Request for Authorization to Establish a Bachelor of Science in Soil and Land Development at North Carolina State University

North Carolina State University requests authorization to establish a B.S. in Soil and Land Development degree program (CIP 01.1299).

Program Description

NCSU's Department of Soil Science is proposing a Bachelor of Science degree in Soil and Land Development to support the needs of private companies and regulatory agencies that deal with land evaluation issues for real estate development. Soil consultants evaluate land for residential development, primarily in suburban areas that are beyond the reach of municipal sewer systems. The proposed program is **not** designed to train real estate agents. Students in this new major will be trained in both land evaluation techniques as well as in the legal and financial aspects of real estate development. The new program will have two concentrations: Soil Science, and Land Development. It is expected that some graduates of the program will be prepared to start their own consulting companies.

UNC Tomorrow Relevance

The proposed degree program supports several mandates of the UNC Tomorrow initiatives, including mandates addressing community development, health, and the environment (Mandates 4.4.1, 4.4.2, 4.4.3, 4.5.1, 4.5.2, 4.6.1, and 5.2). The proposed degree program will train students to evaluate land quality, and thereby determine a property's suitability for residential developments that enhance economic growth and minimize environmental impacts. Most lands that will be developed over the next 30 years in North Carolina will be in suburban and rural areas not served by municipal sewers; state and federal laws require that certain critical aspects of land quality be assessed on every lot in these developments. In summary, this program will train students to identify how lands can best be used to benefit North Carolinians while maintaining a community's public health and environmental quality and also preserving wetlands and water quality.

Highlights from UNC-GA Data Template

There are no undergraduate major programs in Soil and Land Development currently offered in North Carolina. (In fact, this will be the first program of its type in the nation.) In the past three years, NCSU has discontinued one doctoral, one baccalaureate, and eight masters programs, and has established one doctoral, four masters, and five baccalaureate programs.

Outcome of Consultation with Disciplinary Panels

The panel included faculty members from ECU and NCA&T in addition to the NCSU faculty presenters. Overall comments were quite positive, with consensus agreement on the need for this degree program. Panel members made thoughtful suggestions for ways to strengthen the curriculum, and NCSU agreed to attempt to implement these good suggestions.

Student Demand

The increasing numbers of recent transfer students from within and outside NCSU who have indicated interest in a degree program with the proposed curriculum demonstrates the student interest in this new program. The only current solution to meeting these students' needs is to try to adapt existing degree programs, but this approach is inadequate because the breadth and depth of content addressed by the proposed program is not achieved. The following section discusses the significant career opportunities available to graduates of the proposed program.

Opportunities for Graduates of the Program

Soil scientists who graduate from this program will evaluate land for residential and commercial development. They will examine property where houses are to be built and where waste materials must be disposed on-site using septic systems. Over 40,000 septic systems are installed in NC each year, and soil scientists had to inspect and approve the soils at each site. In NC, soil scientists conducting on-site evaluations must be licensed by the state. There has been a shortage of such soil scientists in NC, requiring consulting companies to seek soil scientists from out of state. In fact, the program was developed in direct response to soil consultants and environmental health specialists who became concerned that too few soil scientists are being trained in land quality evaluation in North Carolina.

Resource Implications

Resource needs: It is anticipated that by its fourth year, the program will enroll 50 full-time upper division students. Ongoing financial support for the new program will be mainly enrollment growth funding. An instructor position is requested beginning with the third year of the program to assist with teaching a required class that is currently being taught by volunteer extension faculty.

Resources allocated: Except for the one instructor position noted above, no new courses, faculty, facilities, or library resources are needed to support this proposed degree program.

Estimated cost to the State: As is the case with most baccalaureate programs, many of these Soil and Land Development majors (perhaps 70% or more) will likely come from students who are already enrolled at NCSU. Assuming 30% of the 50 majors are students who would not have attended NCSU otherwise, in the fourth year, according to the enrollment funding formula, new state appropriations of approximately $120,000 will be generated by this program.

Recommendation

It is recommended that the Board of Governors approve North Carolina State University's request to establish a B.S. in Soil and Land Development degree program (CIP 01.1299) contingent upon the availability of funding.

General Information Template for Academic Program Review

Degree Area and Level:

B.S. Soil and Land Development (CIP 01.1299) at North Carolina State University

Addressing UNC Tomorrow:

This proposed program would address several Recommendations within the UNC Tomorrow Report including the components to enhance Our Communities and Their Economic Transformation (Recommendation 4.4), Our Health (Recommendation 4.5), and Our Environment (Recommendation 4.6).

Role of Program in Relation to State and Regional Needs:

According to the proposal graduates of this program, "will be trained to assist North Carolinians in developing residential areas that preserve land values, increase home values, and at the same time protect wetlands and water quality in sustainable ways. The program was developed in direct response to soil consultants and environmental health specialists who became concerned that too few soil scientists were being trained in land quality evaluation."

