



HOMER CENTRAL SCHOOL DISTRICT
P.O. BOX 500
Homer, New York 13077-0500

(607) 749-1206
(607) 749-1217 (Fax)

Linda Llewellyn
Director of Instruction and Evaluation

To: Nancy Ruscio
From: Linda Llewellyn 
Date: February 17, 2017
Re: High School Course Proposal: *Agriculture, Food and Natural Resources*

Attached please find the high school course proposal for *Agriculture, Food and Natural Resources (AFNR)*. This course will expand upon the district's State-approved CTE pathway in Agriculture by focusing on the ever-changing sector of global economy that provides sustenance for all of us. The course proposal states that AFNR "acts as an introductory course to a series of other agriculture-related courses... and will expose students to hands-on, inquiry based activities, projects and problems related to agriculture." The course is articulated with SUNY Cobleskill, allowing students who successfully complete the course to enjoy the benefit of college credit. The course curriculum for AFNR was developed by Case 4 Learning, an organization founded by the National Council for Agricultural Education for the purpose of advancing agricultural education and enhancing student learning in agricultural science. Curriculum concepts have been identified collaboratively between industry leaders and expert teachers and Case 4 Learning "adopted the Activity, Project, and Problem-Based (APPB) modalities used by Project Lead the Way...to help learners develop specific skills, synthesize and create and evaluate information to solve complex problems." The science department's Curriculum Area Lead Teacher (CALT), Doug VanEtten, the CALT group as a whole, the Instructional Leadership Council and I have reviewed and approve of the AFNR course proposal.

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Proposed Course Additions Form

Course Title: Agriculture, Food, and Natural Resources (AFNR)

Department: Science

School: Homer High School

Rationale:

Agriculture, food and natural resources is a highly technical and ever changing sector of the global economy upon which everyone is dependent. We will continue to meet national and global demand for a safe and abundant food, fiber, and fuel supply if we invest in growth and development of human capital for the AFNR industry. Strong, relevant AFNR Career and Technical Education Programs that are informed by industry and education stake holders are one way we can meet workforce needs now and in the future.

Anticipated Student Outcomes:

Element Type	Code	Data
Pathway	CS	Anticipated Student Outcome
Standard	CS.01	Analyze how issues, trends, technologies and public policies impact systems in the Agriculture, Food & Natural Resources Career Cluster.
Indicator	CS.01.01	Research, examine and discuss issues and trends that impact AFNR systems on local, state, national and global levels.
Awareness Measurement	CS.01.01.01.a	Examine historical and current data to identify issues impacting AFNR systems.
Intermediate Measurement	CS.01.01.01.b	Analyze and summarize AFNR issues and their impact on local, state, national and global levels.
Advanced Measurement	CS.01.01.01.c	Evaluate and explain AFNR issues and their impacts to audiences with limited AFNR knowledge.
Awareness Measurement	CS.01.01.02.a	Research and summarize trends impacting AFNR systems.
Intermediate Measurement	CS.01.01.02.b	Analyze current trends in AFNR systems and predict their impact on local, state, national and global levels.
Advanced Measurement	CS.01.01.02.c	Evaluate and explain emerging trends and the opportunities they may create within the AFNR systems.
Indicator	CS.01.02	Examine technologies and analyze their impact on AFNR systems.
Awareness Measurement	CS.01.02.01.a	Research technologies used in AFNR systems.
Intermediate Measurement	CS.01.02.01.b	Apply appropriate use of technologies in AFNR workplace scenarios.
Advanced Measurement	CS.01.02.01.c	Solve problems in AFNR workplaces or scenarios using technology.
Awareness	CS.01.02.02.a	Compare and contrast AFNR systems before and after the

