KENTUCKY STATE UNIVERSITY
FACULTY SENATE
CURRICULUM COMMITTEE

FSCC# 16-17-26 Effective Date Fall 2017

CURRICULAR/PROGRAM CHANGE TRACKING DOCUMENT

ACADEMIC UNIT: AFE/CAFSSS DATE SUBMITTED: 02/03/2017

1. **BRIEF EXPLANATION OF PROPOSED CHANGE:**

The proposed change in the Environmental Systems Option within the AFE major will enhance the current Environmental Systems Option curriculum to prepare young scientists with knowledge and critical thinking skills, applied research skills, and leadership capabilities.

2. **CHECK ITEM(s) BELOW FOR CHANGES DESIRED:**

- ☐ New Degree Certification
- ☐ Deletion of Degree or Certification
- ☐ New or Revised Major
- ☐ Deletion of Course
- ☐ New or Revised Minor
- ☐ Revised Degree or Certification
- ☐ New Course(s)
- ☐ Revised Course
- ☐ Course Level (number) Change
- ☒ x (specify below): change in Option curriculum ladder

I. Chair's/Director's Action:

☑ Approved ☐ Disapproved ☐ Returned for Recommended Change

Chair's (Signature) John D. Sedlacek Date: 2/7/17

II. Curriculum Committee Action:

☑ Approved ☐ Disapproved ☐ Returned for Recommended Change

Chairperson: (signature): [illegible] Date: 2/7/17

III. Faculty Senate Action:

☐ Approved ☐ Disapproved ☐ Returned for Recommended Change

Senate President (signature): _____ Date: _____

IV. Dean's Action:

☐ Approved ☐ Disapproved ☐ Returned for Recommended Change

Dean (signature): _____ Date: _____

V. Vice President Academic Affairs (not required for courses):

☐ Approved ☐ Disapproved ☐ Returned for Recommended Change

Provost/VPAA (Signature): _____ Date: _____

IV. President's Action (not required for courses):

☐ Approved ☐ Disapproved ☐ Returned for Recommended Change

President (Signature): _____ Date: _____

KENTUCKY STATE UNIVERSITY
FACULTY SENATE
CURRICULUM COMMITTEE

PROGRAM CHANGE PROPOSAL

ACADEMIC UNIT: Agriculture & Natural Resources/CAFSSS

DATE PREPARED: 02/03/2017

PRIMARY AUTHOR(S): Buddhi Gyawali

ACADEMIC DISCIPLINE FACULTY APPROVED:
(Committee Chairperson's Signature) _____ 2/6/17 **(Date)**

CHAIRPERSON/ DIRECTOR APPROVED:
(Chairperson's/Director's Signature) John D. Sedlacek 2/6/17 **(Date)**

1. DESCRIPTION OF CHANGE

The Division of Agriculture and Natural Resources requests approval for a revised 22-credit hour curriculum ladder for the AFE-Environmental Systems Option. The revised ladder is below.

Proposed Changes:

Required Option Courses: Students will be able to choose either BIO 316 Ecology or BIO 417 Ecological Field Methods in the revised ladder. AFE students need to complete CHE 101/110 and MAT 115 or MAT 176 prior to taking BIO 316 or BIO 417. AFE 366 Climate Change Studies will be introduced as a required course. AFE 334 Soil Science and AFE 480 Intro to GIS will remain as required courses. The current required courses AFE 318 and AQU 413 will be moved to Option Electives.

Option Electives: BIO 417 will remain as an Option Elective course so that students who take the BIO 316 Ecology course can take BIO 417 as an Option Elective. AFE 489 Remote Sensing of Environment will be introduced as an Option Elective. Five additional courses: AFE 318 Environmental Entomology, AQU 413 Aquatic Ecology, AFE 445 Agriculture and Energy, AFE 425 Organic Agriculture, and AQU 460 Water Quality Management will be suitable Option Electives. Students can choose any three of these option electives to meet the requirements.

Upon approval, the CAFSSS curriculum committee recommends implementing the required changes for Fall 2017 and updating Banner and the 2016-2017 Catalog with the suggested changes.

