supplies and services industries related to animal science.
05.04	Identify the needs of an animal and describe and describe proper care for that animal.
05.05	Identify consumer foods and products derived from animals.
05.06	Discuss organic and conventional agriculture as it relates to livestock production.
06.0	Demonstrate knowledge and skills in food science – the student will be able to:
06.01	Describe the proper handling techniques and storage of food products from farm to plate.
06.02	List and explain methods of food preservation.
06.03	Conduct a food taste test.
06.04	Develop a production and marketing plan for a food product.
06.05	Read and interpret a food label.

07.0	Demonstrate product knowledge and skills in agricultural processing and marketing – the student will be able to:
07.01	Define agricultural product processing and marketing.
07.02	Describe the processing and marketing of an agriculture product from farm to consumer.
07.03	Prepare, process, and market an agricultural product.
08.0	Demonstrate knowledge and skills in natural resources – the student will be able to:
08.01	Define and identify renewable and nonrenewable natural resources.
08.02	Describe agricultural management practices that conserve natural resources.
08.03	Describe effects of pollution on the environment.
08.04	Demonstrate how to recycle or conserve a natural resource.
09.0	Demonstrate leadership and communication skills – the student will be able to:
09.01	Describe the aims and purposes of the FFA organization.
09.02	Identify opportunities available to FFA members.
09.03	Identify characteristics of a good leader.
09.04	Participate in a cooperative leadership development activity or FFA Career Development Event.
09.05	Identify the importance of effective communication skills.
09.06	Demonstrate effective communication skills.
10.0	Integrate the use of science, mathematics, reading, geography, history, writing and communication in agriscience and technology – the student will be able to:
10.01	Apply basic mathematic operations to solve agricultural problems.
10.02	Correctly use measuring instruments and utilize measurements to solve agricultural problems.
10.03	Prepare written and oral materials using correct English grammar.
10.04	Identify the main idea in oral presentations and written materials.
10.05	Locates, organizes and interprets information from a variety of agricultural sources.

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Extended Student Supervision

Because of the production and marketing cycle of the agriculture industry, this program requires individual instruction and supervision of students for the entire period beyond the 180-day school year.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

National FFA Organization (FFA) is the intercurricular career and technical student organization(s) providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.

Florida Department of Education
Curriculum Framework

Course Title: Orientation to Career Clusters
Course Type: Orientation/Exploratory

Secondary – Middle School

Course Number	8000400
CIP Number	1498999907
Grade Level	6 – 8
Standard Length	Semester
Teacher Certification	Refer to the Course Structure section.
CTSO	Any CTSO as appropriate

Purpose

The purpose of this course is to assist students in making informed decisions regarding their future academic and occupational goals and to provide information regarding careers in the seventeen career clusters. This course is a compilation of modules for each of the seventeen career clusters and is designed to provide flexibility in course offerings. Any number of modules can be selected to comprise a course that meets the needs of the students.

The content includes, but is not limited to, the orientation of students to career pathways in the career and technical education field. Reinforcement of academic skills occurs through classroom instruction and applied laboratory procedures. This course is recommended for students in the sixth grade, but not required.

Instruction and learning activities are provided in a laboratory setting using hands-on experiences with the equipment, materials and technology appropriate to the course content and in accordance with current practices.

Additional Information relevant to this Career and Technical Education (CTE) program is provided at the end of this document.

Course Structure

The length of this course is one semester. It may be offered for two semesters when appropriate. When offered for one semester, it is recommended that it be at the exploratory level and more in-depth when offered for two semesters.

To teach the course(s) listed below, instructors must hold at least one of the teacher certifications indicated for that course.

The following table illustrates the course structure:

Course Number	Course Title	Teacher Certification	Length
8000400	Orientation to Career Clusters	ANY FIELD	Semester

Florida Standards for English Language Development (ELD)

English language learners communicate for social and instructional purposes within the school setting. ELD.K12.SI.1.1

English Language Development (ELD) Standards Special Notes:

Teachers are required to provide listening, speaking, reading and writing instruction that allows English language learners (ELL) to communicate for social and instructional purposes within the school setting. For the given level of English language proficiency and with visual, graphic, or interactive support, students will interact with grade level words, expressions, sentences and discourse to process or produce language necessary for academic success. The ELD standard should specify a relevant content area concept or topic of study chosen by curriculum developers and teachers which maximizes an ELL's need for communication and social skills. For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition.