Measurement		integration of technology.
Intermediate Measurement	CS.01.02.02.b	Analyze how technology is used in AFNR systems to maximize productivity.
Advanced Measurement	CS.01.02.02.c	Evaluate the importance of technology use and how it impacts AFNR systems.
Indicator	CS.01.03	Identify public policies and examine their impact on AFNR systems.
Awareness Measurement	CS.01.03.01.a	Summarize public policies affecting AFNR systems.
Intermediate Measurement	CS.01.03.01.b	Analyze and assess at least two public policies that impact each AFNR system.
Advanced Measurement	CS.01.03.01.c	Evaluate a public policy within AFNR systems and defend or challenge it.
Awareness Measurement	CS.01.03.02.a	Identify influential historical and current public policies that impact AFNR systems.
Intermediate Measurement	CS.01.03.02.b	Create and propose a hypothetical policy that will impact current AFNR systems.
Advanced Measurement	CS.01.03.02.c	Create a plan for implementing a new public policy that will positively impact AFNR systems.
Standard	CS.02	Evaluate the nature and scope of the Agriculture, Food & Natural Resources Career Cluster and the role of agriculture, food and natural resources (AFNR) in society and the economy.
Indicator	CS.02.01	Research and use geographic and economic data to solve problems in AFNR systems.
Awareness Measurement	CS.02.01.01.a	Research and describe different types of geographic data used in AFNR systems.
Intermediate Measurement	CS.02.01.01.b	Analyze and interpret AFNR related geographic data using a variety of systems and technologies (e.g., GIS, GPS, etc.).
Advanced Measurement	CS.02.01.01.c	Evaluate geographic data and select necessary data sets to solve problems within AFNR systems.
Awareness Measurement	CS.02.01.02.a	Identify and examine economic data related to AFNR systems (e.g., commodity markets, food marketing, food and nutritional assistance programs, etc.).
Intermediate Measurement	CS.02.01.02.b	Analyze and interpret a set of economic data and explain how it impacts an AFNR system.
Advanced Measurement	CS.02.01.02.c	Devise a strategy to solve a problem in an AFNR system using a set of economic data.
Indicator	CS.02.02	Examine the components of the AFNR systems and assess their impact on the local, state, national and global society and economy.
Awareness Measurement	CS.02.02.01.a	Identify and summarize the components within AFNR systems (e.g., Animal Systems: health, nutrition, genetics, etc.; Natural Resources Systems: soil, water, etc.).
Intermediate Measurement	CS.02.02.01.b	Assess components within AFNR systems and analyze relationships between systems.
Advanced Measurement	CS.02.02.01.c	Devise and implement a strategy for explaining components of AFNR systems to audiences with limited knowledge.

Awareness Measurement	CS.02.02.02.a	Define and summarize societies on local, state, national and global levels and describe how they relate to AFNR systems.
Intermediate Measurement	CS.02.02.02.b	Assess how people within societies on local, state, national and global levels interact with AFNR systems on daily, monthly or yearly basis.
Advanced Measurement	CS.02.02.02.c	Evaluate how society traditions, customs or policies have resulted from practices with AFNR systems.
Awareness Measurement	CS.02.02.03.a	Examine and summarize the components of the agricultural economy (e.g., environmental, crops, livestock, etc.).
Intermediate Measurement	CS.02.02.03.b	Assess the economic impact of an AFNR system on a local, state, national and global level.
Advanced Measurement	CS.02.02.03.c	Evaluate how positive or negative changes in the local, state, national or global economy impacts AFNR systems.
Standard	CS.03	Examine and summarize the importance of health, safety and environmental management systems in AFNR workplaces.
Indicator	CS.03.01	Identify and explain the implications of required regulations to maintain and improve safety, health and environmental management systems.
Awareness Measurement	CS.03.01.01.a	Research and explain the implications of regulatory, safety and health standards on AFNR systems (e.g., SDS, bioterrorism, etc.)
Intermediate Measurement	CS.03.01.01.b	Execute health, safety and environmental procedures to comply with regulatory and safety standards.
Advanced Measurement	CS.03.01.01.c	Evaluate how AFNR organizations/businesses promote improved health, safety and environmental management and determine steps to maintain compliance with regulatory and safety standards in AFNR situations.
Awareness Measurement	CS.03.01.02.a	Summarize the importance of safety, health and environmental management in the workplace.
Intermediate Measurement	CS.03.01.02.b	Analyze existing required regulations within an AFNR workplace.
Advanced Measurement	CS.03.01.02.c	Construct and implement methods to evaluate compliance with required safety, health and environmental management regulations.
Indicator	CS.03.02	Develop and implement a plan to maintain and improve health, safety and environmental compliance and performance.
Awareness Measurement	CS.03.02.01.a	Research and identify components required in health and safety performance plans.
Intermediate Measurement	CS.03.02.01.b	Analyze the effectiveness of health and safety performance plans of an AFNR workplace.
Advanced Measurement	CS.03.02.01.c	Create and implement a plan to improve safety, health and environmental management regulations in an AFNR workplace.
Awareness Measurement	CS.03.02.02.a	Examine and categorize examples of environmental compliance plans from AFNR workplace.
Intermediate Measurement	CS.03.02.02.b	Develop plans to improve environmental compliance and performance within an AFNR system.
Advanced Measurement	CS.03.02.02.c	Devise and implement a strategy to educate employees on environmental compliance and performance in an AFNR

