Triumph Gulf Coast, Inc.

Gulf
DISTRICT SCHOOLS

Agriscience

DISTRICT SCHOOLS

Unmanned Systems

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Agriscience

Applicant Information

Applicant: Gulf District Schools (no co-applicants)

Applicant Information:

- Public School System
  - Governed by an elected five-member board
  - Superintendent: Jim Norton
- Federal Employer Identification Number: 59-6000626
- Primary Contact: Lori Price, Assistant Superintendent for Instruction
  150 Middle School Road
  Port St. Joe, Florida 32456
  Phone: 850.229.6940
  Fax: 850.227.1999
  eMail: lprice@gulf.k12.fl.us
  Website: www.gulfcoschools.com
- Comprised of two Pre-K through 6 Title I elementary schools & two 7-12 high schools
- Current Enrollment: 1953
- 2018 School Grades:
  Port St. Joe Elementary: C
  Port St. Joe Jr.-Sr. High School: B
  Wewahitchka Elementary School: B
  Wewahitchka High School: B

District Grade History

2018	B	2014	C
2017	B	2013	C
2016	B	2012	B
2015	B	2011	A

Participating School Information

Wewahitchka High School	0081	Jay Bidwell	1 Gator Circle Wewahitchka, FL 32465	850.639.2228	850.639.5394	352

Demographic Breakdown of Students
(Source: most recent School Public Accountability Report)

White	38.7	78.0	82.0
Black or African American	22.3	12.8	11.3
Hispanic/Latino	32.4	4.0	*
Asian	2.7	0.4	*
Native American or Other Pacific Islander	0.2	0.1	0
American Indian or Alaska Native	0.3	0.2	*
Two or More Races	3.4	4.6	4.2
Disabled	13.4	17.5	17.7
Economically Disadvantaged	58.8	60.5	62.6
ELL	13.4	0.6	0
Migrant	0.5	0.2	0
Female	48.7	49.1	54.1
Male	51.4	50.9	45.9

Student Performance Data
(Source: most recent School Public Accountability Report)

Graduation Rate	80.7	81.5	81.4
High School Dropout Rate	4.0	4.5	6.5
College Going	75	60	52
Percent of Scoring Satisfactory or Above/ELA	51	50	42
Percent of Scoring Satisfactory or Above/Math	64	62	54

Percent of Scoring Satisfactory or Above/Science	55	50	58

School Grades History

2018	B	2014	B
2017	B	2013	C
2016	C	2012	C
2015	C	2011	B

Professional Qualifications of Teachers
(Source: most recent School Public Accountability Report)

Bachelor's Degree	67.0	76.3	82.6
Master's Degree	30.9	22.9	13.0
Specialist Degree	1.0	0.8	4.3
Doctorate	1.1	0	0
Teaching In-Field	91.7	95.4	85.1
Teaching Out-of-Field	8.3	4.6	14.9

- Total Amount Requested: $125,000
- Applicant has not applied for this proposed project in the past.
    - Pre-Application #148

Financial Status: Gulf District Schools is in sound financial status. Management's Discussion and Analysis report can be found in Attachment 1. The applicant has not applied for bankruptcy in the last ten (10) years.

Eligibility

1. Eligibility is based on the proposed program's preparation of students for future occupations and careers at a 7-12 institution with a campus in the disproportionately affected county of Gulf. The program increases students' skills and knowledge; encourages industry certifications; strengthens career readiness initiatives; and teaches transferable, sustainable workforce skills that are not confined to a single employer.

2. Project Title: Agriscience

Project Description: Funding provided through the generosity of the Triumph program will permit the expansion of a newly initiated agriscience program at Wewahitchka High School into a viable industry certification option. The program is in its infancy with one class of agritechnology and one class of agriscience being taught as electives this school year. The

instructor has completed all certification requirements and is now eligible to see students through the complete industry certification process.

Currently, a traditional classroom is used to teach both the agriculture courses and science classes. Plants are being grown in buckets on the lawn area outside the classroom. Implements are haphazardly propped in corners as adequate appropriate storage is not available. Providing the proper equipment and storage would ensure greater success of the program.

Agritechnology is comprehensive in nature and in addition to the production of crops, it includes elements of animal husbandry, mechanics including small engine repair, and carpentry consisting of basic construction techniques. In short, it the curriculum teaches a variety of skills that would make a person more employable not only in an agriculture-based profession, but in a number of others as well.

With the recent land purchase by Deseret Cattle and Timber in the Wewahitchka area. The company is rapidly becoming established and promises employment opportunities for qualified applicants. The installation of a full-scale agriculture program at the high school level would ensure local residents are among the applicant pool.

Gulf District Schools has applied for a grant through Triumph Gulf Coast that would, if acquired, fund the implementation of an unmanned aircraft (drone) industry certification program at Port St. Joe High School. In addition to the initial implementation at PSJHS during the first year, that grant project will be adapted for WHS to support agriculture applications (soil and field analysis, livestock and crop monitoring, health assessment, etc.) as the area of agriscience pathways are expanded for students. Students enrolled in agriscience courses would be able to obtain additional certification in Agricultural Use of UAS Technology. The purpose of this course is to provide students who have completed or are currently completing an occupational completion point (OCP) in an agricultural program, a capstone experience in UAS Technology for agriculture. It is designed to enhance competencies in the areas of agricultural science and UAS technology. Laboratory-based activities are an integral part of the course and include the safe use and application of appropriate technology, scientific testing and observation equipment.

In addition to the industry certifications offered through agritechnology classes, the circumstances would be ripe for the establishment of a chapter of the Future Farmers of America (FFA). FFA is a national organization that makes a positive difference in the lives of students by developing their potential for premier leadership, personal growth and career success through agriculture education.

Project Location:

Wewahitchka High School
1 Gator Circle
Wewahitchka, Florida 32465

Proposed Timeline:

September 2018:
- submit application to Triumph board

September – December 2018:
- purchase equipment and supplies per board approved budget upon acquisition of budget

January 2019:
- introduce UAS curriculum

May 2019:
- first cohort of agriscience students complete course work and obtain industry certification

The program will be in the disproportionately affected county of Gulf, but will it effect will be felt in all surrounding counties as well.

3. Transformational Effect

Northwest Florida FORWARD is a thirteen-county regional strategic initiative that focuses on promoting economic growth and vitality. This project shares in its mission and goals.

The proposed project will promote a transformational effect by:
- Allowing students to develop assets and skills and become a workforce for growing area businesses
- Establishes an employer-driven workforce training initiative
- Expanding work-based learning and career exploration opportunities for students
- Developing employability skills to reduce employment barriers
- Strengthening the area's economy through enticing new businesses to the area and supporting the expansion of existing businesses
- Encouraging entrepreneurship and innovations which promote future economic growth
- Creating an area appeal to both residents and visitors and entice a new generation of talented and creative individuals and companies

The economic future of any area depends upon the workforce available in that area. Career and technical education programs like that proposed here are crucial to creating that workforce. Economic development leaders work to encourage new companies to locate in the area, bringing employment opportunities to local communities. These efforts are admirable, but make it of vital importance that training opportunities are provided to the local workforce if they are to be successful and economic progress to occur. Entering companies must be provided a well-trained talent pool in order to seize their opportunity to expand in the area.

4. Viability Data

The objective of the program is to increase the output of transferable skills in order to increase economic benefits to the area. The program will have an impact locally and will create a return on investment in both human capital and in increased educational opportunities. The program will be inherently viable as it is fully integrated into the organizational structure of the schools in the district. That viability will be demonstrated by the following data:

- Student enrollment
- Industry certifications earned
- Graduation rate
- Graduate placement in a related business and/or continuance in post-secondary program

The program will be held to all accountability measures established by FDOE and the Gulf District School Board.

5. Long-Term Measures of Impact

Long-term impact will be measured by comparing the demand for related occupations, employment rates, and educational attainment rates for the county. It is anticipated that the proposed project will have a positive impact on these indicators.

6. Sustainability

A number of factors contribute to the sustainability of the proposed project whose implementation is in direct response to identified needs within the community. Gulf District School has a proven infrastructure and the capacity to sustain the proposed plan. The maintenance, staffing, and utilities will be assumed by the district. The financial management procedures will be consistent with the policies and procedures of the district and in compliance with Florida Department of Education (FDOE) regulations. FDOE student enrollment funding ensures long-term sustainability. Schools are funded through the Florida Education Finance Program (FEFP) and external sources such as grants and entitlements. However, there will be continued efforts to obtain additional funding through business partnerships and grant opportunities in an effort to enhance the program.

7. Measurement deliverables will include:
   - Number of students earning industry certification
   - Number of students completing courses in the career pathway and qualify for a Bright Futures CTE scholarship
   - Graduation rate
   - Number of graduates finding employment in related field or furthering their studies in the field

Priorities

1. The proposed project will meet the following priorities:
   - Increase household income in the disproportionately affected county of Gulf above the national average household income.
   - Leverage or further enhance key regional assets, including educational institutions, research facilities, and military bases.

2. The proposed project meets the priorities listed above by:

- The proposed training program will lead to entry-level positions in the field that are above the minimum wages and to occupation on the high demand list developed by the Florida Department of Economic Opportunity
- The proposed program will serve as a foundation for related post-secondary majors resulting in higher salaries and increased income potential
- The proposed project leverages collaborative relationships with community and business partners as well as economic development leaders and initiatives assuring high-quality outcomes
- The district is able to gather data on the well-defined outcome measures

3. The proposed project meets the discretionary priorities identified by the Board by:
   - The proposed project is aligned with a regional objective to enhance CTE opportunities and its unique nature is unduplicated by any other area high school
   - The project would result in a workforce pool available beyond the district and throughout the region
   - Gulf District schools possesses the organizational ability to efficiently and effectively implement the proposed project

4. The proposed project will be located in the disproportionately affected county of Gulf.

5. & 6. This proposed project was not on a list of proposed projects and programs submitted to Triumph Gulf Coast, Inc. by any of the other disproportionately affected counties as a project and program located within its county and has not been recommended by any other county's Board of County Commissioners. Its unique nature is unduplicated by any other area high school

Approvals and Authority

1. If awarded grant funds based on this proposal, approval must be obtained from the Gulf County School Board prior to executing an agreement with Triumph Gulf Coast, Inc.

2. The Gulf County School board may hold special meetings as needed and is scheduled to meet on the following dates:

Tuesday, September 11, 2018
Tuesday, October 2, 2018
Thursday, October 8, 2018
Tuesday, November 20, 2018
Tuesday, December 4, 2018 (tentative)
Tuesday, January 8, 2019 (tentative)
Tuesday, February 5, 2019 (tentative)

3. Timeline & Milestones: See Proposed Timeline on page 7

The program will be in the disproportionately affected county of Gulf, but will it effect will be felt in all surrounding counties as well.

4. The undersigned, Lori Price, Assistant Superintendent for Instruction, has been given all necessary authority to execute this proposal on behalf of the applying entity, Gulf County School Board. See Attachment 2

Funding and Budget

1. $ 125,000 is being sought to purchase equipment crucial to program success and ensure that it is soundly established. Once program is established it will become self-sustaining and continue indefinitely.

2. The requested amount represents 70% of the total project cost.

3. The information below is provided by the Bureau of Labor and Statistics.

Farmers, Ranchers, other agricultural managers	$69,620	1,028,700
Agricultural and Food Service Technicians	$39.910	27,500
Agricultural and Food Scientist	$62,910	43,000
Agricultural Engineers	$74,780	2,700
Agricultural Workers	$23,730	856,300

4. The potential award would supplement, but not supplant existing funding.

5. Project Budget

A. Project Costs:

Instructor salaries/benefits (contributed by Gulf District Schools)	$55,000
Tractor and attachments	$35,000
Greenhouse	$53,000
Storage sheds	$20,000
Tools	$10,000
Materials & supplies	$7,000
Total Project Costs:	**$175,000**

B. Other Project Funding Sources:

Gulf District Schools' contributions to this project total approximately $55,000 each year of program operation.

Total Amount Requested: $125,000

C. Budget Narrative

The applicant understands and acknowledges:

- By statute, the award contract must include provisions requiring a performance report on the contracted activities, must account for the proper use of funds provided under the contract, must include provisions for recovery of awards in the event the award was based upon fraudulent information or the awardee is not meeting the requirements of the award.
- That the applicant must regularly report to Triumph Gulf Coast, Inc. the expenditure of funds and the status of the project on a schedule determined by Triumph Gulf Coast, Inc.
- That the applicant will make books and records and other financial data available to Triumph Gulf Coast, Inc. as necessary to measure and confirm performance metrics and deliverables.
- That Triumph Gulf Coast, Inc. reserves the right to request additional information from the applicant concerning the proposed project.

ADDENDUM FOR WORKFORCE TRAINING PROPOSAL

1. Program Requirements

A. This proposal supports a program that prepares students for future occupations and careers at K-12 institution at a campus located in the disproportionately affected county of Gulf. That campus is Wewahitchka High School located at 1 Gator Circle, Wewahitchka, Florida.

B. The proposed program will:
- Encourage industry certifications
- Strengthen career readiness initiatives

Efforts to improve the economy of the area are reliant upon the workforce available in that area. The proposed career and technical education program can be instrumental in creating that workforce. Economic development leaders encourage new companies to bring employment opportunities to the communities. It is of vital importance that training opportunities are provided to the local workforce if economic progress to occur. Offering industry certifications at the high school level will result in graduates prepared to become a viable part of the area's workforce.

