

# Program Review Year 2008 – 2009

## Name of Program:

LIBERAL ARTS: EARTH SCIENCE OPTION

### Program Review Team Members

<u>Name</u>	<u>Title</u>
Mark Reinhold	Assistant Professor - Natural Sciences, Northern Essex Community College
Marcy Vozzella	Chair – Dept. of Natural Sciences, Northern Essex Community College
Stephen Russell	Chair – History Dept., Northern Essex Community College
Sandra Kaufman	Program Coordinator - Business Management: Hospitality Option, Northern Essex Community College
Sean Cleary	Instructor – Physical Sciences, Northern Essex Community College
Dr. Nelson Eby	Professor of Geology – UMass - Lowell

DATE: April, 2009

# **Liberal Arts: Earth Science Program Review Results**

## **I. Impetus for the review at this time –**

The program review for Liberal Arts: Earth Science Option was originally scheduled for the spring of 2009, along with a number of other programs. Due to the large number of program reviews scheduled simultaneously, it was proposed that some reviews be moved back to spring of 2010 and other moved forward to Spring 2008. The Earth Science Option Program Review was one of the reviews moved forward to Spring 2008.

## **II. Preparations and initial steps –**

The first step of the program review was to set up a team to evaluate the program. Such a review team requires members from within the department, within the division but outside the department, outside the division, and a representative from outside the college such as from another college.

Based on these criteria, the review team was set up to include the following individuals:

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|----------------------------|---|
| <u>Mark Reinhold</u>       | – Head of the Liberal Arts: Earth Science Program Review Committee  |
| <u>Marcy Vozzella</u>      | – Head of the Department of Natural Sciences  |
| <u>Sean Cleary</u>         | – Adjunct Faculty in the Department of Natural Sciences   |
| <u>Sandra Kaufmann</u>     | – Program Coordinator, Business Management – Hospitality Option - Division of Business, Mathematics, Science and Technology |
| <u>Dr. Stephen Russell</u> | – Chair, Department of History, Government, Philosophy and Economics - Division of Social Sciences and Humanities           |
| <u>Dr. Nelson Eby</u>      | – Professor, Department of Environmental, Earth, and Atmospheric Sciences, University of Massachusetts-Lowell               |

After formation of the team in April of 2008, communication was to take place between team members through phone calls and e-mail. The team was formed fairly late in the semester because the review was assigned later in the semester than normal. Thus, due to end of the semester obligations, we determined we would postpone meeting face- to- face until the fall semester and communicate over the summer via e-mail and phone.

### **III. Team discussions and tentative decisions**

One of the first concerns to come to the attention of the Program Review Committee was the low enrollment in this particular program (see Chart 1 in Appendix 1). The average student enrollment in this particular program across the three academic years represented in Chart 1 is 9. A question that was asked following this observation was, “Why is the enrollment so low?”

Low enrollment may be attributed to either 1) low visibility or, more likely, 2) low interest.

The program is not well advertised resulting in low visibility. Most of our majors enroll in the program after taking one of the various earth science courses offered here at NECC, such as ERS125 – Environmental Issues, ERS130 – Meteorology, or ERS140 – Physical Geology. In recent history, we did have a range of display cabinets in the hallway of the 2<sup>nd</sup> floor of E-building containing rock and mineral samples from New England and around the world. These cabinets did help in advertising that we have an earth science program, assuming that students were taking classes in that part of the building.

Low interest is a second possibility for low enrollment. There are few individuals who state that they want to be a meteorologist, geologist, or oceanographer. Those that do have such interests will typically enroll in a four-year school to pursue such an interest. The majority of our students enroll as earth science majors after taking one of the available courses here at the college and becoming exposed to an area to which they have had little or no introduction.

Due to the low enrollment, we were aware that this program has a low viability, leaving it vulnerable to being discontinued. With the state budget being in a state of disarray, we were concerned that this possibility was even higher. So there were two possible courses of action; 1) Recommend discontinuing the program or 2) look at merging the option in with related disciplines.

