

LONG SIGNATURE SHEET

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UNC CHARLOTTE

Proposal Number: ESCI 5-3-12a

JUL 10 2012

Proposal Title: Revised B.A. in Earth Sciences Degree

College of Liberal Arts and Sciences

Originating Department: Geography and Earth Sciences

TYPE OF PROPOSAL: UNDERGRADUATE X GRADUATE _____ UNDERGRADUATE & GRADUATE _____
 (Separate proposals sent to UCCC and Grad. Council)

DATE RECEIVED	DATE CONSIDERED	DATE FORWARDED	ACTION	SIGNATURES
01/19/2012	02/14/2012	07/02/2012	Approved	<u>DEPARTMENT CHAIR</u> [Craig Allan]
			Approved	<u>COLLEGE CURRICULUM COMMITTEE CHAIR</u> [print name here]
			Approved	<u>COLLEGE FACULTY CHAIR (if applicable)</u> [print name here]
		2/22/13	Approved	<u>COLLEGE DEAN</u> [print name here] C. Brody
			Approved	<u>GENERAL EDUCATION</u> (for General Education courses) [print name here]
			Approved	<u>UNDERGRADUATE COURSE & CURRICULUM COMMITTEE CHAIR</u> (for undergraduate courses)
			Approved	<u>GRADUATE COUNCIL CHAIR</u> (for graduate courses)
			Approved	<u>FACULTY GOVERNANCE ASSISTANT</u> (Faculty Council approval on Consent Calendar)
				<u>FACULTY EXECUTIVE COMMITTEE</u> (if decision is appealed)

Revised Undergraduate Course and Curriculum Proposal

Course and Curriculum Proposal from the Department of Geography and Earth Sciences.

Revised BA in Earth Sciences Degree

1. Summary The Department of Geography and Earth Sciences proposes to significantly modify the structure of its BA Earth Sciences Degree and to add four new courses to the modified degree GEOG 3220, Regional Energy Markets and Renewable Energy, GEOL 3105 The Earth's Mineral Resources: Sustainability and the Environmental Impacts of Recovery, ESCI 3101 Global Environmental Change and ESCI 4000 Water Resources.

BACHELOR OF ARTS IN EARTH SCIENCES

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REQUIRED COURSES (37 hours)

- ESCI 1101 Earth Science-Geography (3)
- ESCI 1101L Earth Science-Geography Lab (1)
- GEOL 1200 Physical Geology (3)
- GEOL 1200L Physical Geology Lab (1)
- GEOG 1105 Location of Human Activity (3)
- ESCI 2101 The Environmental Dilemma (3)
- ESCI 2210 Field Methods in the Earth Sciences (3) *or*
- GEOG 2110 Introduction to Geographic Research (3)
- GEOG 2103 Elements of GIScience and Technologies (4)
- GEOG 3215 Environmental Planning (W) 3
- GEOG 4000 Urban Ecology (3)
- GEOL 3190 Environmental Geology (3)
- ESCI 3600 Earth Science Seminar (1)
- ECON 4181 Energy and Environmental Economics (3) *or*
- GEOG 3220 Regional Energy Markets and Renewable Energy (3) *or*
- GEOL 3105 The Earth's Mineral Resources: Sustainability and the Environmental Impacts of Recovery (3)
- STAT 122X Elements of Statistics I (3)

ELECTIVE COURSES (16 hours)

Sixteen hours of elective coursework may be selected from additional ESCI, GEOL and GEOG courses, BIOL 3144 Ecology, BIOL 3144L Ecology Laboratory, PHIL 3520 Philosophy of Science and STAT 2223 Elements of Statistics II.

B. JUSTIFICATION

1. The revised BA Earth Sciences degree will provide a destination degree program for students who wish to focus on the study of human/environmental interactions and environmental sustainability at UNC Charlotte. The lack of such an undergraduate degree program focus represents a critical gap in the curricular offerings at one of the state's largest academic institutions. Enrollment totals from similar degree programs elsewhere in the state including: UNC Asheville, Appalachian State, Western Carolina, UNC Pembroke, UNC Wilmington, Duke University, North Carolina Central, UNC Chapel Hill, NC State, NC A&T, Elon University, Queens and Davidson College (many in overlapping service markets) all support healthy and growing enrollment totals and projections from the Bureau of Labor Statistics and N.C. Labor Market Division both indicate a growing labor market for graduates from degree programs with an environmental focus (Bureau of Labor Statistics 2011, ELC NC 2012). Given the size of the Charlotte service market and the increasing societal awareness of the importance of environmental sustainability, there is considerable potential for the revised ESCI degree to become an extremely popular option for our students. The revised Earth Sciences program broadens and updates the course offerings of our existing successful Earth Sciences degree program which currently serves approximately 80 majors. Beyond the current existing local BS Environmental Science programs at Davidson College and Queens University the nearest pre existing Environmental Science program at a public institution is the BS degree in Environmental Sciences at Appalachian state (=100 miles away). The Department of Geography and Earth Sciences has recently hired faculty in the areas of Global Change Science and Urban Ecology and is fully prepared to offer the proposed degree changes with its current faculty resources and with no curricular interruption to students in its existing degree programs.