C. This proposed program will provide participants in the disproportionately affected county of Gulf with transferable, sustainable workforce skills, but will not confine them to a single employer. Curriculum and instruction will emphasize broad, transferable skills and stress the understanding of all aspects of the UAS growing industry. It will incorporate elements of the industry such as planning, management, finance, technical and production skills, underlying principles of technology, labor issues, community concerns, as well as health, safety and environmental issues. It provides technical skill proficiency, and includes competency-based applied learning that contributes to academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills.

D. The Proposed program will operate in the disproportionately affected county of Gulf.

E. This program will increase the output of transferable skills thus increasing economic benefits to the area. It will have a direct impact on Gulf County and will create a return on investment in both human capital and in increased educational opportunities. The program will be inherently viable as it is fully integrated into the organizational structure of the schools in the district. That viability will be seen in graduate placement in a related business and/or continuance in post-secondary program. Long-term impact will be measured by comparing the demand for related occupations, employment rates, and educational attainment rates for the county. It is anticipated that the proposed project will have a positive impact on these indicators.

2. Additional Information

A. The proposed project is not an expansion of an existing training program.

B. Training will be delivered by certified instructors in a classroom setting using both an online curriculum and traditional textbooks. There is a large hands-on field component as well.

C. Anticipated enrollment will be 35 students per year

D. While this proposal permits the initial implementation of the agriscience program, the program will become self-sustaining and remain viable for an extended period.

E. Several factors contribute to the sustainability of the proposed project whose implementation is in direct response to identified needs within the community. Gulf District School has a proven infrastructure and the capacity to sustain the proposed plan. The maintenance, staffing, and utilities will be assumed by the district. The financial management procedures will be consistent with the policies and procedures of the district and in compliance with Florida Department of Education (FDOE) regulations. FDOE student enrollment funding ensures long-term sustainability. Schools are funded through the Florida Education Finance Program (FEFP) and external sources such as grants and entitlements. However, there will be continued efforts to obtain additional funding through business partnerships and grant opportunities in an effort to enhance the program.

F. Certifications:

- Agritechnology
- Agriscience Foundations
- Agricultural Use of UAS Technology

It is anticipated that 80% of students enrolled in the program will achieve one or more industry certifications.

G. Gulf District Schools' contributions to this project total approximately $55,000 each year of program operation.

Attachment 1: Management's Discussion and Analysis

GULF DISTRICT SCHOOL BOARD

MANAGEMENT'S DISCUSSION AND ANALYSIS

The management of the Gulf County District School Board has prepared the following discussion and analysis to (a) assist the reader in focusing on significant financial issues; (b) provide an overview and analysis of the District's financial activities; (c) identify changes in the District's financial position; (d) identify material deviations from the approved budget; and (e) highlight significant issues in individual funds.

The information contained in the Management's Discussion and Analysis (MD&A) is intended to highlight significant transactions, events, and conditions and should be considered in conjunction with the District's financial statements and notes to financial statements.

FINANCIAL HIGHLIGHTS

Key financial highlights for the 2016-17 fiscal year are as follows:

- The District's net position decreased by $23,958.92 as a result of normal activity.
- The General Fund (the primary operating fund) in the fund financial statements reflects revenues and other financing sources that exceeded expenditures and other financing uses by $840,075. This may be compared to last fiscal year's results in which General Fund revenues and other financing sources exceeded expenditures and other financing uses by $391,782.
- General revenues in the government-wide statements account for $20,241,657 of total revenues. Program specific revenues in the form of charges for services, grants, or contributions account for $1,154,341 of total revenues.
- The District has $21,419,957 in expenses, including $1,154,341 that are offset by program specific charges for services, grants, or contributions. General revenues, primarily from ad valorem taxes and the Florida Education Finance Program (FEFP), provided resources for the remaining programs.

OVERVIEW OF FINANCIAL STATEMENTS

The basic financial statements consist of three components: (1) government-wide financial statements; (2) fund financial statements; and (3) notes to financial statements. This report also includes supplementary information intended to furnish additional details to support the basic financial statements.

Government-wide Financial Statements

The government-wide financial statements provide both short-term and long-term information about the District's overall financial condition in a manner similar to those of a private-sector business. The statements include a statement of net position and a statement of activities that are designed to provide consolidated financial information about the governmental activities of the District presented on the accrual basis of accounting. The statement of net position provides information about the District's financial position, its assets, deferred outflows of resources, liabilities, and deferred inflows of resources, using an economic resources measurement focus. Assets plus deferred outflows of resources, less liabilities and deferred inflows of resources equals net position, which is a measure of the District's

financial health. The statement of activities presents information about the change in the District's net position, the results of operations, during the fiscal year.

All of the District's activities and services are reported in the government-wide financial statements as governmental activities. The District's governmental activities include its education programs: basic, vocational, adult, and exceptional education. Support functions such as transportation and administration are also included. Local taxes and the State's education finance program provide most of the resources that support these activities.

Over a period of time, changes in the District's net position are an indication of an improving or deteriorating financial condition. This information should be evaluated in conjunction with nonfinancial factors, such as changes in the District's property tax base and student enrollment.

Fund Financial Statements

Fund financial statements are one of the components of the basic financial statements. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The District uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements and prudent fiscal management. Certain funds are established by law while others are created by legal agreements, such as bond covenants. Fund financial statements provide more detailed information about the District's financial activities, focusing on its most significant or "major" funds rather than fund types. This is in contrast to the entitywide perspective contained in the government-wide statements. All of the District's funds may be classified within one of the broad categories discussed below.

Governmental Funds: Governmental funds are used to account for essentially the same functions reported as governmental activities in the government-wide financial statements. However, the governmental funds utilize a spendable financial resources measurement focus rather than the economic resources measurement focus found in the government-wide financial statements. The financial resources measurement focus allows the governmental fund financial statements to provide information on near-term inflows and outflows of spendable resources, as well as on balances of spendable resources available at the end of the fiscal year.

The governmental fund statements provide a detailed short-term view that may be used to evaluate the District's near-term financing requirements. This short-term view is useful when compared to the long-term view presented as governmental activities in the government-wide financial statements. To facilitate this comparison, both the governmental funds balance sheet and the governmental funds statement of revenues, expenditures, and changes in fund balances provide a reconciliation of governmental funds and governmental activities.

The governmental funds balance sheet and statement of revenues, expenditures, and changes in fund balances provide detailed information about the District's most significant funds. The District's major fund is the General Fund and the Special Revenue Fund - Other. Data from the other governmental funds are combined into a single, aggregated presentation.

The District adopts an annual appropriated budget for its governmental funds. A budgetary comparison schedule has been provided for the General Fund and the Special Revenue Fund – Other to demonstrate compliance with the budget.

Fiduciary Funds: Fiduciary funds are used to report assets held in a trustee or fiduciary capacity for the benefit of external parties, such as student activity funds. Fiduciary funds are not reflected in the government-wide statements because the resources are not available to support the District's own programs. In its fiduciary capacity, the District is responsible for ensuring that the assets reported in these funds are used only for their intended purposes.

The District uses private-purpose trust funds to account for scholarship funds established by private donors, and uses agency funds to account for resources held for student activities and groups.

Notes to Financial Statements

The notes provide additional information that is essential for a full understanding of the data provided in the government-wide and fund financial statements.

Other Information

In addition to the basic financial statements and accompanying notes, this report also presents required supplementary information (RSI) concerning the District's progress in funding its obligation to provide other postemployment benefits to its employees, and other RSI relating to pension reporting.

GOVERNMENT-WIDE FINANCIAL ANALYSIS

This section is used to present condensed financial information from the government-wide statements that compares the current fiscal year to the prior fiscal year.

Net position over time may serve as a useful indicator of a government's financial position. The following is a summary of the District's net position as of June 30, 2017, compared to net position as of June 30, 2016:

Net Position, End of Year

	Governmental Activities	
	6-30-17	6-30-16
Current and Other Assets	$ 2,770,765.97	$ 2,104,404.14
Capital Assets	15,158,833.29	15,343,913.67
Total Assets	17,929,599.26	17,448,317.81
Deferred Outflows of Resources	4,482,741.45	2,050,387.00
Long-Term Liabilities	14,091,841.18	9,946,209.69
Other Liabilities	118,441.94	185,775.21
Total Liabilities	14,210,283.12	10,131,984.90
Deferred Inflows of Resources	408,954.58	1,357,512.00
Net Position:		
Net Investment in Capital Assets	15,040,833.29	15,135,913.69
Restricted	448,621.89	364,811.21
Unrestricted Deficit	(7,696,352.17)	(7,491,516.97)
Total Net Position	$ 7,793,103.01	$ 8,009,207.93

The largest portion of the District's net position is investment in capital assets (e.g., land; buildings; furniture, fixtures, and equipment; improvements other than buildings; and motor vehicles), less any related debt still outstanding. The District uses these capital assets to provide services to students; consequently, these assets are not available for future spending.

The restricted portion of the District's net position represents resources that are subject to external restrictions on how they may be used. The unrestricted net position deficit of $7,696,352.17 is primarily the result of reporting employer's proportionate share of the defined benefit pension plans offered by the State of Florida. The District's portion of these pension plans for the Florida Retirement System (FRS) and Health Insurance Subsidy (HIS) pension liabilities were $7,042,691 and $3,869,969, respectively, at June 30, 2017.

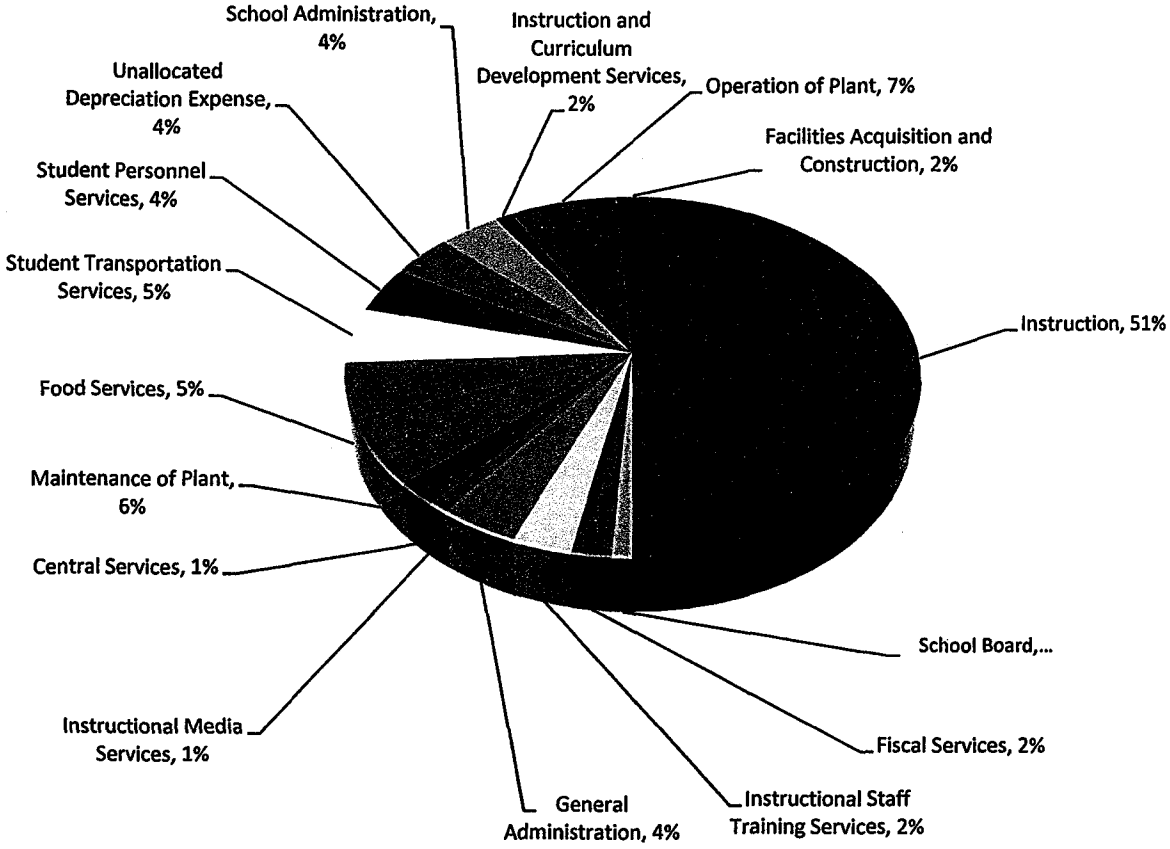
The key elements of the changes in the District's net position for the fiscal years ended June 30, 2017, and June 30, 2016, are as follows:

Operating Results for the Fiscal Year Ended

	Governmental Activities	
	6-30-17	6-30-16
Program Revenues:		
Charges for Services	$ 313,239.46	$ 334,551.35
Operating Grants and Contributions	606,825.06	597,009.32
Capital Grants and Contributions	234,276.17	178,455.16
General Revenues:		
Property Taxes, Levied for Operational Purposes	9,877,339.61	9,885,633.70
Property Taxes, Levied for Capital Projects	1,047,364.58	820,563.39
Grants and Contributions Not Restricted to Specific Programs	8,417,653.15	7,620,689.47
Unrestricted Investment Earnings	25,434.92	10,827.79
Miscellaneous	873,865.10	399,132.61
Total Revenues	21,395,998.05	19,846,862.79
Functions/Program Expenses:		
Instruction	10,884,700.06	9,532,166.43
Student Personnel Services	1,069,332.80	873,714.77
Instructional Media Services	281,931.72	261,052.85
Instruction and Curriculum Development Services	492,116.12	360,661.53
Instructional Staff Training Services	435,216.81	408,425.78
Instructional-Related Technology	46,309.81	40,014.15
Board	208,040.94	209,599.29
General Administration	796,492.16	773,035.16
School Administration	918,449.29	858,216.28
Facilities Acquisition and Construction	294,557.89	310,854.32
Fiscal Services	366,100.05	332,855.05
Food Services	947,707.12	960,041.14
Central Services	208,720.60	187,870.62
Student Transportation Services	1,092,039.57	1,013,921.36
Operation of Plant	1,386,770.89	1,373,712.43
Maintenance of Plant	1,334,481.03	1,095,911.29
Administrative Technology Services	73,341.87	65,791.07
Unallocated Interest on Long-Term Debt	14,476.70	22,915.72
Unallocated Depreciation Expense	761,317.54	771,922.54
Total Functions/Program Expenses	21,612,102.97	19,452,681.78
Change in Net Position	(216,104.92)	394,181.01
Net Position, Beginning of Year	8,009,207.93	7,615,026.92
Net Position - Ending	$ 7,793,103.01	$ 8,009,207.93

Revenues from local sources for current operations are primarily received through property taxes. The increase in property taxes is related to the increase in the underlying property values within the county.