For reasons not entirely unselfish, we have proposed combining the Earth Science Option with two similarly low enrolled programs - Liberal Arts: Chemistry Option and Liberal Arts: Physics Option - instead of terminating the program. These options were selected for relatively obvious reasons: 1) they are in the realm of the physical sciences and 2) they also suffer from low enrollment. The LA: Physics Option has averaged 8 students enrolled per year over the past 3 academic years (AY 2005-2006, AY 2006-2007, AY 2007-2008) and the LA: Chemistry Option has averaged 7 students enrolled per year over the past 3 academic years (AY 2005-2006, AY 2006-2007, AY 2007-2008). (See Appendix 2 for enrollment data for LA: Chemistry and LA: Physics over the past three academic years.) The combined three programs (LA: Chemistry, Physics, and Earth Science) would have a total (average) enrollment of 23.

The combined options are being merged into a proposed program called Liberal Arts: Physical Sciences which will have the same basic core requirements and two tracks within the program for Chemistry/Physics and Earth Science. This will allow students interested in transferring to a four year school and majoring in one of these disciplines to continue to be able to do so while maintaining a more viable program here at NECC.

#### **IV. Discussions outside of team: Decisions**

##### A. Discussions with Science Department Chair: Results

At various, unscheduled points, I talked about the Earth Science program with Marcy Vozzella. We talked about the low enrollment in this program, along with the low enrollment in both LA: Physics and LA: Chemistry. One thought we both agreed upon was that it may be possible to combine all three low enrolled programs into a larger, all encompassing program on the Physical Sciences.

##### B. Discussions with Division Dean: Results

I meet with William Heineman, Dean of Business, Mathematics, Science and Technology, on the 16<sup>th</sup> of September to discuss how things were progressing with the program review. One of the subjects discussed was the enrollment figures for this particular program. We both noted and agreed that the numbers were very low and of concern if we planned on keeping the program. I brought up the idea of possibly combining all three physical science options into one program and we both agreed that this may be the best path for keeping a program in all the physical sciences.

##### C. Discussion with VP of Academic Affairs: Results

William Heineman met with Lane Glenn to discuss the idea of eliminating the Liberal Arts: Earth Science option and recombining the three physical science program into an all encompassing Liberal Arts: Physical Sciences option. Lane was receptive to the idea.

##### D. Discussion with Director of Academic Program Review: Results

Bill met with Ellen Wentland to discuss the idea of eliminating the Liberal Arts: Earth Science option and recombining the three physical science program into an all encompassing Liberal Arts: Physical Sciences option. Ellen was also receptive to the idea.

It was further agreed that the responsibilities of the head of the Earth Science program review (Mark Reinhold) would shift from conducting the program review to developing the new Liberal Arts: Physical Sciences program.

## V. ACTION PLAN

**For each identified weakness or area in which improvement is desirable, submit an Action Plan.**

*(When designing the Action Plan, a suggested plan would include the elements of Process Management using a Plan-Do-Study-Act (PDSA) cycle.) (Note: Add as many of the following tables as necessary.)*

**NOTE: SEE APPENDIX THREE FOR DETAILS ABOUT PROGRESS ON EACH OF THE ACTION PLANS.**

Problem	Improvement Activity	Person Responsible	Date of Activity	Findings
A. Low enrollment in LA: Earth Science, Chemistry, and Physics Options	Develop an outline for a new program entitled Liberal Arts: Physical Sciences Option.	Program Review Committee Head	Spring 2009	
Analysis:				

Problem	Improvement Activity	Person Responsible	Date of Activity	Findings
B. Need to share team recommendations for approval	Meet with division dean and the Dean of Transfer, Articulation, and Advising	Program Review Committee Head	Fall 2008/ spring 2009	
Analysis:				

Problem	Improvement Activity	Person Responsible	Date of Activity	Findings
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C. Need to terminate current programs which will be merged into a new program	TBD	Program Review Committee Head	Fall 2009	
Analysis:				

Problem	Improvement Activity	Person Responsible	Date of Activity	Findings
D. Need to develop a course sequencing model for the new program to ensure two-year completion	Develop a proposed sequence of courses.	Program Review Committee Head	Spring 2009	
Analysis:				