		workplace.
Indicator	CS.03.03	Apply health and safety practices to AFNR workplaces.
Awareness Measurement	CS.03.03.01.a	Research and summarize the purposes and objectives of health and safety policies and procedures relevant to AFNR careers.
Intermediate Measurement	CS.03.03.01.b	Analyze and evaluate the impact of current health and safety practices of AFNR workplaces.
Advanced Measurement	CS.03.03.01.c	Create and implement a health and safety policy plan for AFNR workplaces.
Awareness Measurement	CS.03.03.02.a	Identify emergency response procedures for health and safety issues at AFNR workplaces.
Intermediate Measurement	CS.03.03.02.b	Assess various emergency response plan requirements for an AFNR workplaces and/or facility.
Advanced Measurement	CS.03.03.02.c	Create and implement a plan to communicate appropriate responses for health and safety situations within an AFNR workplace.
Awareness Measurement	CS.03.03.03.a	Examine and categorize examples of how to avoid health or safety risks in AFNR workplaces.
Intermediate Measurement	CS.03.03.03.b	Assess and apply first aid knowledge and procedures relevant to AFNR workplaces.
Advanced Measurement	CS.03.03.03.c	Conduct a survey and evaluate results of AFNR workplaces to identify structure of health and safety practices and number of employees certified in first aid training.
Awareness Measurement	CS.03.03.04.a	Examine and categorize the risk level of contamination or injury as associated with AFNR tasks in the workplace.
Intermediate Measurement	CS.03.03.04.b	Assess the safety priorities and select appropriate responses for different levels of contamination or injury at an AFNR workplace.
Advanced Measurement	CS.03.03.04.c	Create a plan to mitigate the level of contamination or injury identified as a risk in the workplace.
Indicator	CS.03.04	Use appropriate protective equipment and demonstrate safe and proper use of AFNR tools and equipment.
Awareness Measurement	CS.03.04.01.a	Identify and differentiate the appropriate protective equipment for the safe use and operation of specific tools and equipment (e.g. PPE, etc.).
Intermediate Measurement	CS.03.04.01.b	Analyze and demonstrate adherence to protective equipment requirements when using various AFNR tools and equipment.
Advanced Measurement	CS.03.04.01.c	Design and implement plans to ensure the use of appropriate protective equipment when using various AFNR tools and equipment.
Awareness Measurement	CS.03.04.02.a	Identify standard tools, equipment and safety procedures related to AFNR tasks.
Intermediate Measurement	CS.03.04.02.b	Complete the set up and adjustment for tools and equipment related to AFNR tasks.
Advanced Measurement	CS.03.04.02.c	Evaluate and select appropriate tools and equipment to complete AFNR tasks.
Awareness Measurement	CS.03.04.03.a	Read and interpret operating instructions related to operation, storage and maintenance of tools and equipment related AFNR tasks.

