

ATTCHMENT 4C-1

LETTER OF NOTIFICATION - 10

GRADUATE CERTIFICATE PROGRAM

(12-18 SEMESTER CREDIT HOURS)

1. Institution submitting request: **University of Arkansas - Fayetteville**

2. Contact person/title:

Dr. Sharon L. Gaber, Provost and Vice-Chancellor for Academic Affairs, ADMN 422, University of Arkansas, Fayetteville, AR 72701

3. Phone number/e-mail address:

Dr. Sharon L. Gaber: Phone: 479-575-5459, e-mail: sgaber@uark.edu

4. Proposed effective date: **15 August 2012**

5. Name of proposed Graduate Certificate Program (Program must consist of 12-18 semester credit hours from existing graduate courses).

Graduate Certificate in Sustainability

6. Proposed CIP Code: **30.3301, Sustainability Studies**

7. Reason for proposed program implementation?

In February 2007, the University of Arkansas – Fayetteville was among the first 100 institutions nationally and the first institution in Arkansas to sign the American College & University Presidents Climate Commitment. Among the pledges included in this commitment was a promise to develop academic programs in sustainability across the curriculum. In addition, sustainability has emerged as one of the Grand Challenges of the 21st Century; a significant global cultural movement to embrace sustainable philosophies and move society toward more sustainable practices now exists. Throughout the United States, even business leaders (e.g. Walmart and many other Fortune 500 corporations) recognize the imperative to develop sustainability and sustainable lifestyles as world resources dwindle while global population grows. This proposed Graduate Certificate will enhance existing graduate degree programs at the University of Arkansas while also providing students with state-of-the-art instruction in theories and practices of sustainability. These skills will enhance marketability of UA graduate programs and employability of UA graduates in the 21st Century.

8. Provide documentation that proposed program has received full approval by licensure/certification entity. (A graduate certificate offered for teacher licensure must be approved by the Arkansas Department of Education prior to consideration by the Coordinating Board).

There is no licensure/certification entity for Graduate Certificates in Sustainability

9. Will this program be offered on-campus, off-campus, or via distance delivery?

On-campus

10. Provide the following:

a. Curriculum outline - List of required courses

Hours Courses

- 3 WCOB 5023 Sustainability; Required course for the Graduate Certificate**
12 Elective courses with sustainability focus selected from a broad menu of offerings in four thematic areas:
Sustainability of Social Systems
Sustainability of Natural Systems
Sustainability of Built Systems
Sustainability of Managed Systems

In an effort to maintain relevance and timeliness of the Graduate Certificate in Sustainability program, new graduate courses developed with sustainability focus can be considered for inclusion among the menu of approved courses by submitting course descriptions and course syllabi for review to the Sustainability Curriculum Steering Committee (SCSC). The SCSC will issue annual calls for courses to be considered and will review submitted course materials to determine their appropriateness to the Graduate Certificate. The SCSC will also place new courses in the appropriate thematic area within the catalog description of the Graduate Certificate in Sustainability.

Elective courses must be completed in at least two thematic areas. In addition, 9 of these 12 hours must be in courses numbered 5000 or above. Complete lists of elective courses by thematic areas are presented below:

List of Available Elective Courses (students choose 12 hours from at least 2 thematic areas from menus below; at least 9 hours must be chosen from courses numbered 5000 or above):

Sustainability of Natural Systems Courses

Course #	Course Title	Hours	Prerequisites
BENG 5933	Environmental and Ecological Risk Assessment	3	Graduate Standing
BENG 5351	Sustainability Seminar	1	CHEM 1123
BIOL 4154	Biology of Global Change Biology	4	BIOL 1543/1541L, lecture and recitation required
BIOL 5843	Conservation Biology	3	BIOL 3863
BIOL 5814	Limnology	4	CHEM 1123/CHEM 1121L or equivalent and 12 hours of biological sciences
BIOL 5933	Global Biogeochemistry: Elemental Cycles and Environmental Change	3	College level chemistry or biochemistry and ecology
CSES 5264	Microbial Ecology	4	BIOL 2013 and BIOL 2011L
CSES 5224	Soil Physics	4	CSES 2203 and MATH