US Labor Department Analysis:

- *Summary* – The Unit of Analysis for the 01.1299 CIP code places it into a broad category of Agriculture/Food Sciences. The national information available for this broad category is, "Employment of agricultural and food scientists is expected to grow 9 percent between 2006 and 2016, about as fast as the average for all occupations. Past agricultural research has created higher yielding crops, crops with better resistance to pests and plant pathogens, and more effective fertilizers and pesticides. Research is still necessary, however, particularly as insects and diseases continue to adapt to pesticides and as soil fertility and water quality continue to need improvement. This creates more jobs for agricultural scientists. "
  http://www.occsupplydemand.org/OSD_UnitOfAnalysis.aspx?CLUSCODE=120B-01&ST=NC&PathNo=1

Availability of Program Statewide (Enrollment and Degrees Awarded in Last 3 Years):

- *Public universities* – Not available.
- *Private universities* – Not available.

Available in Online or Distance Format from UNC institutions:

Not Available.

Available or not from Academic Common Market:

North Carolina does not participate in the ACM at the undergraduate level.

NCSU Campus enrollment and degrees awarded by similar programs at the Bachelors level:
(Based on two CIP digits – 01 CIP is the summary group for Agriculture, Agricultural Operations, And Related Sciences under which Soil and Land Development is listed as a program.)

Enrollment			Academic Year						
			Fall 05	Spr 06	Fall 06	Spr 07	Fall 07	Spr 08	Fall 08
NCSU	Agriculture, General	BS	N/A	N/A	N/A	N/A	2	4	8
	Agribusiness/Agricultural Business Operations	BS	148	162	148	161	145	160	162
	Agricultural Mechanization, General	BS	8	12	15	25	25	23	26

Enrollment			Academic Year						
			Fall 05	Spr 06	Fall 06	Spr 07	Fall 07	Spr 08	Fall 08
	Turf and Turfgrass Management	BS	N/A	N/A	3	7	21	29	31
	Agricultural and Extension Education Services	BS	30	27	31	36	35	38	28
	Animal Sciences, General	BS	241	251	240	260	264	278	286
	Poultry Science	BS	28	27	21	24	19	18	18
	Food Science	BS	36	32	31	30	23	26	27
	Agronomy and Crop Science	BS	63	63	60	53	49	45	46
	Horticultural Science	BS	136	123	125	127	106	114	108

Number of Degrees Awarded			Academic Year		
			2005-2006	2006-2007	2007-2008
NCSU	Agribusiness/Agricultural Business Operations	BS	61	84	63
	Agricultural Mechanization, General	BS	3	3	9
	Turf and Turfgrass Management	BS	N/A	2	4
	Agricultural and Extension Education Services	BS	23	13	15
	Animal Sciences, General	BS	98	101	91
	Poultry Science	BS	10	17	5
	Food Science	BS	14	14	9
	Agronomy and Crop Science	BS	26	25	16
	Horticultural Science	BS	57	48	37

Campus Average of enrollment and degrees awarded in this degree area at the Bachelors level:
(Based on two CIP digits – 01 CIP is the summary group for Agriculture, Agricultural Operations, And Related Sciences under which Soil and Land Development is listed as a program - over the last 3 Academic Years, Fall 2005-Fall 2008)

Campus Average			
	Number of Active Programs	Enrollment per Semester	Degrees Awarded per Year
NCA&T	4	26	9
NCSU	9	71	32
Campus Average:		49	21

NCSU Degree Programs added in the past three years:

- *Bachelor*
  - BS Agricultural Science (06/08/2007)
  - BA German Studies (06/08/2007)
  - BA Leadership in the Public Sector (08/11/2006)
  - BS Bioprocessing Science (10/13/2006)
  - BA Design Studies (03/16/2007)

- *Master*
  - MS Analytics (02/09/2007)
  - MAT - Master of Arts in Teaching (10/17/2008)
  - MA Anthropology (08/11/2006)
  - MGIM - Master of Global Innovation Management (01/11/2008)
- *Doctoral*
  - PhD Fisheries and Wildlife Sciences (01/12/2007)

NCSU Degree Programs discontinued in past three years:

- *Bachelor*
  - BS Health Occupations Education (03/20/2009)
- *Master*
  - MS Agricultural and Resource Economics (03/20/2009)
  - MEd in Special Education, Behavior Disorders (03/20/2009)
  - MS Behaviorally/Emotionally Handicapped (03/20/2009)
  - MEd Mentally Handicapped (03/20/2009)
  - MS Mentally Handicapped (03/20/2009)
  - MEd Specific Learning Disabilities (03/20/2009)
  - MS Specific Learning Disabilities (03/20/2009)
  - MS School Psychologist (05/11/2007)
- *Doctoral*
  - PhD School Psychologist (05/11/2007)