

Request for Authorization to Establish a Master of Environmental Assessment Degree at North Carolina State University

North Carolina State University requests authorization to establish a Master of Environmental Assessment degree (CIP 03.0104).

Program Description

The proposed degree is a Professional Science Master's program that bridges the gap between scientific research and the use of science in decision-making, regulation, and environmental management. By understanding and evaluating the sources, fate, and effects of pollutants in the environment, we can develop a scientific basis for assessing risks and thus support regulatory, enforcement, and remedial action decisions. The proposed program is intended to provide advanced education in the theory and practice of assessing the risks of pollutants to human health and the natural environment. The degree will be offered through distance education in order to reach working professionals.

UNC Tomorrow Relevance

UNC Tomorrow Commission Final Report: 4.1.1. UNC should prepare its students for successful professional and personal lives in the 21st Century, equipping them with the tools they need to adapt to the ever-changing world. Many people in agricultural, chemical, environmental, energy, natural resource, pharmaceutical, biomedical, and biotechnology fields require advanced training in environmental assessment. Companies and government research facilities in these fields, as well as regulatory agencies, have a need for employees who understand the basic principles of pollutants, the environmental assessment process, and how to perform and review human and ecological risk assessments.

Highlights from UNC-GA Data Template

There are no similar programs at UNC campuses or in the state. Growth of the environmental scientist and specialist job category is projected to be faster than the overall US job growth, and median wages are substantially higher than the median NC wage. In the past three years, NCSU has added five baccalaureate programs, four master's, and one doctoral program, and has discontinued one baccalaureate, eight master's, and one doctoral program.

Outcome of Consultation with Disciplinary Panel

In addition to NCSU and UNC-GA representatives, the panel included faculty members from ASU, ECU, NCA&T, and UNCC. The panel discussed the curriculum and the various distance education technologies that would be used in course delivery (hybrid of synchronous and asynchronous instruction), structure of the program's capstone course, and collaborating agencies and workplaces that would provide the environments for application of student learning. Members of the panel were uniform in their support of the proposed degree.

Student Demand

In a summer 2006 survey of agencies and organizations with work related to environmental assessment, 287 of 334 respondents (86 percent) requested more information and upon receiving that information, 83 said they would be interested in an online program. NCSU has also received a number of other inquiries about such a program. It is anticipated that most enrollees will be recent graduates from the various STEM undergraduate programs at NCSU and other universities.

Opportunities for Graduates of the Program

The \$300-billion environmental industry grew 7 percent in 2007, the fourth consecutive year of over 5 percent growth. There are more than 30,000 private companies and probably twice as many public sector entities dealing with environmental services, equipment, or resources. Leading NC employers include state government, Research Triangle Institute, US Environmental Protection Agency, agrochemical manufacturers (BASF, Syngenta, Bayer Crop Science), and many environmental consulting firms.

Resource Implications

Resource needs: The program will be online, so facility space is not an issue. The program will need two additional faculty when it reaches a steady state enrollment of 30 full-time and 20 part-time students.

Resources allocated: The department has received \$239,562 from the NCSU Distance Education and Learning Technology Applications (DELTA) office to develop the online courses for the program.

Estimated cost to the State: By the fourth year of the program (steady state), 720 student credit hours (Master's, cost category level 3) would result in state appropriation of \$418,563.

Recommendation

It is recommended that the Board of Governors approve NC State University's request to establish a Master of Environmental Assessment degree (CIP 03.0104) contingent upon the availability of funding.

General Information Template for Academic Program Review

Degree Area and Level:

Master of Environmental Assessment (CIP 03.0104) 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 Global Readiness (Recommendation 4.1), 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, "The 2008 Annual Environmental Industry Overview (AEIO) published by the Environmental Business Journal provides a perspective on the environmental industry's position in the U.S. economy and key trends in 2008, in addition to a full statistical snapshot of the \$300-billion U.S. environmental industry in 2007. The U.S. environmental industry grew 7% in 2007, its fourth consecutive year of over 5% growth. The environmental industry amounted to \$302 billion in revenues in 2007 for the roughly 30,000 private companies and at least twice as many public sector entities in the business of selling environmental services, equipment, or resources. Although Environmental Assessment comprises only a fraction of the overall market, this AEIO reports it to be a "multi-billion dollar" segment. Some of North Carolina's largest employers are engaged in Environmental Assessment including, the State of North Carolina, Research Triangle Institute, US Environmental Protection Agency, agrochemical manufacturers (BASF, Syngenta, Bayer Crop Science), and many environmental consulting firms."

US Labor Department Analysis:

- *Summary* – The Occupational Supply Demand System lists this degree program in a broad category under Environmental Science. According to their website, "Employment of environmental scientists is expected to increase by 25 percent between 2006 and 2016, much faster than the average for all occupations. Job growth for environmental scientists and hydrologists should be strongest in private-sector consulting firms. Growth in employment of environmental scientists and hydrologists will be spurred largely by the increasing demands placed on the environment and water resources by population growth. Further demand should result from the need to comply with complex environmental laws and regulations, particularly those regarding ground-water decontamination, clean air, and flood control."

http://www.occsupplydemand.org/OSD_UnitOfAnalysis.aspx?CLUSCODE=105A-15&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 or not from Academic Common Market:

Not available.

APPENDIX W

NCSU Campus enrollment and degrees awarded in similar programs at the Masters level:
(Based on two CIP digits – 03 CIP is the summary group for Natural Resources and Conservation under which Environmental Assessment is a program)

Enrollment			Academic Year						
			Fall 06	Spr 07	Fall 07	Spr 08	Fall 08	Spr 09	Fall 09
NCSU	Natural Resources/Conservation, General	M	0	0	0	0	0	0	5
		MS	25	28	33	36	40	37	28
	Natural Resources Management and Policy	M	0	0	0	0	0	0	23
		MS	34	34	31	32	39	44	33
	Forestry, General	M	0	0	0	0	0	0	4
		MS	24	25	22	23	25	23	20
	Wood Science and Wood Products/Pulp and Paper Technology	M	0	0	0	0	0	0	13
		MS	15	19	18	22	23	23	13

Number of Degrees Awarded			Academic Year		
			2006-2007	2007-2008	2008-2009
NCSU	Natural Resources/Conservation, General	M	3	1	1
		MS	2	4	13
	Natural Resources Management and Policy	M	5	3	5
		MS	7	10	6
	Forestry, General	M	6	2	0
		MS	2	7	8
	Wood Science and Wood Products/Pulp and Paper Technology	M	5	0	4
		MS	3	1	5

Campus Average of enrollment and degrees awarded in this degree area at the Masters level:

(Based on two CIP digits – 03 CIP is the summary group for Natural Resources and Conservation under which Environmental Assessment is a program - over the last 3 Academic Years, Fall 2006-Fall 2009)

Campus Average			
	Number of Active Programs	Enrollment per Semester	Degrees Awarded per Year
NCSU	4	29	9
UNC-CH	1	64	28
UNC-W	1	29* in Fall 2008-Fall 2009	5 *in 2008-2009
Campus Average:		41	14

APPENDIX W

NCSU Campus 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)