Intermediate Measurement	CS.03.04.03.b	Assess and demonstrate appropriate operation, storage and maintenance techniques for AFNR tools and equipment.
Advanced Measurement	CS.03.04.03.c	Devise and implement operation, storage and maintenance plans or schedules for AFNR tools and equipment.
Standard	CS.04	Demonstrate stewardship of natural resources in AFNR activities.
Indicator	CS.04.01	Identify and implement practices to steward natural resources in different AFNR systems.
Awareness Measurement	CS.04.01.01.a	Define stewardship of natural resources and distinguish how it connects to AFNR systems.
Intermediate Measurement	CS.04.01.01.b	Analyze available practices to steward natural resources in AFNR systems (e.g., wildlife and land conservation, soil and water practices, ecosystem management, etc.).
Advanced Measurement	CS.04.01.01.c	Devise strategies for stewarding natural resources at home and within community.
Awareness Measurement	CS.04.01.02.a	Read and interpret the definition of sustainability and summarize how it relates to AFNR activities.
Intermediate Measurement	CS.04.01.02.b	Analyze and assess sustainability practices that can be applied in AFNR systems (e.g., energy efficiency, recycle/reuse/repurpose, green resources, etc.).
Advanced Measurement	CS.04.01.02.c	Evaluate sustainability policies and plans and prepare summary of potential improvements for AFNR businesses or organizations.
Indicator	CS.04.02	Assess and explain the natural resource related trends, technologies and policies that impact AFNR systems.
Awareness Measurement	CS.04.02.01.a	Research and examine historical and current natural resources trends and technologies.
Intermediate Measurement	CS.04.02.01.b	Analyze natural resources trends and technologies and explain how they impact AFNR systems (e.g., climate change, green technologies, water resources, etc.).
Advanced Measurement	CS.04.02.01.c	Defend or challenge natural resources trends and technologies based upon an assessment of their impact on AFNR systems.
Awareness Measurement	CS.04.02.02.a	Research and summarize influential historical and current natural resources policies that impact AFNR systems.
Intermediate Measurement	CS.04.02.02.b	Create and defend a hypothetical natural resources policy that will impact current AFNR systems (e.g., for water resources, land use, air quality, etc.).
Advanced Measurement	CS.04.02.02.c	Design and implement strategies for implementing a new natural resources policy that will positively impact AFNR systems.
Standard	CS.05	Describe career opportunities and means to achieve those opportunities in each of the Agriculture, Food & Natural Resources career pathways.
Indicator	CS.05.01	Evaluate and implement the steps and requirements to pursue a career opportunity in each of the AFNR career pathways (e.g., goals, degrees, certifications, resumes, cover letter, portfolios, interviews, etc.).
Awareness Measurement	CS.05.01.01.a	Identify and summarize the steps to pursue a career in an AFNR pathway (e.g., self-assessment, set goals, etc.).

Intermediate Measurement	CS.05.01.01.b	Create a personal plan outlining goals and steps to obtain a career in an AFNR pathway.
Advanced Measurement	CS.05.01.01.c	Evaluate progress toward AFNR career goals and identify opportunities for improvement and necessary adjustments to one's plan of action
Awareness Measurement	CS.05.01.02.a	Examine the educational, training and experiential requirements to pursue a career in an AFNR pathway (e.g., degrees, certifications, training, internships, etc.).
Intermediate Measurement	CS.05.01.02.b	Analyze personal skillset and create a plan for obtaining the required education, training and experiences to obtain a career in an AFNR pathway.
Advanced Measurement	CS.05.01.02.c	Implement one's personal plan of action for obtaining the required education, training and experiences and evaluate progress to identify opportunities for improvement and necessary adjustments.
Awareness Measurement	CS.05.01.03.a	Research and summarize specific tools (e.g., resumes, portfolios, cover letters, etc.) and processes (e.g., interviews, applications, etc.) needed to pursue a career in an AFNR pathway.
Intermediate Measurement	CS.05.01.03.b	Assess personal goals, experiences, education and skillsets and organize them to produce the appropriate tools and develop the skills to effectively communicate about one's qualifications for an AFNR career.
Advanced Measurement	CS.05.01.03.c	Evaluate, update and improve a set of personal tools to reflect current skills, experiences, education, goals, etc. and complete the processes needed to pursue and obtain a career in an AFNR pathway.
Indicator	CS.05.02	Examine and choose career opportunities that are matched to personal skills, talents, and career goals in an AFNR pathway of interest.
Awareness Measurement	CS.05.02.01.a	Examine and categorize careers in each of the AFNR pathways.
Intermediate Measurement	CS.05.02.01.b	Assess personal skills and align them with potential career opportunities in AFNR pathways.
Advanced Measurement	CS.05.02.01.c	Interpret and evaluate the results of a personal career assessment and connect them to potential careers in AFNR pathways.
Awareness Measurement	CS.05.02.02.a	Research and describe careers in each of the AFNR pathways and choose potential careers connecting to personal interests and skills.
Intermediate Measurement	CS.05.02.02.b	Assemble and analyze examples of careers and related statistics on a local, state, national and global level.
Advanced Measurement	CS.05.02.02.c	Conduct interviews with career professionals within AFNR pathways and summarize the results.
Standard	CS.06	Analyze the interaction among AFNR systems in the production, processing and management of food, fiber and fuel and the sustainable use of natural resources.
Indicator	CS.06.01	Examine and explain foundational cycles and systems of AFNR.