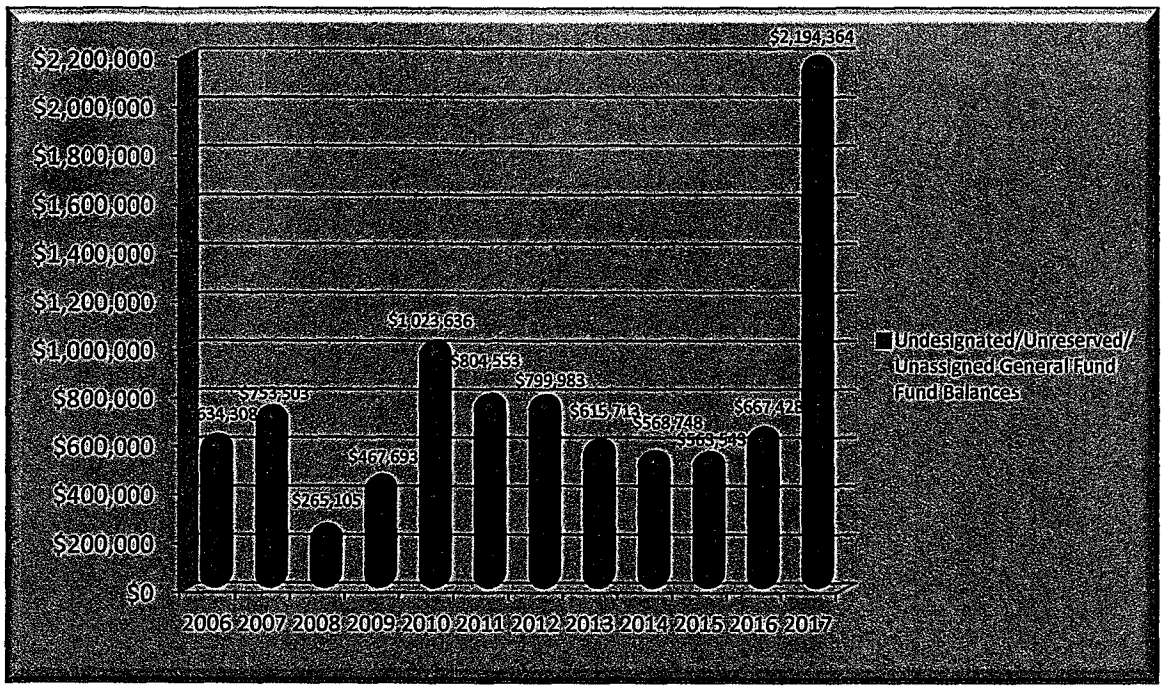
Instruction expenses represent 51 percent of total governmental expenses in the 2016-17 fiscal year. The following graph depicts the distribution of expenses of the District as a whole.



FINANCIAL ANALYSIS OF THE DISTRICT'S FUNDS

This section provides an analysis of the fund balances of the District's major fund.

- ***Governmental Funds***. The Board has established a provision, in its strategic plan, to provide for an undesignated fund balance at fiscal year-end of 5 percent of FEFP funding. For comparison purposes, unassigned fund balance, implemented by GASB Statement No. 54, is essentially equivalent to the unreserved, undesignated fund balance classification required before GASB Statement No. 54. The following graph shows the undesignated, unreserved/unassigned fund balance of the General Fund from the 2005-06 through 2016-17 fiscal years. The increase from the 2008-09 fiscal year to the 2009-10 fiscal year was due to the District levying a voted school tax for operating purposes of 1 mill, which was extended through the 2016-17 fiscal year. The decrease in the 2010-11 to 2014-15 fiscal years occurred from lower tax revenues due to lower assessed property values. The District is currently experiencing an increase due to property value increases.



The General Fund total fund balance increased $840,075.10 to $2,506,872.22 at June 30, 2017. General Fund revenues totaled $17,218,406.81, which was an increase from the prior fiscal year. The increase in revenue is mainly due to the increase in local property taxes resulting from rising property values. General Fund expenditures totaled $17,527,993.18. The primary reason for the increase in fund balance was due to the sale of Highland View Elementary.

General Fund Budgetary Highlights

All budget variances for the General Fund were considered normal budget fluctuations.

Capital Assets and Long-Term Debt

Capital Assets

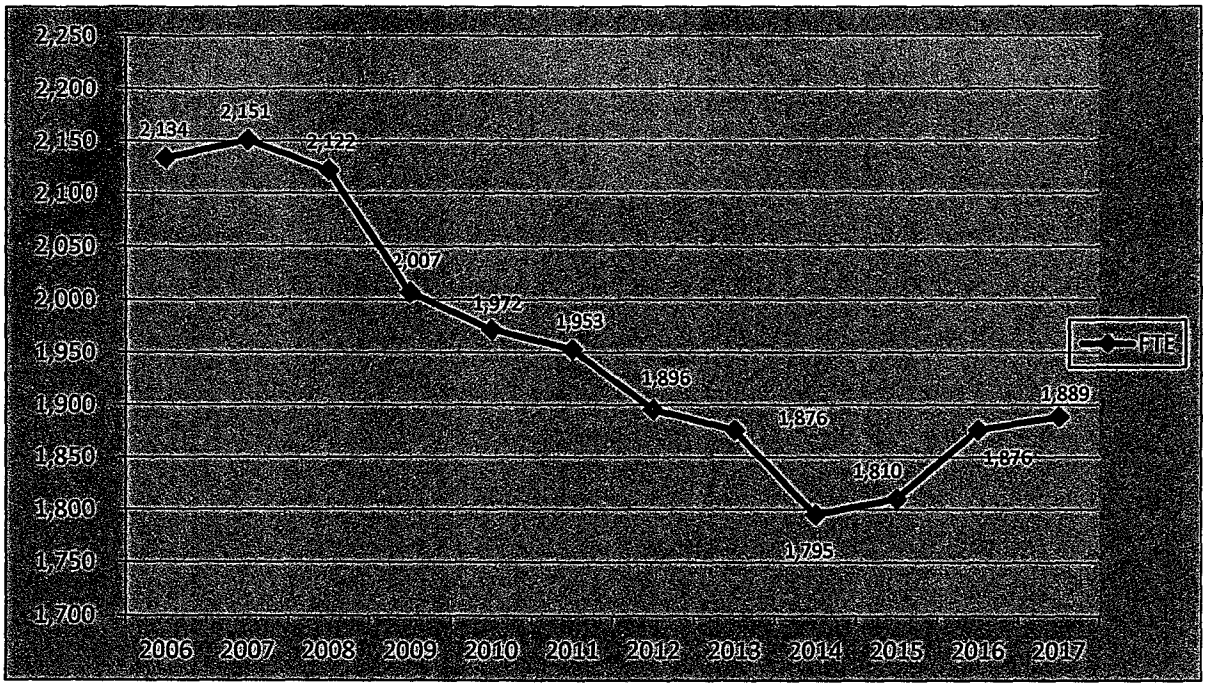
There were no major capital asset projects during the year. Additional information on the District's capital assets can be found in Note III.C. to the financial statements.

Long-Term Debt

There were no issuance or refunding of debt during the fiscal year. Additional information on the District's long-term debt can be found in Note III.H. to the financial statements.

Other Matters of Significance

Student Enrollment and Funding. Revenues from State sources comprise a significant sources of total available resources of the District. Revenues from State sources for current operations are primarily from the FEFP administered by the Florida Department of Education (FDOE) under the provisions of Section 1011.62, Florida Statutes. In accordance with this law, the District determines and reports the number of full-time equivalent (FTE) students and related data to the FDOE. As shown in the following chart, the District experienced an increase in FTE during the 2016-17 fiscal year.



REQUESTS FOR INFORMATION

This report is designed to provide citizens, taxpayers, customers, investors, and creditors with a general overview of the Gulf County District School Board's finances and to demonstrate compliance and accountability for its resources. Questions concerning information provided in the MD&A or other required supplementary information, and financial statements and notes thereto, or requests for additional financial information should be addressed to the Director of Finance, Gulf County District School Board, 150 Middle School Road, Port St. Joe, Florida, 32456.

Attachment 2: Approval and Authority document

JIM NORTON
SUPERINTENDENT

Gulf
DISTRICT SCHOOLS

150 Middle School Road
Port St. Joe, FL 32456
850-229-8256 • 850-639-2871
Fax: 850-229-6089

July 31, 2018

To Whom It May Concern:

This is to verify that Lori Price, Assistant Superintendent for Instruction for Gulf District Schools has been awarded all necessary authority to execute proposals on behalf of Gulf District Schools to Triumph Gulf Coast, Inc. and may apply for funding for proposed projects and programs to benefits the students throughout the district. Your consideration of those proposals is greatly appreciated.

Respectfully,

Jim Norton, Superintendent

Brooke Wooten, Board Chair

Attachment 3: Curriculum Frameworks

Agritechnology

Agriscience Foundations

Agricultural Use of UAS Technology

Florida Department of Education
Curriculum Framework

Program Title: **Agritechnology**
Program Type: **Career Preparatory**
Career Cluster: **Agriculture, Food and Natural Resources**

Secondary – Career Preparatory	
Program Number	8106800
CIP Number	0101039901
Grade Level	9-12, 30, 31
Standard Length	3 credits
Teacher Certification	Refer to the **Program Structure** section.
CTSO	FFA
SOC Codes (all applicable)	19-4011 - Agricultural and Food Science Technicians
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Purpose

This program offers a sequence of courses that provides coherent and rigorous content aligned with challenging academic standards and relevant technical knowledge and skills needed to prepare for further education and careers in the Agriculture, Food and Natural Resources career cluster; provides technical skill proficiency, and includes competency-based applied learning that contributes to the academic knowledge, higher-order reasoning and problem-solving skills, work attitudes, general employability skills, technical skills, and occupation-specific skills, and knowledge of all aspects of the Agriculture, Food and Natural Resources career cluster.

The content includes but is not limited to instruction in animal and plant production and processing; agriculture marketing; agricultural mechanics; employability skills; mathematics; basic science; biological sciences; communications; and human-relations skills.

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

Program Structure

This program is a planned sequence of instruction consisting of one occupational completion points. Planned and Supervised Agricultural Experiences (SAE) must be provided through one or more of the following: (1) directed laboratory experience, (2) student project, (3) placement for experience, or (4) cooperative education.

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 secondary program structure:

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirements
A	8106810	Agriscience Foundations 1	AGRICULTUR 1 @2	1 credit	19-4011	3	EQ
	8106820	Agritechnology 1		1 credit		2	VO
	8106830	Agritechnology 2		1 credit		2	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

Academic Alignment Table

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
Agriscience Foundations	29/87 33%	18/80 23%	55/83 66%	11/69 16%	36/67 54%	30/70 42%	20/69 29%	49/82 60%	25/66 38%	38/74 51%	12/72 16%
Agritechnology 1	9/87 10%	9/80 11%	37/83 45%	10/69 14%	27/67 40%	19/70 27%	10/69 14%	28/82 34%	20/66 30%	27/74 36%	10/72 14%
Agritechnology 2	27/87 31%	29/80 36%	18/83 22%	29/69 42%	12/67 18%	42/70 60%	26/69 38%	14/82 17%	36/66 56%	15/74 20%	29/72 40%

** *Alignment pending review* # *Alignment attempted, but no correlation to academic course*

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
Agriscience Foundations	14/67 21%	4/75 5%	8/54 15%	11/46 24%	11/45 24%	11/45 24%	11/45 24%
Agritechnology 1	**	**	**	**	**	**	**
Agritechnology 2	**	**	**	**	**	**	**

** *Alignment pending review* # *Alignment attempted, but no correlation to academic course*

Florida Standards for Technical Subjects

Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education.

Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program. To access these standards, please click on the following link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/FloridaStandardsTechSubjects.rtf.

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. To access an ELL supporting document which delineates performance definitions and descriptors, please click on the following link: http://www.cpalms.org/uploads/docs/standards/eld/SI.pdf.
For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org

National Standards (NS)

Some or all of the courses in this program have been aligned with Industry or National Standards. If so, the standards have been identified and cross walked with the corresponding CTE standard and/or benchmark. National Standards can be found by accessing the following link:
https://www.ffa.org/SiteCollectionDocuments/council_afnr_career_cluster_content_standards.pdf

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.

