

Request for Authorization to Establish a Bachelor of Science in Oceanography at UNC Wilmington

UNC Wilmington requests authorization to establish a Bachelor of Science in Oceanography (CIP 40.0702).

Program Description

The BS Oceanography degree is an interdisciplinary program that will meet existing student demand at UNCW, train professionals for employment arising from national and regional scientific and management priorities, meet a societal need for improved ocean and climate literacy, and support and complement existing programs in traditional scientific disciplines at UNCW. The curriculum provides a core foundation in science and mathematics, and in applied oceanographic technology and data analysis. The extensive array of advanced electives allows students to maintain a broad marine science perspective or to focus in-depth on particular areas of interest in chemical, geological, or physical oceanography. The program will build on the successful minor in oceanography currently offered.

UNC Tomorrow Relevance

The program responds to the UNC Tomorrow emphasis on environmental sustainability and an educated workforce capable of addressing societal issues. The 2004 US Commission on Ocean Policy report states, "Better education is a cornerstone of national ocean policy, with the United States once again joining the top ranks in math, science, and technology achievement."

Highlights from UNC-GA Data Template

Employment of environmental scientists is expected to increase by 25 percent between 2006 and 2016, much faster than the rate for all occupations combined, with average salaries substantially exceeding the average NC wage. No other institution in NC offers a BS in Oceanography. In the past three years, UNCW has added one baccalaureate, four master's, and one doctoral program and has discontinued five baccalaureate and one master's programs.

Outcome of Consultation with Disciplinary Panel

The panel was generally positive about the proposal and discussed the senior capstone requirement that will include opportunities for practical shipboard or coastal ocean experiences, community outreach, and independent research. The panel discussed the fact that the program is intentionally designed to focus on chemical, geological, and physical oceanography so as not to duplicate the existing Marine Biology program at UNCW. Collaboration with the proposed ECU program in Atmospheric Science was discussed.

Student Demand

The availability of an Oceanography major is a frequently encountered question from prospective students at UNCW. Surveys of current students and high school students further supports the demand as well as the rapid growth of the Oceanography minor that was started in 2006.

Opportunities for Graduates of the Program

The program will help meet the growing need for trained marine and coastal professionals in North Carolina and will also prepare student to enroll in graduate programs such as UNCW's MS in Marine Sciences.

Resource Implications

Resource needs: Existing facilities at UNCW are sufficient to begin the program in its first few years, although planned construction of a new laboratory science building will allow room for growth in the future. UNCW is currently recruiting for two faculty positions that would teach in the program.

Resources allocated: Most of the core and elective courses already exist. Because the program is interdisciplinary in nature, many faculty are available to teach in the core and elective courses. Several new core and elective classes are being developed and will be taught in existing facilities. Student research activities can also be supported by facilities at the Center for Marine Science where many participating faculty have labs.

Estimated cost to the State: In the first two years of the program, majors would generally be students already enrolled at UNCW as freshmen and sophomores. It is anticipated that by the fourth year, the program will enroll 50 full-time students (upper division). Assuming that 30 percent of these students would not have attended UNCW otherwise, new state appropriations of approximately \$165,450 would be required.

Recommendation

It is recommended that the Board of Governors approve UNC Wilmington's request to establish a BS in Oceanography degree (CIP 40.0702) contingent upon the availability of funding.

General Information Template for Academic Program Review

Degree Area and Level:

B.S. in Oceanography (CIP 40.0607) at UNC Wilmington

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 Environment (Recommendation 4.6), and Our University's Outreach and Engagement (Recommendation 4.7).

Role of Program in Relation to State and Regional Needs:

The UNCW proposal states that, "North Carolina has almost 3,400 miles of shoreline. This is the 5th longest shoreline in the conterminous states, exceeded only by Florida, Louisiana, California, and Maine." In 2004, the U.S. Commission on Ocean Policy published its report titled, *An Ocean Blueprint for the 21st Century*. The Executive Summary of the report recommended, "In this hoped-for future, better education is a cornerstone of national ocean policy, with the United States once again joining the top ranks in math, science, and technology achievement. An audacious program to explore unknown reaches of the ocean inspires and engages people of all ages. An ample, diverse, well-trained, and motivated workforce is available to study the oceans, set wise policies, develop and apply technological advances, and engineer new solutions. An effective team of educators works closely with scientists to learn and teach about the oceans—its value, beauty, and critical role on the planet. And, as a result of lifelong education, all citizens are better stewards of the nation's resources and marine environment."

US Labor Department Analysis:

- *Summary* – Employment of environmental scientists is expected to increase by 25 percent between 2006 and 2016, much faster than the average for all occupations. Over the same period, employment of hydrologists should increase by 24 percent, also much faster than the average. 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=100A-15&ST=NC&PathNo=1

- *Summary Data* – Source: U.S. Department of Labor

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:

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

UNC Wilmington Campus enrollment and degrees awarded in similar programs at the Bachelors level:
(Based on two CIP digits – 40 CIP is the summary group for Physical Sciences under which Oceanography is a program)

APPENDIX U

Enrollment			Academic Year						
			Fall 05	Spr 06	Fall 06	Spr 07	Fall 07	Spr 08	Fall 08
UNC-W	Chemistry	BA	41	42	34	31	35	44	38
		BS	74	78	81	93	95	105	104
	Geology/Earth Science	BA	14	7	10	8	14	13	16
		BS	12	13	10	13	10	15	15
	Physics	BA	1	0	2	3	6	4	6
		BS	14	13	12	12	16	16	15

Number of Degrees Awarded			Academic Year		
			2005- 2006	2006- 2007	2007- 2008
UNC-W	Chemistry	BA	17	14	15
		BS	26	18	41
	Geology/Earth Science	BA	6	2	5
		BS	7	4	4
	Physics	BA	1	1	1
		BS	6	5	3

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

(Based on two CIP digits – 40 CIP is the summary group for Physical Sciences under which Oceanography is 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
ASU	3	55	16
ECSU	4	7	2
ECU	3	28	12
FSU	1	17	6
NCA&T	2	21	4
NCCU	2	20	4
NCSU	5	65	32
UNC-A	3	23	10
UNC-C	4	54	14
UNC-CH	4	90	30
UNC-G	2	26	5
UNC-P	2	36	16
UNC-W	3	56	20
WCU	2	28	11
WSSU	1	31	6
Campus Average:		37	13

UNC Wilmington Campus Degree Programs added in the past three years:

- *Bachelor*
 - BS Community Health Education (06/13/2008)
- *Master*
 - MA Environmental Studies (01/11/2008)
 - MA Spanish (01/11/2008)
 - MS Applied Gerontology (06/08/07)
 - MA Criminology and Public Sociology (03/16/2007)
- *Doctoral*
 - EdD Educational Leadership and Administration (05/11/2007)

UNC Wilmington Degree Programs discontinued in past three years:

- *Bachelor*
 - BA Special Education, Cross-Categorical (03/20/2009)
 - BA Special Education, Behaviorally/Emotionally Handicapped (03/20/2009)
 - BA Special Education, Mental Retardation (03/20/2009)
 - BA Special Education, Learning Disabilities (03/20/2009)
 - BA History, Teacher Licensure (03/20/2009)
- *Master*
 - MA Mathematics (03/20/2009)
- *Doctoral*
 - N/A