1203

ENDY 5063	Climate Through Time	3	GEOG 4363 or equivalent
ENDY 5113	Global Change	3	Graduate Standing
ENDY 6013	Environmental Dynamics	3	Graduate Standing
GEOS 5423	Remote Sensing of Natural Resources	3	GEOS 4413 is recommended

Sustainability of Managed Systems courses

Course #	Course Title	Hours	Prerequisites
AGEC 4163	Agricultural and Rural Development	3	AGEC 1103 (or ECON 2023)
AGEC 4413	Economics of Environmental Management	3	AGEC 1103 (or ECON 2023)
AGEC 5133	Agricultural and Environmental Resource Economics	3	3 hours Agricultural Economics or Economics at 3000 level or higher or PhD standing
CSES 4103	Plant Breeding	3	Corequisite: Lab component. Prerequisite: ANSC 3123 or BIOL 2323
CSES 4133	Weed Identification, Morphology, and Ecology	3	Lab component. Prerequisite: CSES 2103 (or HORT 2003)
CSES 4143	Principles of Weed Control	3	Corequisite: Lab component. Prerequisite: CHEM 2613 and CHEM 2611L and CSES 2003
CSES 4224	Soil Fertility	4	Pre- or Corequisite: CHEM 1123/1121L. Corequisite: Lab component. Prerequisite: CSES 2201L and CSES 2203
CSES 5023	Weed Physiology and Herbicide Resistance in Plants	3	Corequisite: Lab component. Prerequisite: CSES 4143 and (BIOL 4304 or CHEM 5813)
CSES 5033	Advanced Soil Fertility and Plant Nutrition	3	BIOL 4304 and CHEM 2613 and CHEM 2611L

MGMT 4243	Ethics and Corporate Responsibility	3	Graduate Standing
WCOB 510V	Cross Sector Collaboration for Sustainability	3	Graduate Standing

Sustainability of Social Systems courses

Course #	Course Title	Hours	Prerequisites
AGEC 5153	The Economics of Public Policy	3	Graduate Standing
CVEG 4263	Environmental Regulations and Permits	3	Prerequisite: CVEG 3243
ENDY 6033	Society and Environment	3	Graduate Standing
GEOS 4693	Environmental Justice	3	Graduate Standing
HIST 4773	Environmental History	3	Graduate Standing
PLSC 5153	Environmental Politics and Policy	3	Graduate Standing
PLSC 5173	Community Development	3	Graduate Standing
RSOC 4603	Environmental Sociology	3	Graduate Standing
SOCI 5113	Seminar in Social Inequality	3	Graduate Standing

Sustainability of Built Systems courses

Course #	Course Title	Hours	Prerequisites
BENG 5623	Life Cycle Assessment	3	Graduate Standing
CVEG 510V	Civil Engineering for Sustainability	3	To be determined
INEG 4583	Renewable Energy: Green Power Sources	3	Graduate Standing
LARC 5043	Sustainable Housing	3	None
LARC 5063	Alternative Stormwater	3	None

	Mngmt		
ARCH 4023	Sustainable Design	3	None

b. New course descriptions

No new courses; Graduate Certificate in Sustainability utilizes existing courses.

c. Program goals and objectives

The Graduate Certificate in Sustainability is conceived as an outstanding graduate curriculum that will provide students with foundational knowledge of sustainability through a broad spectrum of coursework in sustainability and introduce them to analytical skills useful to the solution of societal issues related to sustainability. Students will be challenged and enabled to address significant problems in sustainability through rigorous, graduate-level coursework that will be interdisciplinary, drawing from faculty and coursework across various colleges of the university. The Graduate Certificate in Sustainability is accessible to a broad cross-section of students admitted to the University of Arkansas Graduate School seeking post-baccalaureate degrees in other disciplines or, alternatively, seeking only to complete the Graduate Certificate in Sustainability. The proposed graduate certificate was developed using existing faculty expertise and courses at the University of Arkansas main campus in Fayetteville.

d. Expected student learning outcomes

Students who complete the Graduate Certificate in Sustainability will be expected to:

- 1. Articulate commonly accepted definitions of sustainability and discuss various nuances among those definitions as well as engage in analytical thinking to enhance sustainability measures;**
- 2. Address real-world problems of sustainability to reinforce their professional interests;**
- 3. Have an understanding of the interdisciplinary nature of sustainability issues, particularly as they pertain to the thematic areas of knowledge addressed by the graduate certificate (sustainability of natural systems, sustainability of managed systems, sustainability of built systems, and sustainability of human social systems);**
- 4. Be conversant regarding acquisition and analysis of data pertinent to measuring sustainability;**
- 5. Communicate orally, and in writing organized thoughts defining sustainability measures and technical aspects of sustainability;**
- 6. Identify potential strategies to address sustainability using appropriate analytical methods and data and provide results of analyses of data using novel metrics or statistics;**
- 7. Make recommendations, based on data analysis and interpretation, to advance sustainability of individuals or institutions;**
- 8. Develop methods, techniques and tools for implementing sustainability initiatives.**

11. Identify off-campus location. **Not Applicable**

President/Chancellor Approval Date:

Board of Trustees Notification Date:

Chief Academic Officer:

Date:

Specify the amount of the additional costs required, the source of funds, and how funds will be used.

PROPOSED FUNDING SUBMITTED TO PROVOST - Graduate Certificate in Sustainability

Personnel	Months	Rate	Amount
*Co-Director, Boss	1.125	7632	8586
*Co-Director, Messadi	1.125	8111	9125
**Admin. Spec. I	6	1500	9000
***Grad. Asst.	4.5	1333.33	6000
***Grad. Asst.	4.5	1333.33	6000
Total Salaries			30125
* Admin of Grad certificate, co-chair steering cmte (note: should be 12.5% of a 9-month faculty sal.)			
** Half-time; clerical, registrations, student records, recruiting			
*** Assist with teaching/grading duties req'd courses and elective courses			
Fringe Benefits	Rate	Percent	Amount
Co-Director	7820	0.247	2121
Co-Director	9125	0.247	2254
Admin. Spec. I	9000	0.247	2223
Grad. Asst.	6000	0.039	234
Grad. Asst.	6000	0.039	234
Total FB			7066
Tuition Remission	Months	Rate	Amount
Grad. Asst. 1	7.5	325	2438
Grad. Asst. 2	7.5	325	2438
Total TR			4875
Program Maintenance&Evaluation			Amount
Publications, recruitment materials & travel, website design & maintenance			5000
Printing, office supplies, telephone service and program assessment			3000
Total PM&E			8000
TOTAL BUDGET			50065

Budget Justification:

Co-Directors: Owing to the interdisciplinary nature of the Graduate Certificate in Sustainability, co-directors are proposed in order to maintain the interdisciplinary focus and interdisciplinary integrity of the program by providing administrative balance and consideration to all stakeholders. Co-Directors will have responsibility for all program oversight functions, program quality and data reporting, program evaluation and assessment, and will co-chair the University of Arkansas Sustainability Curriculum Steering Committee. The co-directors will share an equal split of financial resources for a single Program Director position to be created for this program. In accord with UA policies and procedures, the Co-director salary will be based on 25% of the 9-month faculty salary (Each co-director will be awarded salary equivalent to 12.5% of the 9-month faculty salary).

Administrative Specialist I: Financial resources for a 0.5-time Administrative Specialist I are requested. Duties of this program staff person will be maintaining student records, referring inquiries regarding the program to appropriate steering committee members or faculty, general file keeping, assistance with program recruitment, assistance with program data collection and compilation in aid to assessment and evaluation needs.

Graduate Assistants: Two 0.25-time graduate assistants are requested to provide teaching support to faculty involved in required and elective courses. It is recommended that these GA's be assigned to the Environmental Dynamics PhD program (ENDY) such that individuals chosen for these positions will generally be doctoral students in the ENDY program, possess Master's degrees so they can assist teaching/grading in graduate courses, and are familiar with foundational principles of sustainability. The requested stipend is equal to the base stipend of other GA positions in the ENDY program.

Fringe Benefits are requested at standard rates for unclassified/classified personnel and graduate assistants at UA.

A Program Maintenance budget of \$8,000/year is requested to offset costs of telephone service, copying for curriculum needs, general office supplies, printing of recruitment materials for distribution to campus stakeholders and university recruitment initiatives, program web site development and continuous maintenance, and other miscellaneous costs associated with program administration.

Tuition Remission for graduate assistantships is requested at the rate commensurate with 0.25-time assistantships (7.5 hours of graduate tuition annually).

Source of funds: Office of the Provost and Vice-Chancellor for Academic Affairs