2. Apply appropriate academic and technical skills.

3. Attend to personal health and financial well-being.

4. Communicate clearly, effectively and with reason.

5. Consider the environmental, social and economic impacts of decisions.

6. Demonstrate creativity and innovation.

7. Employ valid and reliable research strategies.

8. Utilize critical thinking to make sense of problems and persevere in solving them.

9. Model integrity, ethical leadership and effective management.

10. Plan education and career path aligned to personal goals.

11. Use technology to enhance productivity.

12. Work productively in teams while using cultural/global competence.

Standards

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

01.0 Describe the history of agriculture and its influence on the global economy.
02.0 Practice agriscience safety skills and procedures.
03.0 Apply scientific and technological principles to agriscience issues.
04.0 Apply environmental principles to the agricultural industry.
05.0 Investigate and utilize basic scientific skills and principles in plant science.
06.0 Investigate and utilize basic scientific skills and principles in animal science.
07.0 Demonstrate the use of agriscience tools, equipment, and instruments.
08.0 Demonstrate agribusiness, employability and human relation skills.
09.0 Apply leadership and citizenship skills.
10.0 Discuss components of food safety and handling practices in agriculture.
11.0 Explore the scope of the agriscience industry.
12.0 Determine proper animal health and nutrition.
13.0 Identify components of reproduction.
14.0 Identify procedures in animal production.
15.0 Develop procedures for exhibiting animals.
16.0 Compare, select, and use plant production systems.
17.0 Investigate proper methods to fertilize plants and crops.
18.0 Operate, maintain, and service facilities, tools, and equipment.
19.0 Apply principles of agribusiness finance.
20.0 Students evaluate the importance of the food and fiber system to understand the impact on global economy.
21.0 Examine the scope of career opportunities in and the importance of agriculture to the economy.
22.0 Analyze the scope of the Agriscience industry.
23.0 Recommend steps for proper animal health and nutrition.
24.0 Select, and use plant production systems.
25.0 Fertilize plants and crops.
26.0 Irrigate plants and crops.
27.0 Control plant pests.
28.0 Maintain, and service facilities, tools, and equipment.
29.0 Describe procedures for harvesting and marketing agricultural products.
30.0 Compare principles of agribusiness finance.
31.0 Explain the components of the American business system.
32.0 Investigate agricultural cooperatives structure and function.

Florida Department of Education
Student Performance Standards

Course Title: Agriscience Foundations 1
Course Number: 8106810
Course Credit: 1

Course Description:

This course is designed to develop competencies in the areas of agricultural history and the global impact of agriculture; career opportunities; scientific and research concepts; biological and physical science principles; environmental principles; agriscience safety; principles of leadership; and agribusiness, employability, and human relations skills in agriscience. Laboratory-based activities are an integral part of this course. These include the safe use and application of appropriate technology, scientific testing and observation equipment.

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental quality, and safety procedures will be an integral part of this course. Students will interact with materials and primary sources of data or with secondary sources of data to observe and understand the natural world. Students will develop an understanding of measurement error, and develop the skills to aggregate, interpret, and present the data and resulting conclusions. Equipment and supplies will be provided to enhance these hands-on experiences for students. A minimum of 20% of classroom time will be dedicated to laboratory experiences.

Abbreviations:
FS-M/LA = Florida Standards for Math/Language Arts
NGSSS-Sci = Next Generation Sunshine State Standards for Science

Note: This course is pending alignment in the following categories: FS-M

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
01.0	Describe the history of agriculture and its influence on the global economy--The student will be able to:		SC.912.E.5.7; SC.912.L.14.1; SC.912.L.15.13; SC.912.L.17.1, 5, 13, 18, 20; SC.912.N.4.2;	
01.01	Evaluate and explain emerging trends and the opportunities they may create within the AFNR systems.	LAFS.910.W.3.7 LAFS.1112.W.3.7		CS.01.01.02.c
01.02	Assess the economic impact of an AFNR system on a local, state, national and global level.	LAFS.910.W.3.8 LAFS.1112.W.3.8		CS.02.02.03.b
01.03	Identify significant career patterns/shifts in the history of the agricultural industry.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.01.01.01.a

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
01.04	Examine the role of the agricultural industry in the interaction of population, food, energy, and the environment.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.06.02.01.a
02.0	Practice agriscience safety skills and procedures--The student will be able to:		SC.912.L.14.6; SC.912.L.15.4; SC.912.L.16.7, 10; SC.912.L.17.12, 14, 15, 16, 18; SC.912.N.1.1, 2, 3; SC.912.N.4.2; SC.912.P.8.7;	
02.01	Identify the common causes and prevention of accidents in agriscience operations.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.03.03.03.a
02.02	Extract and utilize pertinent information from a container label and/or Safety Data Sheet (SDS) following Environmental Protection Agency (EPA), Worker Protection Standard, and Occupational Safety and Health Agency (OSHA) regulations.	LAFS.910.RI.1.1 LAFS.1112.RI.1.1		CS.03.04.03.a
02.03	Identify proper disposal of hazardous waste materials and biohazards.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		ESS.04.01.02.c
02.04	Describe emergency procedures for: basic first aid, CPR, chemical spills, fire extinguisher use	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.03.03.03.b
03.0	Apply scientific and technological principles to agriscience issues--The student will be able to:		SC.912.E.7.8; SC.912.L.14.2, 3, 4, 5, 6, 8; SC.912.L.15.14, 15; SC.912.L.16.1, 2, 3, 4, 7, 9, 10, 12, 14, 15, 16, 17; SC.912.N.1.1, 2, 3, 4, 6, 7; SC.912.N.2.2, 5; SC.912.N.3.1; SC.912.N.4.1;	
03.01	Employ scientific measurement skills.			
03.02	Demonstrate safe and effective use of common laboratory equipment.			ESS.01.02.01.b
03.03	Identify the parts and functions of plant and animal cells.	LAFS.910.RI.1.1 LAFS.1112.RI.1.1		
03.04	Describe the phases of cell reproduction.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
03.05	Implement the scientific method and science process skills through	LAFS.910.W.2.4		

CTE Standards and Benchmarks			FS-M/LA	NGSSS-Sci	National Standards
		the design and completion of an agriscience research project.	LAFS.1112.W.2.4 LAFS.910.W.3.8 LAFS.1112.W.3.8		
	03.06	Interpret, analyze, and report data.	LAFS.910.W.2.4 LAFS.1112.W.2.4		BS.02.01.01.b
	03.07	Investigate DNA and genetics applications in agriscience including the theory of probability.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		BS.01.01.01.a
	03.08	Evaluate advances in biotechnology that impact agriculture (e.g. transgenic crops, biological controls, etc.).	LAFS.910.W.3.7 LAFS.1112.W.3.7		BS.03.01.03.b
04.0	Apply environmental principles to the agricultural industry--The student will be able to:			SC.912.E.6.1, 4; SC.912.E.7.1, 4, 6, 7, 8; SC.912.L.17.4, 7, 8, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20; SC.912.L.18.12	
	04.01	Research how different climactic and geological activity influences agriculture.	LAFS.910.W.3.8 LAFS.1112.W.3.8		NRS.01.03.02.b
	04.02	Describe various ecosystems as they relate to the agriculture industry.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		
	04.03	Describe the environmental resources (soil, water, air) necessary for agriculture production.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		AS.08.02.01.a
	04.04	Identify regulatory agencies that impact agricultural practices.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS910.L.3.6 LAFS.1112.L.3.6		NRS.02.01.02.a
	04.05	Apply Best Management Practices that enhance the natural environment.	LAFS.910.W.2.4 LAFS.1112.W.2.4		
	04.06	Identify conservation practices related to natural resources.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.03.02.02.b
05.0	Investigate and utilize basic scientific skills and principles in plant science--The student will be able to:			SC.912.E.5.4; SC.912.L.14.2, 3, 5, 6, 7, 8, 9, 53; SC.912.L15.9, 14, 15; SC.912.L.17.6, 12, 16, 17, 19; SC.912.L.18.7, 8, 9; SC.912.P.8.5, 7;	
	05.01	Identify and describe the specializations within the plant science industry.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
		LAFS.1112.W.2.4		
05.02	Categorize plants based on specific characteristics according to industry and scientific standards.	LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.02.01.01.a
05.03	Examine the processes of plant growth including photosynthesis, respiration, transpiration, absorption, transfer, storage, reproduction, etc....	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.02.03.01.a PS.02.03.02.a PS.02.03.05.a
05.04	Identify the nutrients required for plant growth from the periodic table and explain their functions.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.01.02.01.a
05.05	Analyze information from a fertilizer label.	LAFS.910.RI.1.1 LAFS.1112.RI.1.1		PS.01.03.04.b
05.06	Propagate and grow plants through sexual and/or asexual reproduction.			PS.03.01.03.a PS.03.01.01.b
05.07	Investigate the impacts of various pests and propose solutions for their control.	LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.03.03.01.c
05.08	Investigate the nature and properties of food, fiber, and by-products from plants.	LAFS.910.W.2.4 LAFS.1112.W.2.4		
05.09	Explore career opportunities in plant science.	LAFS.910.W.3.7 LAFS.1112.W.3.7		CS.05.01.01.a
06.0	Investigate and utilize basic scientific skills and principles in animal science--The student will be able to:		SC.912.L.14.11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 28, 29, 31, 32, 33, 34, 36, 40, 41, 42, 43, 45, 46, 47, 48, 51; SC.912.L.15.4, 5, 6, 7; SC.912.L.16.3, 4; SC.912.L.17.11, 12, 13, 15, 16, 17, 18, 19;	
06.01	Explain the economic importance of animals and the products obtained from animals.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		
06.02	Analyze commercially important livestock breeds in Florida.	LAFS.910.W.2.4 LAFS.1112.W.2.4		
06.03	Illustrate correct terminologies for animal species and conditions (e.g. age, sex, etc.) within those species.	LAFS.910.L.3.6 LAFS.1112.L.3.6		
06.04	Compare and contrast animal welfare issues.	LAFS.910.W.2.4 LAFS.1112.W.2.4		AS.02.01.01.a

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
		LAFS.910.SL.2.4 LAFS.1112.SL.2.4		
	06.05 Investigate the nature and properties of food, fiber, and by-products from animals.			AS.06.03.03.a
	06.06 Explore career opportunities in animal science.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.SL.2.4 LAFS.1112.SL.2.4		CS.05.01.01.a
07.0	Demonstrate the use of agriscience tools, equipment, and instruments--The student will be able to		SC.912.L.14.4; SC.912.P.12.2, 3, 4, 9;	
	07.01 Select and demonstrate proper use of hand tools in agriculture.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.03.04.02.a
	07.02 Operate service and maintain agriscience equipment, and instruments.			CS.03.04.03.b
	07.03 Manage facilities and supplies.			
08.0	Demonstrate agribusiness, employability and human relation skills--The student will be able to:			
	08.01 Develop, implement, and maintain work based learning through Supervised Agricultural Experiences (SAE).	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.3.7 LAFS.1112.W.3.7 LAFS.910.W.3.8 LAFS.1112.W.3.8 LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.SL.2.4 LAFS.1112.SL.2.4		
	08.02 Utilize a record keeping system to collect, interpret, and analyze data.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.W.2.6 LAFS.1112.W.2.6		
	08.03 Enhance oral communications through telephone, interview and presentation skills.	LAFS.910.SL.2.6 LAFS.1112.SL.2.6		CRP.04.01.02.b
	08.04 Enhance written communication by developing resumes and business letters.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.L.1.1 LAFS.1112.L.1.1 LAFS.910.L.1.2 LAFS.1112.L.1.2		CRP.04.02.02.b
	08.05 Demonstrate interpersonal (nonverbal) communication skills.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
08.06	Demonstrate good listening skills.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.04.03.01.a
09.0	Apply leadership and citizenship skills--The student will be able to:			
09.01	Identify and describe leadership characteristics.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.09.01.01.a
09.02	Identify opportunities to apply acquired leadership skills.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.09.01.02.a
09.03	Identify and demonstrate ways to be an active citizen.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.01.03.02.c
09.04	Participate in community based learning activities.			CRP.01.03.01.a
09.05	Demonstrate the ability to work cooperatively.			CRP.09.03.01.a
09.06	Conduct formal and informal meetings using correct parliamentary procedure skills.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.W.2.6 LAFS.1112.W.2.6		
09.07	Identify the opportunities for leadership development available through the National FFA Organization and/or professional organizations.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
09.08	Develop both a leadership and a career development plan utilizing SMART goals that include 5, 10, and 20 year benchmarks.			CS.05.01.01.b CRP.10.02.02.b
10.0	Discuss components of food safety and handling practices in agriculture - The student will be able to:			
10.01	Demonstrate proper safety precautions and use of personal protective equipment.			FPP.01.01.01.b
10.02	Evaluate the food safety responsibilities that occur along the food supply chain.			FPP.03.03.02.b
10.03	Explain techniques and procedures for the safe handling of food products.			FPP.03.03.02.c
10.04	Discuss the issues of safety and environmental concerns about foods and food processing (e.g., Genetically Modified Organisms, microorganisms, contamination, and irradiation).			FPP03.03.01.b
10.05	Determine appropriate industry response to consumer concerns to assure a safe and wholesome food supply.			FPP04.01.01.0b

Florida Department of Education
Student Performance Standards

Course Title: Agritechnology 1
Course Number: 8106820
Course Credit: 1

Course Description:

This course is designed to develop competencies in the areas of agriscience industry careers; prevention and treatment of livestock diseases; livestock anatomy; wholesale cuts of meat; animal reproduction and identification; animal safety; animal-health certification; plant growth; plant fertilization; safe use of pesticides; maintenance of tools and equipment; record keeping; and employability skills.