Standards

After successfully completing this course, the student will be able to perform the following:

- 01.0 Identify Florida's seventeen career clusters.
- 02.0 Identify and explore careers in the Agriculture, Food & Natural Resources cluster.
- 03.0 Identify and explore careers in the Architecture & Construction cluster.
- 04.0 Identify and explore careers in the Arts, A/V Technology & Communication cluster.
- 05.0 Identify and explore careers in the Business Management & Administration cluster.
- 06.0 Identify and explore careers in the Education & Training cluster.
- 07.0 Identify and explore careers in the Energy cluster.
- 08.0 Identify and explore careers in the Finance cluster.
- 09.0 Identify and explore careers in the Government & Public Administration cluster.
- 10.0 Identify and explore careers in the Health Science cluster.
- 11.0 Identify and explore careers in the Hospitality and Tourism cluster.
- 12.0 Identify and explore careers in the Human Services cluster.
- 13.0 Identify and explore careers in the Information Technology cluster.
- 14.0 Identify and explore careers in the Law, Public Safety & Security cluster.
- 15.0 Identify and explore careers in the Manufacturing cluster.
- 16.0 Identify and explore careers in the Marketing, Sales & Service cluster.
- 17.0 Identify and explore careers in the Engineering and Technology Education cluster.
- 18.0 Identify and explore careers in the Transportation, Distribution & Logistics cluster.
- 19.0 Describe leadership skills.

**Florida Department of Education
Student Performance Standards**

Course Title: Orientation to Career Clusters
Course Number: 8000400
Course Credit: Semester

Course Description:

This course is a broad overview of the seventeen career clusters offered in Florida. This course provides hands-on introductory activities for each career cluster as well as opportunities to acquire and demonstrate beginning leadership skills.

CTE Standards and Benchmarks	
01.0	Identify Florida’s seventeen career clusters – the student will be able to:
01.01	List Florida’s seventeen career clusters.
01.02	Research the national career clusters website.
01.03	Identify the Career and Technical Student Organizations (CTSO) appropriate for Career and Technical Education (CTE) programs.
01.04	Explain the purpose of a CTSO.
02.0	Identify and explore careers in the Agriculture, Food & Natural Resources cluster – the student will be able to:
02.01	Identify the pathways in the Agriculture, Food & Natural Resources career cluster and the careers in each pathway.
02.02	Describe the types of places that employ individuals who have careers in the Agriculture, Food & Natural Resources career cluster.
02.03	Describe the variety of tasks performed by individuals who have careers in the Agriculture, Food & Natural Resources career cluster.
02.04	List the skills, abilities, and talents needed for careers in the Agriculture, Food & Natural Resources career cluster.
02.05	Identify the level of training and education required for careers in the Agriculture, Food & Natural Resources career cluster.
02.06	Research a career in the Agriculture, Food & Natural Resources career cluster and present findings to the class.
02.07	Apply math, science, and reading skills in the completion of a project or activity related to the Agriculture, Food & Natural Resources career cluster.
03.0	Identify and explore careers in the Architecture & Construction cluster – the student will be able to:
03.01	Identify the pathways in the Architecture & Construction career cluster and the careers in each pathway.

CTE Standards and Benchmarks

03.02 Describe the types of places that employ individuals who have careers in the Architecture & Construction career cluster.

03.03 Describe the variety of tasks performed by individuals who have careers in the Architecture & Construction career cluster.

03.04 List the skills, abilities, and talents needed for careers in the Architecture & Construction career cluster.

03.05 Identify the level of training and education required for careers in the Architecture & Construction career cluster.

03.06 Research a career in the Architecture & Construction career cluster and present findings to the class.

03.07 Apply math, science, and reading skills in the completion of a project or activity related to the Architecture & Construction career cluster.

04.0 Identify and explore careers in the Arts, A/V Technology & Communication cluster – the student will be able to:

04.01 Identify the pathways in the Arts, A/V Technology & Communication career cluster and the careers in each pathway.

04.02 Describe the types of places that employ individuals who have careers in the Arts, A/V Technology & Communication career cluster.