Bureau of Labor Statistics. 2011. Employment Projections by Occupation. <http://bls.gov>.

ELC NC <http://eslmi23.esc.state.nc.us/projections/index.asp?section=2&periodID=08>

2. Prerequisites for the new courses associated with the proposed degree changes:

GEOG 3220, Regional Energy Markets and Renewable Energy - None
GEOL 3105 The Earth's Mineral Resources: Sustainability and the Environmental Impacts of Recovery-
GEOL 1200, 1200L
ESCI 3101 Global Environmental Change – ESCI 1101, 1101L
ESCI 4000 Water Resources- ESCI 1101, 1101L

3. The proposed 3000 and 4000 level courses associated with this proposal are consistent with the courses that are approved for graduate credit.

4. This curriculum revision represents a modernization and refocusing of the current BA Earth Sciences degree to address environmental and resource issues with a cross disciplinary blend of coursework that reflects the Department's evolving faculty strengths in the areas of human environmental interactions, global change, sustainability, hazards and geospatial sciences.

C. IMPACT

1. This revised degree will serve all undergraduate students currently enrolled in the BA Earth Sciences degree program (current major count 74 students 2010-11) and also those students who wish to focus their studies on a degree program specifically examining human/environmental interactions and sustainability.

2. What effect will this proposal have on existing courses and curricula?

The revised BA Earth Sciences degree focuses on human environmental interactions using a combination of scientific, social science, and humanistic approaches. While the BS Earth Sciences degree is designed to attract students interested in a more scientifically focused and technical degree that applies physical, chemical and ecological principles to the study of the physical environment and the solution of environmental problems. We expect both of the revised degree programs to attract significantly more majors than the existing B.A. and B.S. Earth Sciences degree programs which they are designed to replace. The removal of GEOL 3115 and ESCI 3105 from the list of required courses for the Earth Sciences BA will remove some of the enrollment pressures on those courses that the Department is currently struggling to meet. It is possible that some B.A. Biology majors with a specific interest in Ecology may be drawn towards the B.A. Earth Sciences degree. However, the B.A. in Biology and the proposed Environmental Studies degrees comprise very different coursework with the Biology degree focusing on providing a firm foundation in the basic principles of Biology in order to understand the biological world while the B.A. Earth Sciences degree is specifically designed to study human/environmental interactions focusing on the concept of sustainability.

D. RESOURCES REQUIRED TO SUPPORT PROPOSAL

1. Personnel

a) No new faculty lines are required to offer the revised degree.

b) The newly proposed courses are part of or will become part of the regular course offerings of Dr. Deborah Strumsky GEOG 3220, Regional Energy Markets and Renewable Energy (taught twice as a topics course in 2010 and 2011), Dr. John Bender GEOL 3105 The Earth's Mineral Resources: Sustainability and the Environmental Impacts of Recovery (course revision of GEOL 4185 Mineralogy, Economics, and the Environment regularly taught by Dr. Bender), Dr. Brian Magi ESCI 3101 Global Environmental Change (new course offering of new faculty member Dr. Magi that will become part of his regular course rotation) and Dr. Sandra Clinton ESCI 4000 Water Resources (new course offering that will become part of her regular course rotation).

2. Physical Facility

The current facilities in the McEniry building are adequate to accommodate the revised degree program.

3. Equipment and Supplies

Current equipment and supplies are adequate.

4. Computer

Current computer resources are adequate.

5. Audio-Visual

Current facilities are adequate.

6. Other Resources

None needed.

7. Sources of Funding

N/A

E. CONSULTATION WITH THE LIBRARY AND OTHER DEPARTMENTS OR UNITS

1. Library Consultation– included with new course proposals.

2. Consultation with other departments or units

Department of Biology

Department of Economics

Department of Philosophy

F. INITIATION AND CONSIDERATION OF THE PROPOSAL

1. Originating Unit: Department of Geography and Earth Sciences, College of Liberal Arts and Sciences, UNC Charlotte. The Department of Geography and Earth Sciences approved the BA Earth Sciences degree revisions unanimously on May 13, 2011.