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Awareness Measurement	CS.06.01.01.a	Research and explain the foundational cycles in AFNR (e.g., water cycle, nutrient cycle, carbon cycle, etc.).
Intermediate Measurement	CS.06.01.01.b	Analyze and explain how foundational cycles affect production, processing and management of food, fiber and fuel.
Advanced Measurement	CS.06.01.01.c	Teach others about the impact of foundational cycles within AFNR systems.
Awareness Measurement	CS.06.01.02.a	Examine and describe examples of systems within AFNR (e.g., sustainability, gate-to-plate, etc.).
Intermediate Measurement	CS.06.01.02.b	Analyze AFNR systems and determine their impact on producing and processing food, fiber and fuel.
Advanced Measurement	CS.06.01.02.c	Evaluate AFNR systems and predict how the systems may change or adapt in the future of food, fiber and fuel production based on current trends and data.
Indicator	CS.06.02	Analyze and explain the connection and relationships between different AFNR systems on a national and global level.
Awareness Measurement	CS.06.02.01.a	Summarize how AFNR systems connect and relate on a national and global level (e.g., soil, water, economic, etc.).
Intermediate Measurement	CS.06.02.01.b	Analyze differences between AFNR systems on a national and global scale.
Advanced Measurement	CS.06.02.01.c	Evaluate how AFNR systems impact each other on a national and global level.
Awareness Measurement	CS.06.02.02.a	Examine and summarize changes that happen in AFNR systems on a national and global level (e.g., using less irrigation water, reduction of inputs, etc.).
Intermediate Measurement	CS.06.02.02.b	Analyze the connections and relationships impacted when there is a change in an AFNR system on a national and global level.
Advanced Measurement	CS.06.02.02.c	Evaluate how changes in one AFNR system can benefit cost components of other systems on a national and global level.

Duration of Course: 1 year

Proposed Units of Credit: 1

Class sessions per Week: Everyday (5)

Prerequisites: None

Grade Level Appropriateness: 9-11

Projected Student Enrollment: 15-20 first year

Estimated number of sections: 1

Staff needed: 1

Course Addition Budget

Estimated Costs – Year 1

A. Staff

Number of Staff (not including CALT): _____ at _____ for _____ hours = \$ _____
Contractual Rate

B. Outside Consultants: _____ at \$ _____ per day = \$ _____

C. Materials & supplies needed for curriculum mapping
that are not available in your building. *CASE COST 9,8500*
+ STAFF TIME = \$ _____
42250 IN SCHOLARSHIPS APPLIC'S FROM

Note: Approved courses must go through the District's textbook selection process. Budget for textbook and other resources is not required at this time.

Recommendation:

1. Curriculum Area Lead Teacher

Name: *Deane Walker* Department *Science* Recommended / Denied
(Please circle) Date: *2/9/17*

2. Building Principal

Name: *Dr. [Signature]* Date: *2/9/17* Recommended / Denied
(Please circle)

3. Review by CALT group

Name: *Ron Andersen* Date: *2/9/17* Recommended / Denied
(Please circle)

4. Director of Instruction and Evaluation

Name: *Lynne Henry* Date: *2/15/17* Recommended / Denied
(Please circle)

5. Instructional Leadership Council

Name: *Lynne Henry* Date: *2/15/17* Recommended / Denied
(Please circle)

6. Superintendent

Name: *Nancy S. Ruscio* Date: *2-16-17* Recommended / Denied
(Please circle)

Comments: _____