Abbreviations:
FS-M/LA = Florida Standards for Math/Language Arts
NGSSS-Sci = Next Generation Sunshine State Standards for Science

Note: This course is pending alignment in the following categories: FS-M/LA

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
11.0 Explore the scope of the agriscience industry--The student will be able to:		SC.912.N.1.1, 4, 5 SC.912.N.4.1;	
11.01 Investigate career opportunities in agriscience industries.			CS.05.01.01.a
11.02 Describe training requirements for entry and advancement in agriscience careers.			Cs.05.02.02.a
12.0 Determine proper animal health and nutrition--The student will be able to:		SC.912.L.14.6, 31, 52 SC.912.L.16.7 SC.912.L.17.1, 2, 6, 8, 11, 14, 15, 16, 17, 18, 20 SC.912.L.18.2, 3, 4 SC.912.N.1.1, 2, 4, 5. 6	
12.01 Demonstrate proper methods to clean and disinfect animal equipment and facilities.			
12.02 Explain proper disposal of animal waste with regards to sanitation, economics, and environmental implications			AS.08.01.01.a
12.03 Describe a livestock animals digestive system.			

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
12.04	Describe nutritional requirements of animals.			AS.03.01.01.a
13.0	Identify components of reproduction--The student will be able to:		SC.912.L.14.31, 32, 33 SC.912.L.15.2, 5, 6 SC.912.L.16.1, 2, 10, 13 SC.912.N.3.5	
13.01	Examine livestock and poultry reproductive anatomy.			AS.04.01.01.b
13.02	Explain the reproductive cycles of commercially important animals.			
13.03	Compare and select appropriate breeding methods for different agricultural enterprises.			
13.04	Describe approved care for newborn animals.			AS.04.02.04.a
14.0	Identify procedures in animal production			
14.01	Compare & contrast desirable characteristics of breeding and market animals.			AS.04.02.01.b
14.02	Evaluate wholesale cuts of beef, pork, lamb, and poultry.			
14.03	Describe methods of animal identification.			
14.04	Describe methods of restraining, loading, handling, and transporting animals safely.			
15.0	Develop procedures for exhibiting animals--The student will be able to:		SC.912.L.16.10	
15.01	Demonstrate the procedures for preparing, maintaining, and handling livestock.			
15.02	Compare and contrast appropriate livestock evaluation criteria.			AS.06.03.02.a
15.03	Prepare appropriate registrations, shipping and health certificates required for exhibiting or marketing animals.			
15.04	Demonstrate appropriate grooming and showmanship skills.			
16.0	Compare, select, and use plant production systems--The student will be able to:	MAFS.912.S-IC.2	SC.912.L.14.7, 53 SC.912.L.15.5, 6 SC.912.L.16.17 SC.912.L.17.4 SC.912.L.18.7	
16.01	Compare different plant production systems. (Seed, cutting, air layer and tissue culture).			

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
	16.02 Propagate, transplant and grow plants.			
	16.03 Select and prepare a site and/or a seedbed for planting.			
	16.04 Identify methods of pruning plants to achieve desired growth and to maintain health.			
17.0	Investigate proper methods to fertilize plants and crops--The student will be able to:	MAFS.912.N-Q.1.3	SC.912.L.17.10, 16 SC.912.P.8.8, 11	
	17.01 Interpret information on a fertilizer label.			
	17.02 Compare sources and forms of nutrients.			
	17.03 Determine methods of applying fertilizer materials.			
	17.04 Collect soil sample to determine nutrient levels.			PS.01.03.03.a
	17.05 Test for pH and soluble salts.			
18.0	Operate, maintain, and service facilities, tools, and equipment--The student will be able to:		SC.912.P.10.3, 14, 15, 16, 18	
	18.01 Use and maintain hand tools and power equipment (e.g., power saws, welders).			PST.02.02.02.b
	18.02 Describe maintenance and service of small engines.			
	18.03 Examine science principles as applied in selected mechanical applications (e.g. levers, pulleys, hydraulics, and internal combustion).			
19.0	Apply principles of agribusiness finance--The student will be able to:	MAFS.912.S-IC.2	SC.912.N.4.2	
	19.01 Identify components of balance sheets and income statements.			ABS.02.01.01.a
	19.02 Identify major sources of credit for agribusiness.			ABS.03.02.02.a
	19.03 Complete a business loan application.			
	19.04 Maintain and interpret agribusiness financial records including depreciation, inventory, and budgets.			
20.0	Evaluate the importance of the food and fiber system to understand the impact on global economy.—The student will be able to:			
	20.01 Assess the agricultural impact upon the US gross national product and the total global economy.			CS.02.02.03.b

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
20.02	Investigate local, state, and national regulatory laws, industry regulations, and legislation for agricultural businesses.			
20.03	Identify and describe the primary government agencies involved with agriculture.			
20.04	Research new and emerging technologies and their impact on the economy.			CS.01.02.02.c
20.05	Describe the value of the food and agribusiness industry.			
21.0	Examine the scope of career opportunities in and the importance of agriculture to the economy.			
21.01	Define and explore agriculture and agribusinesses and their role in the economy.			CS.02.02.03.a
21.02	Evaluate and explore the agribusiness career opportunities in agriculture.			
21.03	Compare how key organizational structures and processes affect organizational performance and the quality of products and services.			

Florida Department of Education
Student Performance Standards

Course Title: Agritechnology 2
Course Number: 8106830
Course Credit: 1

Course Description:

This course is designed to develop competencies in the areas of welding; small gasoline engine service and repair; preventative maintenance procedures; irrigation system repair; refrigeration; new and emerging technologies; financial management skills; and employability skills.

Abbreviations:
FS-M/LA = Florida Standards for Math/Language Arts
NGSSS-Sci = Next Generation Sunshine State Standards for Science

Note: This course is pending alignment in the following categories: FS-M/LA

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
22.0 Analyze the scope of the agriscience industry--The student will be able to:		SC.912.N.1.1, 4, 5 SC.912.N.4.1	
22.01 Identify and describe the importance of professional and trade organizations.			
22.02 Examine and interpret trade journals, and academic research in the agriscience industry.			
22.03 Complete a job application			
23.0 Recommend steps for proper animal health and nutrition--The student will be able to:	MAFS.912.N-Q.1.3	SC.912.L.14.6, 31, 52 SC.912.L.16.7; SC.912.L.17.1, 2, 6, 8, 11, 14, 15, 16, 17, 18, 20 SC.912.L.18.2, 3, 4 SC.912.N.1.1, 2, 4, 5. 6	
23.01 Recognize, describe and demonstrate prevention and treatment of common animal diseases, disorders, and pests.			AS.07.01.03.b
23.02 Read, interpret, and demonstrate correct uses of pesticides, medication, and other additives according to their labels.			
23.03 Formulate and compute least-cost feed rations.			AS.03.01.02.b

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
23.04 Select and apply growth stimulators and implants.			AS.03.02.03.c
23.05 Determine feeding rates and methods of feeding animals.			
24.0 Select, and use plant production systems--The student will be able to:	MAFS.912.S-IC.2	SC.912.L.14.7, 53 SC.912.L.15.5, 6 SC.912.L.16.17 SC.912.L.17.4 SC.912.L.18.7	
24.01 List the leading local (community) varieties of commonly grown crops for commercial production.			
24.02 Recommend varieties of local commercial plants and field crops.			
24.03 Identify the recommended planting rate, spacing requirements and growth times for common garden crops.			
24.04 Describe the operation of and adjustment of plant production equipment			
25.0 Fertilize plants and crops--The student will be able to:	MAFS.912.S-IC.2 MAFS.912.N-Q.1.3	SC.912.L.17.10, 16 SC.912.P.8.8, 11	
25.01 Develop fertilization schedules and calculate fertilizer rates for plants.			PS.01.03.06.c
25.02 Identify common nutrient-deficiency symptoms in plants.			PS.01.03.01.b
25.03 Calibrate fertilization equipment and fertilize plants.			PS.01.03.04.c
26.0 Irrigate plants and crops--The student will be able to:	MAFS.912.N-Q.1.3	SC.912.E.7.5, 6, 7, 8, 9 SC.912.L.17.10;	
26.01 Recognize soil and plant conditions indicating irrigation needs and develop an irrigation schedule.			
26.02 Compare and select irrigation equipment and methods.			
26.03 Install, operate, maintain, and repair irrigation equipment.			
26.04 Develop Best Management Practices for water use.			
27.0 Control plant pests--The student will be able to:	MAFS.912.N-Q.1.3	SC.912.L.17.6, 8, 9, 13, 17	
27.01 Compare and contrast common plant pests and their damages.			PS.03.03.01.a
27.02 Diagram life cycles of insects, pests, and diseases.			PS.03.03.02.a
27.03 Interpret the procedures and requirements for obtaining a			

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
	restricted-use-pesticide operator's license.			
27.04	Select, mix, and apply a no restricted chemical according to the label and local, state, federal and EPA regulations.			
27.05	Describe biological, chemical and cultural methods of controlling plant pests.			PS.03.03.03.c
27.06	Develop Best Management Practices for pest management.			
28.0	Maintain, and service facilities, tools, and equipment--The student will be able to:		SC.912.P.10.3,14,15, 16,18	
28.01	Discuss basic facility maintenance, installation, or repair. (e.g., welding, electricity, plumbing, fencing, construction)			
28.02	Safely operate, maintain, service, and repair equipment.			
29.0	Describe procedures for harvesting and marketing agricultural products--The student will be able to	MAFS.912.S-IC.2	SC.912.P.8.10	
29.01	Determine maturity, condition, quality, and volume of products (produced by program) to be harvested.			
29.02	Describe procedures for harvesting products (produced by program).			PS.03.05.01.a
29.03	Collect and interpret market reports and identify market outlets for agricultural products (produced by program).			
29.04	Organize a marketing program for an agricultural product (produced by program or student).			
29.05	Assess kinds and types of storage facilities for agricultural products (produced by program).			PS.03.05.04.b
29.06	Grade, treat, pack, and/or store harvested products (produced by program).			PS.03.05.05.b
30.0	Compare principles of agribusiness finance--The student will be able to:		SC.912.N.4.2	
30.01	Explain the purposes and structures of contracts, leases, deeds, and insurance policies.			
30.02	Complete a State FFA Degree or Proficiency Applications.			
30.03	Identify tax structure of agricultural business. (ex. Property tax, intangible taxes, income taxes)			
31.0	Explain the components of the American business system.—The student will be able to:			
31.01	Describe the five basic ways American business is organized.			

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
	31.02 Distinguish and identify between the characteristics of each method of doing business.			
	31.03 Evaluate the advantages and disadvantages provided by each business method.			
	31.04 Evaluate how cooperative principles and practices differentiate cooperatives from other businesses.			
32.0	Investigate agricultural cooperatives structure and function.—The student will be able to:			
	32.01 Explain the definition of a cooperative.			
	32.02 Explain the history of cooperative principles and practices.			
	32.03 Describe the five areas that classify cooperative structure.			
	32.04 Distinguish and identify between the five types of cooperative structure and their functions.			

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.

Career and Technical Student Organization (CTSO)

FFA is the intercurricular career and technical student organization 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.

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. Access MyCareerShines by visiting: www.mycareershines.org.

Cooperative Training – OJT

On-the-job training is appropriate but not required for this program. Whenever offered, the rules, guidelines, and requirements specified in the OJT framework apply.

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.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly indicates that it is anticipated that the student may need an additional year to complete an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Florida Department of Education
Student Performance Standards

Course Title: Agriscience Foundations 1
Course Number: 8106810
Course Credit: 1

Course Description:

This course is designed to develop competencies in the areas of agricultural history and the global impact of agriculture; career opportunities; scientific and research concepts; biological and physical science principles; environmental principles; agriscience safety; principles of leadership; and agribusiness, employability, and human relations skills in agriscience. Laboratory-based activities are an integral part of this course. These include the safe use and application of appropriate technology, scientific testing and observation equipment.

Laboratory investigations that include scientific inquiry, research, measurement, problem solving, emerging technologies, tools and equipment, as well as, experimental quality, and safety procedures will be an integral part of this course. Students will interact with materials and primary sources of data or with secondary sources of data to observe and understand the natural world. Students will develop an understanding of measurement error, and develop the skills to aggregate, interpret, and present the data and resulting conclusions. Equipment and supplies will be provided to enhance these hands-on experiences for students. A minimum of 20% of classroom time will be dedicated to laboratory experiences.