Current Ladder: Table 1

Courses	Courses	Credits	Changes
BIO 316	Ecology	4	
AQU 480	Intro to GIS	3	
AFE 334	Soil Science	3	
AFE 318 OR AQU 413	Environmental Entomology OR Aquatic Ecology	3	To be moved to Option Electives
Option Electives			
AFE 425	Organic Agriculture	3	To be removed
BIO 417	Ecological Field Methods	4	
AFE 445	Agriculture & Energy	3	
Total Credits		**23**	

Proposed Revised Ladder: Table 2

Courses	Required (4 courses, 13 hours)	Credits	Course Objectives
BIO 316 OR 417	Ecology OR Ecological Field Methods	4	BIO 417 is added. Students can take either BIO 316 or BIO 417
AFE 334	Soil Science	3	No Change
AFE 366	Climate Change Studies	3	Added as a required course
AQU 480	Intro to GIS	3	No Change
Acceptable Option Electives (3 courses, minimum 9 credit hours)			
BIO 417	Ecological Field Methods	4	No Change
AFE 489	Remote Sensing of Environment	3	Added as an option elective
AQU 413	Aquatic Ecology	3	Added as an option elective
AFE 425	Organic Agriculture	3	No Change
AFE 318	Environmental Entomology	3	Added as an option elective
AFE 445	Agriculture & Energy	3	No Change
AQU 460 & AQU461	Water Quality Management and Lab	4	Added as an option elective
Total Credit hours required		**22 to 24 hours**	

2. **STARTING WITH:**

   *__ Fall, __ Spring, ____ Summer, 2017__ Year

3. **EXPLANATION AND JUSTIFICATION FOR REQUESTED CHANGE**

Purpose and Justification

The purpose of revising the Environmental Systems option is to integrate more environmentally/ecologically related courses and additional applied and experiential learning-based experiences into the AFE Environmental Systems Option. The proposed revisions will help develop high-value skill sets to prepare young scientists at the State, regional, and national levels with additional knowledge, research skills, and leadership capabilities in environmental systems as well as assist CAFSSS to increase enrollment in its undergraduate and graduate programs.

Background

The CAFSSS received a teaching capacity grant from USDA/NIFA in 2013 to enhance and strengthen the current Environmental Systems Option within the AFE degree. The current Environmental Systems Option ladder (Table 1) does not include Climate Change or Remote Sensing course work in its curriculum. These courses have been developed and approved by KSU, but are not a part of the current curriculum ladder. Adding these courses to the AFE Curriculum will significantly strengthen it. In addition, the revised Environmental Systems Option will strengthen the linkage with the existing Masters in Environmental Studies (MES) graduate curriculum and establish a mechanism to support, as well as strengthen the MES program. The revised curriculum ladder will also broaden the student research experience, and enhance the learner-centered curricula strengthening KSU's agricultural and environmental science programs. This will attract a more diverse student body wanting to pursue careers in environmental science.

Impacts

The revised Environmental Systems curriculum ladder (Table 2) is relevant to several disciplines and has a broad scope of applicability. Students will be engaged in research and monitoring the environment, water quality, and other natural resources such as land, forests, minerals, and solar energy. Promotion of student understanding of the interactions among food systems, agriculture, and the environment will increase their research, analytical, technical, and problem-solving skills and abilities, as well as prepare them for competitive STEM careers. Increasing demand for cross-disciplinary courses and research opportunities have emerged from KSU's other academic Divisions (e.g., MASC, Behavioral and Social Sciences, and Business), state government agencies, high school teachers, and paraprofessionals. The instructors for the proposed courses will collaborate with faculty from other Divisions to identify teaching and experiential research needs and how the proposed ladder revisions can be integrated into curricula and their senior research or capstone projects. Students will have additional hands-on environmental and geospatial related experiences to prepare them for graduate programs or careers. This enhanced option will build KSU's capacity to pursue additional federal and non-federal funding opportunities to further grow and improve the instruction in agricultural and environmental science disciplines, as well as build partnerships with different agencies (e.g., EPA, USGS, NRCS, and National Weather Service) for student internship opportunities.