

3-5-2007

Revision to the Water Resources Major

The College at Brockport, College Senate

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SUNY BROCKPORT

College Senate
State University of New York College at Brockport
350 New Campus Drive
Brockport, NY 14420-2925
(395-2585 (Fax) 395-2246)

Resolution # 21 2006-2007 COLLEGE SENATE

TO: Dr. John R. Halstead, College President

FROM: The College Senate: *March 5, 2007*

RE: I. Formal Resolution (*Act of Determination*)
 II. Recommendation (*Urging the Fitness of*)
 III. Other, For Your Information (*Notice, Request, Report, etc.*)

SUBJ: **Revision to the Water Resources Major** #36 06-07 UC

Signed: Jeffrey T. Lashbrook Date: 3/22/07
(Dr. Jeffrey T. Lashbrook, 2006-07 College Senate President)

Please fill out the bottom portion and return document to the College Senate Office.

TO: The College Senate President

FROM: College President

RE: I. Decision and Action Taken on Formal Resolution (circle choice)

a. Accepted

- *Implementation Effective Date: Fall 2007
**Date resolution will begin to be used by the College (i.e. spring, fall, when included in catalog, etc.)*

b. Deferred for discussion with the Faculty Senate on ___/___/___

c. Unacceptable for the reasons contained in the attached explanation

II, III. Response to Recommendation or Other/FYI

a. Received and acknowledged ___/___/___

b. Comment: _____

DISTRIBUTED BY PRESIDENT'S OFFICE TO: President's Cabinet

DISTRIBUTE ALSO TO: Originator, Academic Advisement, Registrar (as appropriate)

Signed: John R. Halstead Date: 3/26/07
(Dr. John R. Halstead, President, SUNY College at Brockport)

**COLLEGE SENATE OFFICE
RESOLUTION PROPOSAL COVER PAGE**

Routing Number	#36 06-07 UC
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ROUTING NUMBER TO BE ASSIGNED BY SENATE OFFICE

DEADLINE FOR SUBMISSIONS: FEBRUARY 23

Incomplete proposals or proposals received after the deadline may not be reviewed until next semester.

INSTRUCTIONS:

- Submit only complete proposals.
- Proposals must be prepared individually in Word format using committee guidelines (guidelines online).
- Fill out this cover page for each proposal (available online at www.brockport.edu/collegesenate).
- Email proposal and this cover page to senate@brockport.edu and facprez@brockport.edu.
- All updates must be resubmitted to the Senate office with the original cover page including routing number.
- Questions? Call the Senate office at 395-2586 or the appropriate committee chairperson.

1. PROPOSAL TITLE:

Please be somewhat descriptive, for example, *Graduate Probation/Dismissal Proposal* rather than *Graduate Proposal*.

Revision to the Water Resources major

2. BRIEF DESCRIPTION OF PROPOSAL:

Change the Water Resources major by replacing two required courses with designated electives, and expanding the choice of courses included as designated electives.

3. ANTICIPATED DATE OF IMPLEMENTATION:

Fall, 2007

Enter date this will be effective if passed by the Senate.

4. SUBMISSION & REVISION DATES: PLEASE PUT A DATE ON ALL UPDATED DOCUMENTS TO AVOID CONFUSION.

<i>First Submission</i>	<i>Updated on</i>	<i>Updated on</i>	<i>Updated on</i>
January 5, 2007			

5. SUBMITTED BY: (contact person)

<i>Name</i>	<i>Department</i>	<i>Phone</i>	<i>Email</i>
Judy Massare	Earth Sciences	2419	jmassare@esc.brockport.edu

6. COMMITTEES TO COPY: (Senate office use only)

Standing Committee	Forwarded To	Date
__ Enrollment Planning & Policies	Committee Chair	1/5/07
__ Faculty & Professional Staff Policies	Executive Committee	2/26/07
__ General Education & Curriculum Policies	Senate	3/5/07
__ Graduate Curriculum & Policies	Senate President's Signature	3/22/07
__ Student Policies	College President's Signature	3/22/07
XX Undergraduate Curriculum & Policies	To Vice Provost	
	Other	

*(ROUTING NUMBER IS A CHRONOLOGICAL NUMBER SEQUENCE FOLLOWED BY ACADEMIC YEAR AND COMMITTEE INITIALS)

Executive Summary

The Water Resources major was developed to prepare students for careers in hydrology and water resource management. Requirements for federal employment as a hydrologist were used as the basis for developing the program of study associated of this major. Since then, the discipline has matured into a broad integration of topics from meteorology and geology, and employment opportunities have expanded. Graduate schools and the workplace demand a deeper background and stronger technical skills in one or both of these areas. The department would like to revise the requirements for the major to allow for greater specialization, while also enabling students to acquire a broad background in hydrology. This can be achieved through a recalibration of the mix of required courses and designated electives. The proposed changes should make the major more flexible and students will be able to select a mix of advanced courses to fit their particular career goals. The proposed changes will not alter the number of credits required for the major, nor will it be necessary for the department to change the timetable of its course offerings.