Abbreviations:
FS-M/LA = Florida Standards for Math/Language Arts
NGSSS-Sci = Next Generation Sunshine State Standards for Science

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
01.0 Describe the history of agriculture and its influence on the global economy--The student will be able to:		SC.912.E.5.7; SC.912.L.14.1; SC.912.L.15.13; SC.912.L.17.1, 5, 13, 18, 20; SC.912.N.4.2;	
01.01 Evaluate and explain emerging trends and the opportunities they may create within the AFNR systems.	LAFS.910.W.3.7 LAFS.1112.W.3.7		CS.01.01.02.c
01.02 Assess the economic impact of an AFNR system on a local, state,	LAFS.910.W.3.8 LAFS.1112.W.3.8		CS.02.02.03.b

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
	national and global level.			
01.03	Examine historical and current data to identify issues impacting AFNR systems.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.01.01.01.a
01.04	Examine the role of the agricultural industry in the interaction of population, food, energy, and the environment.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.06.02.01.a
02.0	Practice agriscience safety skills and procedures--The student will be able to:		SC.912.L.14.6; SC.912.L.15.4; SC.912.L.16.7, 10; SC.912.L.17.12, 14, 15, 16, 18; SC.912.N.1.1, 2, 3; SC.912.N.4.2; SC.912.P.8.7;	
02.01	Identify the common causes and prevention of accidents in agriscience operations.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
02.02	Extract and utilize pertinent information from a container label and/or Safety Data Sheet (SDS) following Environmental Protection Agency (EPA), Worker Protection Standard, and Occupational Safety and Health Agency (OSHA) regulations.	LAFS.910.RI.1.1 LAFS.1112.RI.1.1		
02.03	Identify proper disposal of hazardous waste materials and biohazards.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
02.04	Describe emergency procedures for: basic first aid, CPR, chemical spills, fire extinguisher use	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.03.03.03.b
03.0	Apply scientific and technological principles to agriscience issues--The student will be able to:		SC.912.E.7.8; SC.912.L.14.2, 3, 4, 5, 6, 8; SC.912.L.15.14, 15; SC.912.L.16.1, 2, 3, 4, 7, 9, 10, 12, 14, 15, 16, 17; SC.912.N.1.1, 2, 3, 4, 6, 7; SC.912.N.2.2, 5; SC.912.N.3.1; SC.912.N.4.1;	
03.01	Employ scientific measurement skills.			
03.02	Demonstrate safe and effective use of common laboratory equipment.			ESS.01.02.01.b

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
03.03	Identify the parts and functions of plant and animal cells.	LAFS.910.RI.1.1 LAFS.1112.RI.1.1		PS.02.02.01.a
03.04	Describe the phases of cell reproduction.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		PS.02.02.01.b
03.05	Implement the scientific method and science process skills through the design and completion of an agriscience research project.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.W.3.8 LAFS.1112.W.3.8		BS.01.01.01.c
03.06	Interpret, analyze, and report data.	LAFS.910.W.2.4 LAFS.1112.W.2.4		BS.02.01.01.b
03.07	Investigate DNA and genetics applications in agriscience including the theory of probability.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
03.08	Evaluate advances in biotechnology that impact agriculture (e.g. transgenic crops, biological controls, etc.).	LAFS.910.W.3.7 LAFS.1112.W.3.7		BS.01.01.02.a
04.0	Apply environmental principles to the agricultural industry--The student will be able to:		SC.912.E.6.1, 4; SC.912.E.7.1, 4, 6, 7, 8; SC.912.L.17.4, 7, 8, 10, 11, 12, 13, 14, 15, 16, 18, 19, 20; SC.912.L.18.12	
04.01	Research how different climactic and geological activity influences agriculture.	LAFS.910.W.3.8 LAFS.1112.W.3.8		NRS.01.03.02.b
04.02	Describe various ecosystems as they relate to the agriculture industry.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		NRS.02.02.01.a
04.03	Describe the environmental resources (soil, water, air) necessary for agriculture production.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		AS.08.02.01.a
04.04	Identify regulatory agencies that impact agricultural practices.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS910.L.3.6 LAFS.1112.L.3.6		NRS.02.01.02.a
04.05	Apply Best Management Practices that enhance the natural environment.	LAFS.910.W.2.4 LAFS.1112.W.2.4		
04.06	Identify conservation practices related to natural resources.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		NRS.02.02.02.c

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
05.0	Investigate and utilize basic scientific skills and principles in plant science--The student will be able to:		SC.912.E.5.4; SC.912.L.14.2, 3, 5, 6, 7, 8, 9, 53; SC.912.L15.9, 14, 15; SC.912.L.17.6, 12, 16, 17, 19; SC.912.L.18.7, 8, 9; SC.912.P.8.5, 7;	
05.01	Identify and describe the specializations within the plant science industry.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		
05.02	Categorize plants based on specific characteristics according to industry and scientific standards.	LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.02.01.01.a
05.03	Examine the processes of plant growth including photosynthesis, respiration, transpiration, absorption, transfer, storage, reproduction, etc....	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.02.03.01.a PS.02.03.02.a PS.02.03.05.a
05.04	Identify the nutrients required for plant growth from the periodic table and explain their functions.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		
05.05	Analyze information from a fertilizer label.	LAFS.910.RI.1.1 LAFS.1112.RI.1.1		PS.01.03.04.a
05.06	Propagate and grow plants through sexual and/or asexual reproduction.			PS.03.01.03.a PS.03.01.01.b
05.07	Investigate the impacts of various pests and propose solutions for their control.	LAFS.910.W.2.4 LAFS.1112.W.2.4		PS.03.03.01.c
05.08	Investigate the nature and properties of food, fiber, and by-products from plants.	LAFS.910.W.2.4 LAFS.1112.W.2.4		
05.09	Explore career opportunities in plant science.	LAFS.910.W.3.7 LAFS.1112.W.3.7		CS.05.01.01.a
06.0	Investigate and utilize basic scientific skills and principles in animal science--The student will be able to:		SC.912.L.14.11, 12, 13, 14, 15, 16, 17, 18, 19, 21, 22, 28, 29, 31, 32, 33, 34, 36, 40, 41, 42, 43, 45, 46, 47, 48, 51; SC.912.L.15.4, 5, 6, 7; SC.912.L.16.3, 4;	

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
			SC.912.L.17.11, 12, 13, 15, 16, 17, 18, 19;	
06.01	Explain the economic importance of animals and the products obtained from animals.	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.2.4 LAFS.1112.W.2.4		
06.02	Analyze commercially important livestock breeds in Florida.	LAFS.910.W.2.4 LAFS.1112.W.2.4		AS.06.01.02.c
06.03	Illustrate correct terminologies for animal species and conditions (e.g. age, sex, etc.) within those species.	LAFS.910.L.3.6 LAFS.1112.L.3.6		AS.06.01.03.a
06.04	Compare and contrast animal welfare issues.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.SL.2.4 LAFS.1112.SL.2.4		AS.02.01.01.a
06.05	Investigate the nature and properties of food, fiber, and by-products from animals.			AS.06.03.03.a
06.06	Explore career opportunities in animal science.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.SL.2.4 LAFS.1112.SL.2.4		CS.05.01.01.a
07.0	Demonstrate the use of agriscience tools, equipment, and instruments--The student will be able to		SC.912.L.14.4; SC.912.P.12.2, 3, 4, 9;	
07.01	Select and demonstrate proper use of hand tools in agriculture.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CS.03.04.02.a
07.02	Operate service and maintain agriscience equipment, and instruments.			CS.03.04.03.b
07.03	Manage facilities and supplies.			
08.0	Demonstrate agribusiness, employability and human relation skills--The student will be able to:			
08.01	Develop, implement, and maintain work based learning through Supervised Agricultural Experiences (SAE).	LAFS910.SL.1.1 LAFS.1112.SL.1.1 LAFS.910.W.3.7 LAFS.1112.W.3.7 LAFS.910.W.3.8 LAFS.1112.W.3.8 LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.SL.2.4 LAFS.1112.SL.2.4		

CTE Standards and Benchmarks		FS-M/LA	NGSSS-Sci	National Standards
08.02	Utilize a record keeping system to collect, interpret, and analyze data.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.W.2.6 LAFS.1112.W.2.6		
08.03	Enhance oral communications through telephone, interview and presentation skills.	LAFS.910.SL.2.6 LAFS.1112.SL.2.6		CRP.04.01.02.a
08.04	Enhance written communication by developing resumes and business letters.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.L.1.1 LAFS.1112.L.1.1 LAFS.910.L.1.2 LAFS.1112.L.1.2		CRP.04.02.02.b
08.05	Demonstrate interpersonal (nonverbal) communication skills.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
08.06	Demonstrate good listening skills.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.04.03.01.a
09.0	Apply leadership and citizenship skills--The student will be able to:			
09.01	Identify and describe leadership characteristics.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.09.01.01.a
09.02	Identify opportunities to apply acquired leadership skills.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.09.01.02.a
09.03	Identify and demonstrate ways to be an active citizen.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		CRP.01.03.02.c
09.04	Participate in community based learning activities.			CRP.01.03.01.a
09.05	Demonstrate the ability to work cooperatively.			CRP.09.03.01.a
09.06	Conduct formal and informal meetings using correct parliamentary procedure skills.	LAFS.910.W.2.4 LAFS.1112.W.2.4 LAFS.910.W.2.6 LAFS.1112.W.2.6		
09.07	Identify the opportunities for leadership development available through the National FFA Organization and/or professional organizations.	LAFS910.SL.1.1 LAFS.1112.SL.1.1		
09.08	Develop both a leadership and a career development plan utilizing SMART goals that include 5, 10, and 20 year benchmarks.			CS.05.01.01.b CRP.10.02.02.a
10.0	Discuss components of food safety and handling practices in agriculture - The student will be able to:			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
10.01 Demonstrate proper safety precautions and use of personal protective equipment.			FPP.01.01.01.b
10.02 Evaluate the food safety responsibilities that occur along the food supply chain.			FPP.03.03.02.b
10.03 Explain techniques and procedures for the safe handling of food products.			FPP.03.03.02.c
10.04 Discuss the issues of safety and environmental concerns about foods and food processing (e.g., Genetically Modified Organisms, microorganisms, contamination, and irradiation).			FPP.03.03.01.c
10.05 Determine appropriate industry response to consumer concerns to assure a safe and wholesome food supply.			FPP.04.02.02.c

Florida Department of Education
Curriculum Framework

Course Title: Agricultural Use of UAS Technology
Course Type: Career Preparatory
Career Cluster: Agriculture, Food and Natural Resources

Secondary – Career Preparatory	
Program Number	8005200
CIP Number	0141039901
Grade Level	11-12, 30, 31
Standard Length	1 credit
Teacher Certification	Refer to the Course Structure section.
CTSO	FFA
SOC Codes (All applicable)	19-4099 – Precision Agriculture Technicians
CTE Program Resources	http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Capstone Course

The purpose of this course is to provide students who have completed or are currently completing an OCP (occupational completion point) in an agricultural program, a capstone experience in UAS Technology for agriculture. This course is designed to enhance competencies in the areas of agricultural science and UAS technology. Laboratory-based activities are an integral part of this course. These include the safe use and application of appropriate technology, scientific testing and observation equipment.

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

Program Structure

This course may be taken only by a student who has completed or is currently completing an occupational completion point in an agriculture program.

OCP	Course Number	Course Title	Teacher Certification	Length	SOC Code	Level	Graduation Requirement
A	8005233	Agricultural use of UAS Technology	AGRICULTUR 1*	1 credit	19-4099	3	VO

(Graduation Requirement Abbreviations- EQ= Equally Rigorous Science, PA= Practical Arts, EC= Economics, VO= Career and Technical Education)

Teacher Certification

Teachers must hold the traditional agriculture teacher certification and an Unmanned Safety Credential to teach this course.

Academic Alignment Tables

Academic alignment is an ongoing, collaborative effort of professional educators specializing in the fields of science, mathematics, English/language arts, and Career and Technical Education (CTE). This initiative supports CTE programs by improving student performance through the integration of academic content within CTE courses. Career and Technical Education courses that have been aligned to the Next Generation Sunshine State Standards for Science and the Florida Standards for Mathematics and English/Language Arts will show the following data: the quantity of academic standards in the CTE course; the total number of standards contained in the academic course; and the percentage of alignment to the CTE course.

Courses	Anatomy/ Physiology Honors	Astronomy Solar/Galactic Honors	Biology 1	Chemistry 1	Earth-Space Science	Environmental Science	Genetics	Integrated Science	Marine Science 1 Honors	Physical Science	Physics 1
Agricultural use of UAS Technology	**	**	**	**	**	**	**	**	**	**	**

** *Alignment pending review* # *Alignment attempted, but no correlation to academic course*

Courses	Algebra 1	Algebra 2	Geometry	English 1	English 2	English 3	English 4
Agricultural use of UAS Technology	**	**	**	**	**	**	**

** *Alignment pending review* # *Alignment attempted, but no correlation to academic course*

Florida Standards for Technical Subjects

Florida Standards (FS) for English Language Arts and Literacy in History/Social Studies, Science, and Technical Subjects are the critical reading and writing literacy standards designed for grade 6 and above. These standards are predicated on teachers of history/social studies, science, and technical subjects using their content area expertise to help students meet the particular challenges of reading, writing, speaking, listening, and language in their respective fields. The FS for Mathematical Practices are designed for grades K-12 and describe varieties of expertise that educators at all levels should seek to develop in their students. These practices rest on important "processes and proficiencies" with longstanding importance in mathematics education.

Instructors must incorporate the Florida Standards for Technical Subjects and Mathematical Practices throughout instruction of this CTE program. To access these standards, please click on the following link:
http://www.fldoe.org/core/fileparse.php/5652/urlt/FloridaStandardsTechSubjects.rtf.

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. To access an ELL supporting document which delineates performance definitions and descriptors, please click on the following link: http://www.cpalms.org/uploads/docs/standards/eld/SI.pdf.
For additional information on the development and implementation of the ELD standards, please contact the Bureau of Student Achievement through Language Acquisition at sala@fldoe.org.