04.03 Describe the variety of tasks performed by individuals who have careers in the Arts, A/V Technology & Communication career cluster.

04.04 List the skills, abilities, and talents needed for careers in the Arts, A/V Technology & Communication career cluster.

04.05 Identify the level of training and education required for careers in the Arts, A/V Technology & Communication career cluster.

04.06 Research a career in the Arts, A/V Technology & Communication career cluster and present findings to the class.

04.07 Apply math, science, and reading skills in the completion of a project or activity related to the Arts, A/V Technology & Communication career cluster.

05.0 Identify and explore careers in the Business, Management & Administration cluster – the student will be able to:

05.01 Identify the pathways in the Business, Management & Administration career cluster and the careers in each pathway.

05.02 Describe the types of places that employ individuals who have careers in the Business Management & Administration career cluster.

05.03 Describe the variety of tasks performed by individuals who have careers in the Business Management & Administration career cluster.

05.04 List the skills, abilities, and talents needed for careers in the Business Management & Administration career cluster.

05.05 Identify the level of training and education required for careers in the Business Management & Administration career cluster.

05.06 Research a career in the Business Management & Administration career cluster and present findings to the class.

05.07 Apply math, science, and reading skills in the completion of a project or activity related to the Business Management & Administration career cluster.

CTE Standards and Benchmarks

06.0 Identify and explore careers in the Education & Training cluster – the student will be able to:

06.01 Identify the pathways in the Education & Training career cluster and the careers in each pathway.

06.02 Describe the types of places that employ individuals who have careers in the Education & Training career cluster.

06.03 Describe the variety of tasks performed by individuals who have careers in the Education & Training career cluster.

06.04 List the skills, abilities, and talents needed for careers in the Education & Training career cluster.

06.05 Identify the level of training and education required for careers in the Education & Training career cluster.

06.06 Research a career in the Education & Training career cluster and present findings to the class.

06.07 Apply math, science, and reading skills in the completion of a project or activity related to the Education & Training career cluster.

07.0 Identify and explore careers in the Energy cluster – the student will be able to:

07.01 Identify the pathways in the Energy career cluster and the careers in each pathway.

07.02 Describe the types of places that employ individuals who have careers in the Energy career cluster.

07.03 Describe the variety of tasks performed by individuals who have careers in the Energy career cluster.

07.04 List the skills, abilities, and talents needed for careers in the Energy career cluster.

07.05 Identify the level of training and education required for careers in the Energy career cluster.

07.06 Research a career in the Energy career cluster and present findings to the class.

07.07 Apply math, science, and reading skills in the completion of a project or activity related to the Energy career cluster.

08.0 Identify and explore careers in the Finance cluster – the student will be able to:

08.01 Identify the pathways in the Finance career cluster and the careers in each pathway.

08.02 Describe the types of places that employ individuals who have careers in the Finance career cluster.

08.03 Describe the variety of tasks performed by individuals who have careers in the Finance career cluster.

08.04 List the skills, abilities, and talents needed for careers in the Finance career cluster.

08.05 Identify the level of training and education required for careers in the Finance career cluster.

08.06 Research a career in the Finance career cluster and present findings to the class.

CTE Standards and Benchmarks

08.07 Apply math, science, and reading skills in the completion of a project or activity related to the Finance career cluster.

09.0 Identify and explore careers in the Government & Public Administration cluster – the student will be able to:

09.01 Identify the pathways in the Government & Public Administration career cluster and the careers in each pathway.

09.02 Describe the types of places that employ individuals who have careers in the Government & Public Administration career cluster.

09.03 Describe the variety of tasks performed by individuals who have careers in the Government & Public Administration career cluster.

09.04 List the skills, abilities, and talents needed for careers in the Government & Public Administration career cluster.

09.05 Identify the level of training and education required for careers in the Government & Public Administration career cluster.

09.06 Research a career in the Government & Public Administration career cluster and present findings to the class.

09.07 Apply math, science, and reading skills in the completion of a project or activity related to the Government & Public Administration career cluster.