Changes

The existing program of study is made up of two groups, required courses and designated electives. The department is proposing to reduce the number of required courses by two (8 credits) and increase the designated electives by 8 credits, thus maintaining the same credit requirement, as well as the same number of upper division credits. No new courses are proposed.

1. Change GEL 415 Geomorphology (4 cr) from a required course to a designated elective.
2. Change GEL 457 Geochemistry (4 cr) from a required course to a designated elective.

These specialized courses are important to certain subfields but not others. Students whose career goals require this background will still have the option of selecting one or both of these as electives.

3. Increase the number of designated electives from 9 credits to 17 credits.

Students need technical skills and a depth of knowledge in order to make them competitive for graduate school and employment as water resources professionals. The larger number of designated electives will allow students, through advisement, to select a coordinated set of upper division elective to provide the necessary background for their particular career path.

4. Change the course choices for designated electives.

The changes in designated electives will make the major a more balanced integration between meteorology and geology and thus reflect the present status of the field. Several meteorology courses will be added as designated electives. The addition of these courses will allow students to specialize in the emerging fields of hydrometeorology and flood forecasting. An advanced GIS course will be added also, as this technology is increasingly used in all aspects of water resources. It is a useful skill that enhances employment opportunities for our graduates. Two courses, Mineral Science (GEL 312) and Stratigraphy and Sedimentology (GEL 411) will be removed from the designated electives, as they are less critical for fostering the integration of meteorology and geology disciplines.

Impact of changes on transfer students

The proposed changes will give all students more options in completing the requirements for the major. As many of our upper division courses are offered every other year, the proposed revision will make it easier for transfer students to complete the program in two years.

Current Requirements

REQUIRED MAJOR COURSES	Credits
GEL 201 Introduction to Physical Geology	4
ESC 211 Introduction to Meteorology	4
ESC 350 Computational Methods in the Field Sciences	3
ESC 351 Lab Experience in Scientific Programming	1
ESC 391 Writing in the Earth Sciences	1
ESC 412 Hydrology	4
ESC 418 Watershed Sciences	3
ESC 493 Seminar on Earth Sciences Problems	2
GEL 462 Groundwater	4
<i>GEL 415 Geomorphology</i>	<i>4</i>
<i>GEL 457 Geochemistry</i>	<i>4</i>
Designated electives by advisement	9
TOTAL	43
REQUIRED CO-REQUISITE COURSES	
MTH 201-202 Calculus I & II	6
CHM 205-206 College Chemistry I & II	8
PHS 201-202 College Physics I & II	8
TOTAL	22
DESIGNATED ELECTIVES	
ESC 313 Environmental Climatology	3
ESC 325 Wetlands Systems	3
ESC 420 Atmospheric Sensing Methods	4
ESC 455 Introduction to Soils Science	3
ENV 419 Limnology	3
ENV 436 Water Quality Analysis	4
<i>GEL 312 Mineral Science</i>	<i>4</i>
<i>GEL 411 Sedimentology and Stratigraphy</i>	<i>4</i>

Proposed Requirements

REQUIRED MAJOR COURSES	Credits
GEL 201 Introduction to Physical Geology	4
ESC 211 Introduction to Meteorology	4
ESC 350 Computational Methods in the Field Sciences	3
ESC 351 Lab Experiences in Scientific Programming	1
ESC 391 Writing in the Earth Sciences	1
ESC 412 Hydrology	4
ESC 418 Watershed Sciences	3
ESC 493 Seminar on Earth Sciences Problems	2
GEL 462 Groundwater	
Designated electives by advisement	17
TOTAL	43
REQUIRED CO-REQUISITE COURSES	
MTH 201-202 Calculus I & II	6
CHM 205-206 College Chemistry I & II	8
PHS 201-202 College Physics I, & II	8
TOTAL	22
DESIGNATED ELECTIVES	
ESC 313 Environmental Climatology	3
ESC 325 Wetlands Systems	3
ESC 420 Atmospheric Sensing Methods	3
ESC 455 Introduction to Soils Science	3
ENV 419 Limnology	3
ENV 436 Water Quality Analysis	4
<i>ESC 311 Synoptic Meteorology</i>	<i>4</i>
<i>ESC 312 Weather Forecasting</i>	<i>4</i>
<i>ESC 314 Laboratory in Climatology</i>	<i>3</i>
<i>ESC 431 GIS Applications in Earth and Env Sciences</i>	<i>3</i>
<i>ESC 462 Hydrometeorology</i>	<i>4</i>
<i>GEL 415 Geomorphology</i>	<i>4</i>
<i>GEL 457 Geochemistry</i>	<i>4</i>