Common Career Technical Core – Career Ready Practices

Career Ready Practices describe the career-ready skills that educators should seek to develop in their students. These practices are not exclusive to a Career Pathway, program of study, discipline or level of education. Career Ready Practices should be taught and reinforced in all career exploration and preparation programs with increasingly higher levels of complexity and expectation as a student advances through a program of study.

1. Act as a responsible and contributing citizen and employee.

2. Apply appropriate academic and technical skills.

3. Attend to personal health and financial well-being.

4. Communicate clearly, effectively and with reason.

5. Consider the environmental, social and economic impacts of decisions.

6. Demonstrate creativity and innovation.

7. Employ valid and reliable research strategies.

8. Utilize critical thinking to make sense of problems and persevere in solving them.

9. Model integrity, ethical leadership and effective management.

10. Plan education and career path aligned to personal goals.

11. Use technology to enhance productivity.

12. Work productively in teams while using cultural/global competence.

Standards

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

01.0 Investigate the origins and development of unmanned aviation.
02.0 Develop a plan for powered flight in the National Airspace System
03.0 Explain aviation rules and regulations as they pertain to UAS.
04.0 Explain concepts and differences in human factors related manned and unmanned aviation.
05.0 Demonstrate Crew Resource Management principles.
06.0 Demonstrate the appropriate attitudes and behaviors associated with the safety mindset.
07.0 Analyze UAS technologies, platforms, and systems.
08.0 Select appropriate UAV to complete a given objective.
09.0 Analyze the ethics and privacy considerations in the operation of unmanned aircraft.
10.0 Model methods to communicate with air traffic control and conflict aircraft
11.0 Analyze UAS Operating standards and restrictions
12.0 Explain components of airworthiness
13.0 Explain aviation safety systems as they apply to UAS
14.0 Explain new careers that have emerged using technology in agriculture.
15.0 Determine uses for Unmanned Aircraft Systems (UAS) to monitor plant growth.
16.0 Describe how UAS can be used to evaluate soil conditions.
17.0 Develop an integrated pest management (IPM) plan using information from UAS technology.
18.0 Develop fertilizer recommendations by interpreting multiple data sources.
19.0 Determine uses for UAS to monitor animal operations.
20.0 Determine the applications of UAS to provide data forage producers.
21.0 Determine the applications of UAS to provide data on agricultural crops.
22.0 Determine the applications of UAS to provide data to foresters.

Florida Department of Education
Student Performance Standards

Course Title: Agriculture and UAS Technology
Course Number: 8005233
Course Credit: 1

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
01.0 Investigate the origins and development of unmanned aviation.			
01.01 Actively participate in a group to present important systems, people, and technologies important to the development of the industry.			
01.02 Summarize the evolution of commercial UAS operations in the United States.			
01.03 Explain the limitations and constraints placed on the development of commercial UAS.			
01.04 Describe the process and evolution of a UAS regulatory framework.			
01.05 Explain technologies that led to modern day UAS.			
01.06 Describe the events important to the development of UAS.			
01.07 Explain classification schemes of UAS.			
01.08 Explain intelligence modes of control for UAS.			
01.09 Explain the difference between direct control versus supervisory control.			
01.10 Design a diagram illustrating the differences and similarities between beyond line of sight, beyond visual line of sight, electronic line of sight, and visual line of sight.			
02.0 Develop a plan for powered flight in the National Airspace System.			
02.01 Interpret Aeronautical Charts to determine airspace for a given location.			
02.02 Explain the classes of airspace.			
02.03 Describe weather and associated hazards to aviation.			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
02.04 Interpret "official" sources of weather to make sound decision.			
02.05 Interpret the Notices to Airman Information reporting system.			
02.06 Interpret both airport and center NOTAMs.			
03.0 Explain aviation rules and regulations as they pertain to UAS.			
03.01 Explain the limitations and requirements of Visual Flight Rules as they pertain to UAS.			
03.02 Explain state and local rules and regulations governing UAS.			
04.0 Explain concepts and differences of in human factors related to manned and unmanned aviation.			
04.01 Explain the human factors of UAS operations.			
04.02 Explain how ground control stations operate.			
04.03 Describe personnel required for UAS operations.			
04.04 Explain how human factors effect operation.			
04.05 Demonstrate an understanding of human imitations in perception, processing and performance			
04.06 Describe the type and causes of human errors			
04.07 Describe the physiological effects of drugs and alcohol			
04.08 Describe methods for dealing with automation and the lack of sensory cues			
05.0 Demonstrate Crew Resource Management principles.			
05.01 Explain the purpose of Crew Resource Management			
05.02 Describe situational awareness			
05.03 Demonstrate effective crew communication and coordination			
05.04 Utilize advocacy and inquiry to champion a course of action			
05.05 Describe strategies for dealing with task saturation or overloads			
05.06 Demonstrate the skills associated with aeronautical decision			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
making and operational analysis			
05.07 Demonstrate proper site survey and analysis skills			
06.0 Demonstrate the appropriate attitudes and behaviors associated with the safety mindset			
06.01 Describe and demonstrate professional conduct			
06.02 Demonstrate the importance of being risk averse in UAS planning and flight			
07.0 Analyze UAS technologies, platforms, and systems.			
07.01 Summarize UAS intelligence and components.			
07.02 Summarize platform capabilities and limitations.			
07.03 Analyze the control station of UAS.			
07.04 Summarize the payload element of UAS			
07.05 Analyze the environment in which the UAS operate.			
07.06 Explain frequency management in the United States.			
07.07 Assess UAS lifecycle and its implication on UAS operations.			
07.08 Compare UAS component reliability and operational considerations.			
07.09 Describe UAS user interfaces.			
07.10 Analyze levels of automation in robotic systems.			
07.11 Analyze when to use UAS rather than manned aircraft.			
07.12 Describe UAS sensors used for navigation and stabilization.			
08.0 Select appropriate UAV to complete a given objective.			
08.01 Explain characteristics of airborne robotic systems.			
08.02 Compare wing designs and benefits of each to the field of UAS.			
08.03 Analyze criteria set forth via a request for proposal to identify			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
appropriate aircraft to conduct operations.			
08.04 Compare energy sources available for UAS.			
08.05 Compare payload options and apply them to appropriate operations.			
08.06 Explain uses of infrared technology.			
09.0 Analyze the ethics and privacy considerations in the operation of unmanned aircraft.			
09.01 Explain the regulations and policies currently in place for UAS operations.			
09.02 Describe the foundations of an ethical code of conduct for UAS operators.			
09.03 Define professional use of UAS.			
09.04 Demonstrate standards of professionalism in everyday operations.			
09.05 Analyze ethical use of robotic aircraft. (safety of people)			
10.0 Model methods to communicate with air traffic control and conflict aircraft.			
10.01 Describe aviation communications practices.			
10.02 Explain the essential information required in aviation communication.			
10.03 Use the Aeronautical Information Manual to make a radio call.			
11.0 Analyze UAS Operating standards and restrictions.			
11.01 Analyze UAS limitations and regulations.			
11.02 Explain guidelines and safety protocols.			
11.03 Explain the reporting requirements for UAS operations.			
12.0 Explain components of airworthiness.			
12.01 Explain the concept of system limitations.			
12.02 Prepare airworthiness inspections.			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
13.0 Explain aviation safety systems as they apply to UAS.			
13.01 Explain the four pillars of a safety management system (SMS).			
13.02 Conduct a risk assessment.			
13.03 Develop risk mitigation strategies.			
13.04 Explain methods for safety assurance and promotion.			
13.05 Describe how a well working SMS can recover from an accident.			
14.0 Explain new careers that have emerged using technology in agriculture.			
14.01 Identify significant career shifts with technology in the agriculture industry.			
14.02 Examine the role of technology in the agriculture industry.			
14.03 Solve mathematical applications using technology.			
14.04 Describe technologies associated with active and passive remote sensing payloads.			
14.05 Explain the limitations of remote sensing.			
15.0 Determine uses for Unmanned Aircraft Systems (UAS) to monitor plant growth.			
15.01 Describe the uses of UAS remote sensing technology to examine the processes of plant growth.			
15.02 Determine the health of plant using chlorophyll counts.			
15.03 Identify nutrient deficiencies in plants using UAS remote sensing technology.			
16.0 Describe how UAS can be used to evaluate soil conditions.			
16.01 Analyze soil properties using UAS remote sensing technology.			
16.02 Develop a plan to use UAS technology in best management practices for irrigation.			
16.03 Examine irrigation application effectiveness using UAS technology.			
17.0 Develop an integrated pest management (IPM) plan using information from UAS technology.			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
17.01 Identify pests and diseases and the damage they cause.			
17.02 Recommend appropriate solutions for pest and disease control.			
17.03 Differentiate between nutrient deficiencies and pest/disease damage in plants.			
18.0 Develop fertilizer recommendations by interpreting multiple data sources.			
18.01 Identify nutrient deficiencies plan using UAS remote sensing.			
18.02 Make fertilizer recommendations based on data from visual appraisal of plants and soil samples.			
18.03 Determine the appropriate type and rate of fertilizer to apply to plants.			
19.0 Determine uses for UAS to monitor animal operations.			
19.01 Describe the uses of UAS technology to observe animals.			
19.02 Identify animals using UAS remote sensing.			
19.03 Determine calving percentages using UAS remote sensing.			
19.04 Identify the systems of common diseases of cattle, sheep, and goats.			
20.0 Determine the applications of UAS to provide data forage producers.			
20.01 Identify common forages, pests, and diseases using UAS remote sensing.			
20.02 Identify the growth stage of forage crops.			
20.03 Identify common diseases that impact forage crops.			
20.04 Evaluate forage and hay as a source of nutrition for animals.			
21.0 Determine the applications of UAS to provide data on agricultural crops.			
21.01 Use UAS remote sensing technology to identify pest and diseases.			
21.02 Analyze the use of UAS for early detection of diseases.			

CTE Standards and Benchmarks	FS-M/LA	NGSSS-Sci	National Standards
21.03 Calculate yield estimates using UAS data.			
21.04 Evaluate and monitor crops using UAS remote sensing technology to predict harvest times.			
22.0 Determine the applications of UAS to provide data to foresters			
22.01 Identify economically important tree species.			
22.02 Identify forest pests, insects and diseases using UAS remote sensing techniques.			
22.03 Make forest management decisions using data from UAS images and data.			

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. Access MyCareerShines by visiting: www.mycareershines.org.

Career and Technical Student Organization (CTSO)

FFA 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. 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.

Some secondary students with disabilities (ESE) may need additional time (i.e., longer than the regular school year), to master the student performance standards associated with a regular Occupational Completion Point (OCP) or a Modified Occupational Completion Point (MOCP). If needed, a student may enroll in the same career and technical course more than once. Documentation should be included in the IEP that clearly

indicates that it is anticipated that the student may need an additional year to complete an OCP/MOCP. The student should work on different competencies and new applications of competencies each year toward completion of the OCP/MOCP. After achieving the competencies identified for the year, the student earns credit for the course. It is important to ensure that credits earned by students are reported accurately. The district's information system must be designed to accept multiple credits for the same course number for eligible students with disabilities.

Additional Resources

For additional information regarding articulation agreements, Bright Futures Scholarships, Fine Arts/Practical Arts Credit and Equivalent Mathematics and Equally Rigorous Science Courses please refer to:
http://www.fldoe.org/academics/career-adult-edu/career-tech-edu/program-resources.stml

Attachment 4: Curriculum Frameworks

Greenhouse

Tractor

ATLAS GREENHOUSE
P.O. Box 558 9596 US Hwy 82 East • Alapaha, GA 31622
Ph: 1-800-346-9902 / Fax: 1-229-532-4600

Jim

Proposal for Wewahitchka High School

Prepared by Jim Williams
September 28, 2018

To: **Gulf County School Board**
150 Middle School
Port St. Joe, FL 32456

Attn:

Ph: 850-229-5296
Fx:
Cell:
E-mail ebidwell@gulf.k12.fl.us
P.O.#

Ship to: **Wewahitchka High School**
1 Gator Circle
Wewahitchka, FL 32465

Attn: Eric Bidwell
Ph: 850-639-2228 School
Alt. Ph. 850-691-7787 Eric's cell

Engineering Recap E-18-093

A) "Educator" Series Greenhouse Structure

24 ft. Wide by 36 ft Long, with 6 ft. Sidewalls
Galvanized steel frame consisting of:

A) Column Post: Allied "Gatorshield" 2" x 4" x 14 ga. rectangle w/welded Plates - 6' Spacing
B) Bows: Allied 2" x 3" x 14 ga. Rectangle - 6' Spacing
C) Trusses: Allied "Gatorshield" 2" x 2" x 14 ga. Square, Spans 11' - 11" Wide.
D) Uprights: Allied "Gatorshield" 1-3/8" Round
E) Purlins 8 Runs Allied "Gatorshield" 1-3/8" Round
F) Ridge: Extruded Aluminum ridge cap allows easier installation & maintenance.
G) Roof Glazing System: Extruded Aluminum roof channels spaced 6 ft. apart.
H) Roof Glazing: 8mm clear twin wall no drip polycarbonate panels. (10 yr. warranty)
I) Eave Glazing System: Aluminum extruded eave channels allows easier installation & maintenance.
J) Eave Glazing: 8mm clear twin wall no drip polycarbonate. (10 yr. warranty)
K) Sealed Engineering Drawings for Structrual Design

Wind and Snow Loads

Wind Load (WL)	**148**	mph, 3 second gusts
Snow Load (SL)	**5**	lbs. psf, Ground Snow
Risk Category	II	**Gulf Co. FL**

*****Notice*****

This proposal is for the structure and equipment proposed and delivery thereof. Also for the erection, installation, plumbing, and electrical wiring of proposed structure. School system shall be responsible for obtaining permits required, site prep, installation of concrete footer or concrete pad w/drain and the pulling of utilities within the perimeter of the greenhouse as stub ups.