10.0 Identify and explore careers in the Health Science cluster – the student will be able to:

10.01 Identify the pathways in the Health Science career cluster and the careers in each pathway.

10.02 Describe the types of places that employ individuals who have careers in the Health Science career cluster.

10.03 Describe the variety of tasks performed by individuals who have careers in the Health Science career cluster.

10.04 List the skills, abilities, and talents needed for careers in the Health Science career cluster.

10.05 Identify the level of training and education required for careers in the Health Science career cluster.

10.06 Research a career in the Health Science career cluster and present findings to the class.

10.07 Apply math, science, and reading skills in the completion of a project or activity related to the Health Science career cluster.

11.0 Identify and explore careers in the Hospitality & Tourism cluster – the student will be able to:

11.01 Identify the pathways in the Hospitality & Tourism career cluster and the careers in each pathway.

11.02 Describe the types of places that employ individuals who have careers in the Hospitality & Tourism career cluster.

11.03 Describe the variety of tasks performed by individuals who have careers in the Hospitality & Tourism career cluster.

11.04 List the skills, abilities, and talents needed for careers in the Hospitality & Tourism career cluster.

11.05 Identify the level of training and education required for careers in the Hospitality & Tourism career cluster.

CTE Standards and Benchmarks

11.06 Research a career in the Hospitality & Tourism career cluster and present findings to the class.

11.07 Apply math, science, and reading skills in the completion of a project or activity related to the Hospitality & Tourism career cluster.

12.0 Identify and explore careers in the Human Services cluster – the student will be able to:

12.01 Identify the pathways in the Human Services career cluster and the careers in each pathway.

12.02 Describe the types of places that employ individuals who have careers in the Human Services career cluster.

12.03 Describe the variety of tasks performed by individuals who have careers in the Human Services career cluster.

12.04 List the skills, abilities, and talents needed for careers in the Human Services career cluster.

12.05 Identify the level of training and education required for careers in the Human Services career cluster.

12.06 Research a career in the Human Services career cluster and present findings to the class.

12.07 Apply math, science, and reading skills in the completion of a project or activity related to the Human Services career cluster.

13.0 Identify and explore careers in the Information Technology cluster – the student will be able to:

13.01 Identify the pathways in the Information Technology career cluster and the careers in each pathway.

13.02 Describe the types of places that employ individuals who have careers in the Information Technology career cluster.

13.03 Describe the variety of tasks performed by individuals who have careers in the Information Technology career cluster.

13.04 List the skills, abilities, and talents needed for careers in the Information Technology career cluster.

13.05 Identify the level of training and education required for careers in the Information Technology career cluster.

13.06 Research a career in the Information Technology career cluster and present findings to the class.

13.07 Apply math, science, and reading skills in the completion of a project or activity related to the Information Technology career cluster.

14.0 Identify and explore careers in the Law, Public Safety & Security cluster–The student will be able to:

14.01 Identify the pathways in the Law, Public Safety & Security career cluster and the careers in each pathway.

14.02 Describe the types of places that employ individuals who have careers in the Law, Public Safety & Security career cluster.

14.03 Describe the variety of tasks performed by individuals who have careers in the Law, Public Safety & Security career cluster.

14.04 List the skills, abilities, and talents needed for careers in the Law, Public Safety & Security career cluster.

CTE Standards and Benchmarks

14.05 Identify the level of training and education required for careers in the Law, Public Safety & Security career cluster.

14.06 Research a career in the Law, Public Safety & Security career cluster and present findings to the class.

14.07 Apply math, science, and reading skills in the completion of a project or activity related to the Law, Public Safety & Security career cluster.

15.0 Identify and explore careers in the Manufacturing cluster – the student will be able to:

15.01 Identify the pathways in the Manufacturing career cluster and the careers in each pathway.

15.02 Describe the types of places that employ individuals who have careers in the Manufacturing career cluster.

15.03 Describe the variety of tasks performed by individuals who have careers in the Manufacturing career cluster.

15.04 List the skills, abilities, and talents needed for careers in the Manufacturing career cluster.

15.05 Identify the level of training and education required for careers in the Manufacturing career cluster.

15.06 Research a career in the Manufacturing career cluster and present findings to the class.

15.07 Apply math, science, and reading skills in the completion of a project or activity related to the Manufacturing career cluster.

16.0 Identify and explore careers in the Marketing, Sales & Service cluster – the student will be able to:

16.01 Identify the pathways in the Marketing, Sales & Service career cluster and the careers in each pathway.

16.02 Describe the types of places that employ individuals who have careers in the Marketing, Sales & Service career cluster.

