DEPARTMENT: ECE  COURSE NUMBER: EDU 668  CREDIT HOURS: 3

I. TITLE: Agriculture and the Environment in the Classroom

II. CATALOG DESCRIPTION: The study of agriculture and the environment as it relates to origination and production of food and fiber and how this connects to topics, skills, and concepts that are included in the K-12 classroom. This program is conducted in conjunction with the Kentucky Department of Agriculture (field experience required). Prerequisites: Admission to the graduate program as a regular or visiting student or permission of instructor.

III. PURPOSES: To provide teachers with a fundamental understanding of the growing, processing, and distribution of food and fiber and the opportunities and consequences this represents to living sustainably.

IV. COURSE OBJECTIVES: The behaviors indicated below are understood to be reflective of but not limited to those advocated by the Kentucky Education Reform Act guidelines. Curriculum connections will be made with KERA Initiatives: Kentucky Learner Goals and Academic Expectations, Program of Studies, and Core Content. Following each objective, and enclosed in parentheses, are numbers which reference Kentucky’s Experienced Teacher Standards (ETS) and the North American Association for Environmental Education’s (NAAEE) Guidelines for the Initial Preparation of Environmental Educators. The students will be able to:

1. Describe and provide examples of the importance of agriculture as it relates to our society’s standard of living. (ETS 1-4, 7-9/ NAAEE 1-4)
2. Identify, compare and contrast the roles agriculture has in the consumption and production of renewable resources to achieve sustainability. (ETS 1-3, 5-8/ NAAEE 1-6)
3. Provide linkages between agriculture and daily life as it relates to producing, growing, distributing food and fiber. (ETS 1-4/ NAAEE 1-4)
4. Show how agriculture has evolved over the past two centuries in the United States and the impact of this evolution upon society. (ETS 2-4, 7-9/ NAAEE 1-4)
5. Provide examples of best management practices and its relation to agricultural production and the waste cycle. (ETS 2-4/ NAAEE 1-4)
6. Develop and apply a unit of study with hands-on experiences that connects the K-12 Core Content for Assessment to the production and distribution of food and fiber. (ETS 1-4, 7-10/ NAAEE 1-6)

V. CONTENT OUTLINE:


2 North American Association for Environmental Education, a specialty group member of the National Council for the Accreditation for Teacher Education (NCATE)
A. Class Participation: Active participation in this class experience entails students being actively and positively engaged in discussions and activities during the class including:

1. Reading assigned and/or self-selected materials and identifying pertinent questions and concerns.
2. Active and positive participation in large and small group discussion and presentations.
3. Demonstration of acceptable performance on writing exercises.
4. Regular and punctual attendance at in-class and/or extra-class events and activities.
5. Active and positive participation in field work experiences.

B. Teacher Activities:

1. Large group instruction
   a. Energy Cycle
   b. Water Cycle
2. Small group instruction
   a. From Fiber to Fashion (Project Food Land and People, FLP)
   b. Tomatoes to Ketchup, Chickens to Omelettes (FLP)
3. Simulations
   a. Farming in the 1800’s Simulation
   b. Chicago Board of Trade Commodities Market Simulation
4. Videotapes:
5. Guest speakers:
   a. Mr. Steve Alcott, Director, Calloway County Conservation Office and U.S. Natural Resource Conservation Service
   b. Ms. Rayetta Boone, Director, Ag and the Environment in the Classroom, Inc., and Director of Agriculture Education Programming for The Kentucky Department of Agriculture
   c. Ms. Judy Haydn, FLP Facilitator and Economics America Advocate and Kindergarten teacher in Davies County Schools.
   d. Dr. Jack Morgan, Economics America, Emeritus Professor, University of Louisville
   e. Dr. Jay Morgan, Associate Professor, College of Agriculture, Murray State University
   f. Dr. John Murdock, Director of the West Kentucky Aquaculture Cooperative, Lynngrove, KY
   g. Mr. Rick Murdock, CEO of GIS/GPS and Agriculture Company, Lynngrove, KY
   h. Mr. Jim Stahler, dairy, poultry, and row crop farmer, Calloway County, KY
   i. Mr. Dan Stone, Head Interpreter, 1850’s Homeplace, U.S. Forest Service, Land Between the Lakes

