

Game Changers in Agriculture

EDUC 2000, 1 Professional Development Credit

FEES:

Registration Fee to NDFB \$ 50.00

NDSU credit recording fee \$50.00

INSTRUCTOR:

Virginia Deitz, Phone: 701-799-1825, email: deitzv@gmail.com

GUEST

Jill D. Vigesaa, Phone: 701-799-5488, email: jill.vigesaa@gmail.com

LECTURER:

Lindsey Leker, Phone: 701-866-9477, email: lindsey.leker@ndsu.edu

TEXTBOOKS:

Food, Land & People 2nd edition Resources for Learning CD, FLP STEM Lessons, www.agclassroom.org Curriculum Matrix, National Youth Science Day Game Changers 4-H Facilitators Guide www.4-H.org/NYSD, www.foodlandpeople.org , www.ndaginclassroom.org

DESCRIPTION:

This course will allow teachers to apply National Ag Matrix STEAM lessons, Food, Land, and People (FLP) STEAM lessons, and 4-H Game Changers curriculum to make connections between computer science topics and agriculture and healthy living. This course will provide the opportunity to identify and use project or problem-based learning that will result in effective products or processes addressing real world problems with the application of STEAM to develop important life skills such as communication, resilience and leadership. The course will provide an overview of strategies, materials, curriculum development, and research related to assisting the Pre-K- 12th grade educators to explore opportunities to better understand the interdependence of agriculture, the environment, and human needs that naturally fit into the STEAM arena as an applied subject. Curriculum provided will address standards and benchmarks across multiple curriculum areas: language arts, science, computer science, health, art, consumer education, mathematics, social studies, geography, and more.

NATIONAL BOARD FOR PROFESSIONAL TEACHING STANDARDS:

The National Board for Professional Teaching Standards seeks to identify and recognize teachers who effectively enhance student learning and demonstrate a high level of knowledge, skills, abilities and commitments. This course aligns with all 5 of those standards.

1. *Teachers are committed to students and their learning.*
2. *Teachers know the subjects they teach and how to teach those subjects to students.*
3. *Teachers are responsible for managing and monitoring student learning.*
4. *Teachers think systematically about their practice and learn from experience.*
5. *Teachers are members of learning communities.*

OBJECTIVES:

1. Understand how agricultural concepts can be integrated into the curriculum by applying STEAM activities with real world applications. To heighten the awareness level of how agriculture impacts our raw resources, processing, and our relationship with food, land, and people.
2. Use STEAM focus lessons available in FLP, AITC Curriculum Matrix, and the 4-H National Youth Curriculum to guide group activities (large, small, and cooperative), provide for individual differences and learning styles, and evaluate students' learning.
3. Develop understanding, thinking skills, creativity, and improve communication skills in the learning environment with students.
4. Use FLP, AITC Curriculum Matrix, and the 4-H National Youth Program to demonstrate how they integrate curriculum and reference the lesson alignment to the National Core Standards. Develop an understanding of the relationship and ties to the ND State Standards.
5. Provide the opportunity to identify and use project or problem-based learning that covers topics from computer science to agricultural sustainability, food security etc. that will result in effective products or processes addressing real world problems. (See attached)

REQUIREMENTS:

1. Participate in a 2 hour, introductory and interactive video training with facilitator and colleagues. **(2 hours)**
2. Complete FLP Curriculum Connections review worksheet. **(2 hours)**
3. Complete Curriculum Planning & Evaluation Worksheet for three STEAM lessons, to be utilized in classroom. **(4 hours)**
4. Choose and present three lessons to students, from selections presented by the instructors. Lessons shall incorporate community connections, suggested videos, current literacy connections, power points, etc. to enhance delivery and strengthen STEAM and Project/Problem Based Learning aspects. **(4-5 hours)**
5. Submit samples of student work to instructor for assessment/feedback of lesson delivery. Post student work and participate in online media discussion with facilitators and colleagues demonstrating effective strategies for integrating the STEAM lessons into existing classroom curriculum. **(2 hours)**
6. Complete final reflective report section of Curriculum Planning Worksheet and provide review of one lesson during final 2 hours of interactive video with facilitator and colleagues. **(3-4 hours)**

EVALUATION:

The students will be evaluated on the completion of the requirements with point values stated. The attached course rubric will be utilized for individual student assessment and letter grading. Completion **April 22, 2020.**

**STUDENTS
WITH
DISABILITIES:**

Any students with disabilities or other special needs, who need special accommodations in this course are invited to share these concerns or requests with the instructor as soon as possible.

**ACADEMIC
HONESTY
STATEMENT:**

All work in this course must be completed in a manner consistent with NDSU University Senate Policy, Section 335: Code of Academic Responsibility and Conduct

https://www.ndsu.edu/education/teacher_education/academic_integrity_statement/

Teaching & Learning Strategies

Project/Problem-Based Learning Plans

- Project/Problem-Based in the Context of Agriculture ([PowerPoint Slides - National Conference 2018](#))
 - Shortage of Agricultural Production Workers (robotics)
 - [Shortage of Agricultural Professionals](#) (career intervention)
 - Cafeteria Waste - [Supportive Lessons in the Matrix](#)
 - Landscape Problems
 - Farm Mapping - Agrotourism
 - [Culinary Concepts - State Agricultural Food Project Plan](#)
 - [Energy Bar Exploration Plan](#)
 - Growing Food for Space - [Supportive Companion Resources in the Matrix](#)
 - Irrigation Problems - [Supportive Lesson Plans in the Matrix](#)
 - Water Quantity - [Supportive Lessons Plans in the Matrix](#)
 - Water Quality - Coming soon!
 - School Gardens - [Supportive Lessons Plans in the Matrix](#)
 - Community Hunger - [Supportive Lessons Plans in the Matrix](#)
 - Aquaculture/Aquaponics - [Supportive Lessons Plans in the Matrix](#)
 - Hydroponics/Aeroponics - [Supportive Lessons Plans in the Matrix](#)
 - Biofuel - [Supportive Lessons Plans in the Matrix](#)
 - Embryology - [Supportive Lesson Plans in the Matrix](#)
 - Game Changers- [National Youth Science Day](#)

Instructional Tools for Learning

- [Teaching, Skill Building, and Assessment Strategies](#)
- [Learning Lingo](#)