16.03 Describe the variety of tasks performed by individuals who have careers in the Marketing, Sales & Service career cluster.

16.04 List the skills, abilities, and talents needed for careers in the Marketing, Sales & Service career cluster.

16.05 Identify the level of training and education required for careers in the Marketing, Sales & Service career cluster.

16.06 Research a career in the Marketing, Sales & Service career cluster and present findings to the class.

16.07 Apply math, science, and reading skills in the completion of a project or activity related to the Marketing, Sales & Service career cluster.

17.0 Identify and explore careers in Engineering and Technology Education – the student will be able to:

17.01 Identify the pathways in Engineering and Technology Education.

17.02 Describe the types of places that employ individuals who have careers in Engineering and Technology Education.

17.03 Describe the variety of tasks performed by individuals who have careers in Engineering and Technology Education.

CTE Standards and Benchmarks

17.04 List the skills, abilities, and talents needed for careers in Engineering and Technology Education.

17.05 Identify the level of training and education required for careers in Engineering and Technology Education.

17.06 Research a career in Engineering and Technology Education and present findings to the class.

17.07 Apply math, science, and reading skills in the completion of a project or activity related to the Engineering and Technology Education.

18.0 Identify and explore careers in the Transportation & Logistics cluster – the student will be able to:

18.01 Identify the pathways in the Transportation & Logistics career cluster and the careers in each pathway.

18.02 Describe the types of places that employ individuals who have careers in the Transportation & Logistics career cluster.

18.03 Describe the variety of tasks performed by individuals who have careers in the Transportation & Logistics career cluster.

18.04 List the skills, abilities, and talents needed for careers in the Transportation & Logistics career cluster.

18.05 Identify the level of training and education required for careers in the Transportation & Logistics career cluster.

18.06 Research a career in the Transportation & Logistics career cluster and present findings to the class.

18.07 Apply math, science, and reading skills in the completion of a project or activity related to the Transportation & Logistics career cluster.

19.0 Describe leadership skills – the student will be able to:

19.01 Identify the Career and Technical Student Organization(s) that are appropriate for CTE programs in each of the career clusters.

19.02 Describe the leadership opportunities available to members of the CTSOs identified above.

19.03 Investigate the CTSOs at your school and/or in your school district (e.g., membership requirements, dues, activities, events).

Additional Information

Laboratory Activities

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental, quality, and safety procedures are an integral part of this career and technical program/course. Laboratory investigations benefit all students by developing an understanding of the complexity and ambiguity of empirical work, as well as the skills required to manage, operate, calibrate and troubleshoot equipment/tools used to make observations. Students understand measurement error; and have the skills to aggregate, interpret, and present the resulting data. Equipment and supplies should be provided to enhance hands-on experiences for students.

Special Notes

MyCareerShines is an interactive resource to assist students in identifying their ideal career and to enhance preparation for employment. Teachers are encouraged to integrate this resource into the program curriculum to meet the employability goals for each student.

Career and Technical Student Organization (CTSO)

The Florida Technology Student Association (FL-TSA) is the intercurricular career and technical student organization for providing leadership training and reinforcing specific career and technical skills. Career and Technical Student Organizations provide activities for students as an integral part of the instruction offered.

Accommodations

Federal and state legislation requires the provision of accommodations for students with disabilities as identified on the secondary student's Individual Educational Plan (IEP) or 504 plan or postsecondary student's accommodations' plan to meet individual needs and ensure equal access. Postsecondary students with disabilities must self-identify, present documentation, request accommodations if needed, and develop a plan with their counselor and/or instructors. Accommodations received in postsecondary education may differ from those received in secondary education. Accommodations change the way the student is instructed. Students with disabilities may need accommodations in such areas as instructional methods and materials, assignments and assessments, time demands and schedules, learning environment, assistive technology and special communication systems. Documentation of the accommodations requested and provided should be maintained in a confidential file.

In addition to accommodations, some secondary students with disabilities (students with an IEP served in Exceptional Student Education (ESE)) will need modifications to meet their needs. Modifications change the outcomes or what the student is expected to learn, e.g., modifying the curriculum of a secondary career and technical education course. Note: postsecondary curriculum and regulated secondary programs cannot be modified.