2. Other Considering Units- None

G. ATTACHMENTS

1. Letters of Support

2. Mark-Up of Original Catalog Copy

ATTACHMENTS

From: Brody, Charles
Sent: Thursday, February 07, 2013 1:25 PM
To: Allan, Craig
Subject: RE: ESCI Curriculum

Craig,

While the College cannot make additional GTA support available without a specific request from the Department of Biology, the curricular changes that you are proposing --to move more in the direction of environmental studies-- are in line with CLAS goals. In the short term, I am sure that we can manage the needs of this revised curriculum through part-time funding until a more thorough assessment is made of the need for support.

Charles J. Brody, PhD | Professor, Sociology
Associate Dean for Academic Affairs
College of Liberal Arts and Sciences
UNC Charlotte | Fretwell, 430G
9201 University City Blvd. | Charlotte, NC 28223
Phone: 704-687-2362 | Fax: 704-687-0089
cbrody@uncc.edu | <http://www.uncc.edu>

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From: Croy, Marvin
Sent: Tuesday, January 24, 2012 2:48 PM
To: Allan, Craig
Subject: Re: Revised BA Earth Sciences Degree

Hi Craig,

We are happy to hear of your interest in PHIL 3520, Philosophy of Science. The broad conception of science elaborated in this course will support the interdisciplinary and human/environmental interaction focus of your revised program, and we are happy to have your students in our Philosophy of Science course.

Best,

Marvin

Marvin J. Croy, Ph.D. | Professor and Interim Chair
Department of Philosophy,
UNC Charlotte | Winningham 103
9201 University City Blvd. | Charlotte, NC 28223
Phone: 704-687-2174 | Fax: 704-687-2172
microv@uncc.edu | <http://www.philosophy.uncc.edu/mjcrow/croy.html>

From: Troyer, Jennifer
Sent: Friday, January 27, 2012 4:36 PM
To: Allan, Craig
Subject: RE: Curriculum Proposal

Craig,

The Department of Economics Undergraduate Curriculum Committee met today to consider the proposal for the BA in Earth Sciences. The committee has unanimously endorsed the proposal, which involve ECON 4181 as one of the three options that students in the degree program could take to satisfy degree requirements. The proposal is also endorsed by Peter Schwarz, the faculty member who has consistently taught ECON 4181.

In sum, the Department of Economics strongly supports the proposal.

Regards-


Jennifer



Department of Biology
9201 University City Boulevard
Charlotte, NC 28223-0001
Ph. (704) 687-8686 ~ Fax. (704) 687-3128

Memorandum

TO: Craig Allan, PhD
Professor and Chair
Department of Geography and Earth Sciences

FROM: Martin G. Klotz, Ph.D. 
Professor and Chair
Department of Biology

RE: Long Form, Revision of BA in Earth Sciences

DATE: January 23, 2012

This note is to express my support for the revision of the Bachelor of Arts degree in Earth Sciences to be offered by the Department of Geography and Earth Sciences. The proposed curriculum includes BIOL 3144 (Ecology) and BIOL 3144L (Ecology Laboratory) as elective coursework, both courses are being offered in the Fall and Spring semesters by the Biology Department. While course availability of Ecology and Ecology Laboratory is herewith confirmed for the future, this letter of support does not promise increased enrollment capacity of the laboratory course without additional GTA support allocation to the Department of Biology.

The University of North Carolina is composed of the eleven public higher institutions in North Carolina.
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- ~~GEOG 3215 Environmental Planning (W) 3~~
- ~~GEOG ~~4000~~ 4000 Urban Ecology (3)~~
- ~~GEOL 3190 Environmental Geology (3)~~
- ~~ESCI 3600 Earth Science Seminar (1)~~
- ~~ECON 4181 Energy and Environmental Economics (3) or~~
- ~~GEOG ~~3220~~ 3220 Topics in Regional Geography: Regional Energy Markets and Renewable Energy (3) or~~
- ~~GEOL ~~3105~~ 3105 The Earth's Mineral Resources: Sustainability and the Environmental Impacts of Recovery (3)~~
- ~~STAT 122X Elements of Statistics I (3)~~

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<#>ESCI 4600 Earth Sciences Seminar (1)¶
<#>GEOL 3115 Mineralogy (4)¶

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METR 3140 Intro to Meteorology & Climatology (3)¶

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