VI. INSTRUCTIONAL ACTIVITIES:
Activities in the Calendar

1. Introduction: Distributions of Materials and Readings
2. Multi-media Program – “Scarecrow” (challenges of the family farm)
3. Where Do We Get Our Food? (Pizza Culture)
4. Pullen Farm – What it teaches and what is learned about farming
5. Aquaculture – alternative crops and production and distribution
   a. Techniques of using global positioning systems and satellite support to improve yield in a sustainable way
   b. The use of technology to sustain the air, land, and the water
7. Top soil, its function in food production, its role in non-point source pollution
8. Farming practices in the 1800’s through the 1900’s
9. Economics of farming
10. The Chicago Grain Market and Its Impact Upon Production and Consumption of farm products
11. Production and use of ethanol/biodiesel
12. Tracing of products from its natural resources to its disposal
13. Use of animal bi-products to produce useable resources
14. Farmers and best management practices (rules and regulations)
15. Impact of urban sprawl upon food production and green space
16. Waste and the problems and opportunities it provides
17. Composting on small and large scales and its impact on the waste stream and land fills

VII. FIELD, CLINICAL AND/OR LABORATORY EXPERIENCES: Students are required to attend all field and in-class sessions. Field trips are made throughout Western Kentucky within a radius of approximately 60 miles of Murray State University.

VIII. RESOURCES: A number of resources and resource persons will be used in this class to provide a number of opportunities to observe, interact, collect data, make inferences, and reflect. The following are resources:

a. Four Rivers Watershed Watch
b. KATE Computer Laboratory
c. Kentucky Agriculture and the Environment in the Classroom Mobile Science Activity Center
d. Kentucky Corn Growers Association
e. Kentucky Division of Conservation
f. Kentucky Division of Energy
g. Kentucky Division of Water
h. Kentucky Farm Bureau
i. Kentucky 4-H
j. Kentucky Poultry Federation
k. Kentucky Soybean Association
l. KY Thoroughbred Association
m. Mead Westvaco Environmental Education Curriculum Library
n. Murray State University College of Science and Engineering Technology
IX. GRADING PROCEDURES:

A. The class is graded on a letter grade basis (A through E). There are two areas that will be formally assessed, Group/Cooperative Learning/Class Participation and a Unit of Study:

Description of Assignments:

1. Group/Cooperative Learning/Class Participation: in order to maximize learning in this class, each participant must be actively and positively engaged in discussions and activities during the class including:
   (This constitutes 50 percent of the final grade)
   a. Reading assigned and/or self-selected materials and identifying pertinent questions and concerns.
   b. Active and positive participation in large and small group discussion and presentations.
   c. Demonstration of acceptable performance on writing exercises.
   d. Regular and punctual attendance at in-class and/or extra-class events and activities.
   e. Active and positive participation in field work experiences.

2. Unit of Study: each participant will be asked to develop a unit of study based on an agricultural/environmental principal with special emphasis on “sustainability”.
   (This constitutes 50 percent of the final grade)
   a. An initial concept about the unit must be pre-approved by the instructor before it is developed into a full fledged product.
   b. The unit must conform to the Kentucky Department of Agriculture’s format.
   c. It must be at least one week in length with daily lessons of at least 30 minutes in length.
   d. The unit must be delivered in a classroom with a pre-post test assessment and a comparison of gains made as a direct result of instruction.
   e. A final evaluation and report will be constructed and delivered at the conclusion of the unit. This will be submitted to the instructor and the Kentucky Agriculture and the Environment in the Classroom Office in Frankfort, KY.

Assessment of Graded Items:
1. **Group/Cooperative Learning/ Class Participation:** Assessment will be made on the basis of how the following questions are answered by the instructor:
   a. Is the student prepared for the field excursions and classroom activities with all necessary materials and equipment?
   b. Is the student actively engaged in teaching and learning experiences during the excursions and classroom activities?
   c. Does the student demonstrate a knowledge of developing instructional experiences in the classroom, out-door classroom?
   d. Is the student able to connect agriculture/environmental education to Kentucky’s Program of Studies and the Core Content alignment of Project Food, Land and People?
   e. Does the student successful articulate the interdisciplinary nature of environmental education and environment as an integrating context?
   f. Can the student successful make use of agricultural/environmental terminology?
   g. Can the student visualize how to construct environmental education activities that are age appropriate, hands-on, and that model the learning cycle?

**X. ATTENDANCE POLICY:** This course will abide by the current attendance policy in the *MSU Graduate Bulletin*.

**XI. ACADEMIC HONESTY POLICY:** This course will abide by the current academic honesty policy in the *MSU Graduate Bulletin*.

**XII. TEXT AND REFERENCES:** *Project Food, Land and People*

**XIII. PREREQUISITES:** Admission to the graduate program or permission of instructor.

**XIV. STATEMENT OF AFFIRMATIVE ACTION AND EQUAL OPPORTUNITY:** Murray State University does not discriminate on the basis of race, color, national origin, sex, religion, marital status, age, or disability in employment, admission, or the provision of services, educational programs and activities, and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities an equal opportunity to participate in all programs and activities. For information regarding nondiscrimination policies contact the Office of Equal Opportunity, 270-809-3155.