C) End Gables

Front End Gables: Framed for 2 - 30" exhaust fans and 1 - 42" x 6' - 6" Personnel doors.

A) Framing Studs: Allied "Gatorshield" 2" x 2" x 14 ga. Square w/ brackets for wedge anchor attachment.
B) Horizontal Purlins: Allied "Gatorshield" 2" x 2" x 14 ga. Square
C) Base Extrusion: Aluminum base extrusion attractively seals and "trims out" base of greenhouse.

Rear End Gables: Framed for 4 ft. x 10 ft. Evaporative Cooling System and 1 - 42" x 6' -6" Personnel Door.

A) Framing Studs: Allied "Gatorshield" 2" x 2" x 14 ga. Square w/ brackets for wedge anchor attachment.
B) Horizontal Purlins: Allied "Gatorshield" 2" x 2" x 14 ga. Square
C) Base Extrusion: Aluminum base extrusion attractively seals and "trims out" base of greenhouse.

End Gable glazing: 8mm clear twinwall no drip polycarbonate panels, complete framing, glazing, and extrusion package. (10 yr. warranty)

Ventilation

A) 2 30" Quietaire GCS slant wall exhaust fan 1/2hp: 6956 cfm ea. @ .10 SP 110V or 220V. 1 fan is 2 speed and 1 fan is single speed both equipped with shutter and guard. Offering a minimum of 1.3 air exchanges per minute @ .10 inches of static pressure.

B) 1 39" Motorized Quietair Shutter, located above cooling pad offers a fresh air intake at the minimum stage cooling.

C) 4 x 10 ft. Stainless Steel Quietaire Evaporative Cooling System with trough, plate and 6" thick pad. The 6" pad material offers maximum cooling. Uses a 65 / 15 degree water/air flow with a 420 per maximum face velocity. System is self contained and does not require a reservoir tank. Includes sump pump and float valve for proper water level regulation.

D) 4 x 10 ft, Automatic Wall Vent located behind the evaporative cooling system. Wall vent operates using a motorized rack & pinion drive system offering years of maintenance free operation. Includes extruded aluminum frame and 10 yr. warranted 8mm polycarbonate covering.

Heating

A) 1- 100,000 BTU - L. P. Gas high efficiency ADP heater with aluminized burner. The heater incorporates a time delay to allow the aluminized steel heat exchanger to rise to a certain temperature before the fan is engaged. The heater is equipped with a propeller fan with guard. Included is necessary vent pipe & hanger assembly. Designed to maintain an inside temperature of 68° with an outside temperature of 0° and a 15 mph wind. Equipped with power vent and spark ignition.

B) 2 Horizontal Air Flow Fans (HAF) 18" - 3 bladed fans complete with guard and a split capacitor 115 volt 60 hz motor, 1.0 amps develops 3215 CFM. These fans circulate the air to maintain a consistent temperature inside the greenhouse, in addition, these fans reduce the stratification (stale air) thus reduces the risk of plant disease.

Doors

A) 2 - 48" x 7' -0" ADA compliant single swing door with 24" x 30" Tempered Glass Light Kit. Includes: 20 ga. Polystyrene Door leaf, 16 ga. 4-1/4" frame, bb hinges (3), threshold sweep, kerf weatherstrip, Sargent Rim Panic hardware, lever lockset and closer.

Automatic Temperature Control

A) Bartlett Instrument Company GHK 12 x 2 Easy Wire Greenhouse Temperature comtroller and pre-wired relay box. (Relay box is prewired to controller) Controller offers 2 stages of heating and 4 stages of cooling. Features include DIF, DAY and NITE settings, a cycle timer for irrigation, misting or lights, a vent stage for dehumidiication, an alarm output for high or low temperatures, power loss, or hardware troubles, and statistics for high, low and average temperatures for the past 7 days. Software is available for connecting your personnel computer for easy programing and monitoring.

Hanging Basket Rails:

A) Will provide 6 runs of 1-3/8" x 17 ga. Allied "Gatorshield" tubing running length of benches. 24 feet long rail length

Shade Cloth

A) Will provide a 28 foot by 38 foot (1064 Square Ft.) Svensson_FLS Shade Cloth with 51% Shading factor. Grommeted and taped 2 foot on centers. The shade cloth will be applied to the roof of the finished structure and to be attached to the midpoint on side wall for easy installation and removal. The shade cloth will help reduce inside temperature and allow optimum growing for "Partial Sun" plant material. Included is 3/4" - 1 hole clamp with hardware and Lace Rope for Shade Cloth attachment.

Emergency Lighting / Exit Signs / Fire Extinguisher

A) Will be located above doors and will illuminate the word "EXIT" at all times, also has emergency lights powered by a rechargable battery. Emergency lights should come on when the power is interrupted for any reason. One Multi purpose dry chemical A-B-C rated 10 lb. Fire extinguisher charged with formulated siliconized dry chemical UL rated for fighting paper, wood, fabric, grease, flammable liquid and electrical fires.

Benches

A) Benches are framed with aluminum extrusions and rectangular galvanized steel tubing for superior strength. Bench mesh is 3/4" x 13 gauge galvanized expanded metal. Bench cross braces are made of 1" x 2" rectangular tubing and spaced 2 ft. apart, bench legs consist of 1" x 2" rectangular tubing.

Qty. 2 3 ft. Continuous Bench by 24 ft. long.
Qty. 1 6 ft. Continuous Bench by 24 ft. long.

Bench Layout is per attached drawing.

Irrigation:

A) Mist:

1- Complete system with brass high pressure regulator, filter, punch tool, PVC pipe, gate valves, zone controller,and solenoids. Mist irrigation plumbed above benches with 36" long misters spaced 2' on centers and will have manual shut off. Hanging basket drippers are to be adjustable flow and have the capacity to be turned off. Drippers are spaced 24" on centers and 24" long.

B) Fertilizer Injector:

1- Installed minimum of 30" ground for easy access, all irrigation outlets are serviced through fertilizer injector. Unit provides a maximum of 30 GPM of fertilizer/water solution output. Unit must be installed with bypass and gate valves for fexibility.

C) Controller:

Rain Bird Model ESP 4M Modular Irrigation Controller. Includes an additional 3 zone module to give a total of 7 zones. This controller allows for future expansion up to 13 zones. Has 3 independent programs to give the flexability

D) Includes Galvanized Steel Solenoid Manifold.

NOTE: Mininum of 55 PSI required for proper operation of irrigation system.

Installation: (Completed by Atlas Contractor)

A) Completion

1) Will provide all labor and materials to erect greenhouse using professional greenhouse builders experienced in every aspect of the "Educator" according to manufacture's specifications.
2) Upon completion of work, will test all equipment for proper operation.
3) Instruct school personnel in all aspects of operation and maintenance manuals on covering and equipment.

B) Electrical

1) Will furnish all labor and materials to install 4 - 115 volt receptacles, two on each end of greenhouse.
2) Will furnish all labor and materials to properly wire all greenhouse equipment into 100 amp breaker box.
3) Will furnish all labor and materials to provide necessary utility vapor tight lamps with guard installed 12' apart down length of greenhouse. 100 watt bulb included.
4) National Electric Codes will be adhered to throughout the greenhouse.

C) Plumbing

1) Will furnish all labor and materials to provide: **5** spigots: **2** plumbed to injectors **3** plumbed to clear water supply utilizing Schedule 21 PVC Pipe or equivalent. If there is not an irrigation system in the contract, **3** spigots will be plumbed for clear water.
2) Will furnish all labor and material to plumb evaporative cooling system
3) Will furnish all labor and material for installation of irrigation system. (if ordered)

		Shipping	$	1,380.00
		Crating Fee	$	100.00
		Sub Total	$	31,245.10
Tax Exempt	0%	Sales Tax	$	-
		Sub Total	$	31,245.10
		Installation Total	$	21,000.00
		Grand Total	$	**52,245.10**

Note: Proposal valid for 30 days after: **September 28, 2018**

The Greenhouse described in this order is designed for and limited to the wind and snow loads identified and described above. These loads are based on data provided by the American Society of Civil Engineers ASCE 7-10 Manual, Figure 7-1 and the IBC-2012 Manual, Figure 1608.2 for snow as a Category I continuously heated greenhouse described in Table 1604.5 of the IBC-2012 Manual and ASCE 7-10 Manual, Figure Table 1.5-1 and the IBC-2012 Manual, Figure CC-4 for wind. It is the responsibility of the customer/purchaser of this Greenhouse to confirm with the local building authorities of the accuracy and correctness of these loads prior to the order acceptance. Atlas Manufacturing, Inc. cannot and will not be held liable or responsible for any and all damages and/or structural failures caused by prevailing load conditions at the greenhouse's erected location that exceeds the aforementioned Wind and Snow loads defined above.

I, Gulf County School Board have read and understand the above order and disclaimer and agree to this order and disclaimer in their entireties. (This order is not valid unless accepted by Atlas Manufacturing, Inc.

Accepted,

_____
Company / Individual

_____
Name (Please Print)

_____
Title

_____
Signature

_____
Date

Accepted,

Atlas Manufacturing, Inc.
Company / Individual

Jim Williams
Name (Please Print)

Greenhouse Sales
Title

Jim Williams
Signature

9/28/2018
Date

*** Due to the volatility of fuel prices, freight charges will be determined at time of shipment and adjusted accordingly.**

School System Responsibilities

NOTE: Site Preparation, Foundation and Flooring is the responsibility of the school system.

Electrical

A) Required to furnish 120/240 volt single phase electrical supply within the perimeter of the greenhouse located near front door as shown on bench layout drawing.
B) 20' of additional electrical cable to be provided to effectively connect power without splice.

Plumbing

A) Required to furnish minimum 1" PVC water supply within the perimeter of the greenhosue located near front door as shown on bench layout drawing. Minimum of 55PSI of pressure required.

Drainage

A) Local system will perform final connection of drainage system.
B) Applies to structure with sinks and / or solid concrete slabs with center drain.

Gas Line

A) School system (or others) to furnish gas line for heaters inside of greenhouse and is responsible for final hook up to heater.
B) Applies to both LP and Natural gas heater systems.

Access

A) Workers must have access to construction site from 7 A.M. to 6 P.M.
B) Workers must have access to restroom facilities.

Utilities

A) Power supply and water supply must be run to site prior to the beginning of any construction.

Acceptance by Customer (Sign Here)	Atlas Representative
Date	Date

SPECIAL NOTICE:

ATLAS MANUFACTURING, INC. CAN NOT AND WILL NOT BE HELD RESPONSIBLE FOR PRODUCT FAILURE WHERE EXCESSIVE WEATHER CONDITIONS SUCH AS SNOW, WIND, FIRE, OR HAIL HAS OCCURRED AND SUCH OCCURRENCES HAS EXCEEDED THE DESIGN LOADS STATED IN ENGINEERING SPECIFICATIONS. FURTHERMORE, ATLAS MANUFACTURING, INC. CAN NOT BE HELD RESPONSIBLE FOR PRODUCT FAILURE DUE TO IMPROPER INSTALLATION OR FAILURE TO FOLLOW MANUFACTURER'S RECOMMENDATIOI FAILURE TO FOLLOW RECOMMENDATIONS AND INSTRUCTIONS OF THE MANUFACTURER COULD RESULT IN ULTIMATE STRUCTURAL FAILURE.

SOWELL TRACTOR COMPANY, INC.

2841 HIGHWAY 77 NORTH -PO BOX 391 PANAMA CITY, FL 32402
Phone (850) 763-5441 Fax (850) 913-9957

DATE:	27-Oct-17		**SALESMAN**	Tommy Smith	
FOR:	Mr. Woody Borders				
NAME	Gulf County School Board		**FAX #**	850 229-6089	
ADDRESS	150 Middle School Road		**QUOTE GOOD UNTIL**		12/31/2017
CITY	Port Saint Joe	**STATE**	FL	**ZIP**	32456

QUANTITY	**DESCRIPTION**	**PRICE**
1	L4701HST Kubota 4WD Tractor 47 HP, with industrial tires (6' Wide)	$20,236.00
1	Loader LA765 Kubota with L2235A quick connect bucket	$4,917.00
1	PFL3048 3,000lb 48" quick connect pallet fork set	$850.00
1	BH92 Back-Hoe assembly with a 16" bucket	$8,904.00
	SUB-TOTAL	**$34,907.00**

LESS TRADE ALLOWANCES (DESCRIPTION)	**AMOUNT**	**OTHER CHARGES**	
		DELIVERY	
		SUB-TOTAL	**$34,907.00**
		MINUS TRADE-INS	$0.00
TOTAL TRADE ALLOWANCE	$0.00	**SUB-TOTAL**	**$34,907.00**
LESS PAYOFF		**SALES TAX IF APPLICABLE**	
LEIN HOLDER		**PAY-OFF AMOUNT(s)**	
		GRAND-TOTAL	**$34,907.00**
		LESS CASH DOWN	
		TOTAL AFTER DOWN-PAYMENT	**$34,907.00**

NOTES: