April 12, 2012

To: Udayan Nandkeolyar, Chair,
    Faculty Senate Undergraduate Programs Committee

From: Christine A. Habrecht, Assistant Dean
    Colleges of Languages, Literature and Social Sciences; Natural Sciences
    and Mathematics; Visual and Performing Arts

Subject: Undergraduate Program Requirement Revision Proposals from the
        College of Natural Sciences and Mathematics

Enclosed are the forms for Program Requirement Revisions in the programs listed, as approved by the Council of the College of Natural Sciences and Mathematics on January 24, 2012:

BA Geology
BS Geology

Thank you.
**The University Of Toledo**  
Program Requirement Revision Form

Please list the proposed program structure.

<table>
<thead>
<tr>
<th>College: NSM</th>
<th>Dept: DES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Contact Person:</strong> Tom Bridgeman</td>
<td><strong>Phone:</strong> 5499</td>
</tr>
<tr>
<td><strong>Email:</strong> <a href="mailto:thomas.bridgeman@utoledo.edu">thomas.bridgeman@utoledo.edu</a></td>
<td></td>
</tr>
<tr>
<td><strong>Program Name:</strong> Geology BS/</td>
<td></td>
</tr>
<tr>
<td><strong>Program Level:</strong> □ Graduate  □ Undergraduate</td>
<td></td>
</tr>
</tbody>
</table>

**CHANGES AND REASONS FOR CHANGES**

Increased number of required hours in the major, reflecting college changes (see attached)

**APPROVAL:**

<table>
<thead>
<tr>
<th></th>
<th>Signature</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Department Curriculum Authority:</td>
<td>Thomas B. Bridgeman</td>
<td>4-3-2012</td>
</tr>
<tr>
<td>Department Chairperson:</td>
<td></td>
<td>4-3-2012</td>
</tr>
<tr>
<td>College Curriculum Authority:</td>
<td></td>
<td>4-4-2012</td>
</tr>
<tr>
<td>College Dean:</td>
<td>Christine A. Habrecht</td>
<td>4/12/12</td>
</tr>
</tbody>
</table>

After college approval, submit the original signed form to the Faculty Senate (UH3320) for undergraduate-level courses; for graduate-level courses submit the original signed form to the Graduate School (UH3240).
The University Of Toledo

PROGRAM REQUIREMENT REVISION

Please list the proposed program structure. Attach additional pages as necessary.

**College:** NSM  
**Dept/Academic Unit:** EEES  
**Contact Person:** Jon Bossenbroek  
**Phone:** x8376  
**Email:** jonathan.bossenbroek@utoledo.edu

**Program Name:** Geology BS

**Program Level:** Undergraduate

**Changes and Reason for Changes (Less than 1500 words or 5000 bytes):**
The primary reason for the changes is the new credit requirements of the College of Natural Sciences and Mathematics, which raises the required major & related credits to 64 for a BS degree.

The specific changes include:
- Increasing the number of required credits from EEES courses from 35 to 38, of which these credits consist of:
  - 23 credits from specifically required EEES courses.
  - 15 credits from two menus of upper level courses, of which the students are required to take at least two courses from each menu.

**Program: Geology B.S.**

1. **Required EEES Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>EEES 1020</td>
<td>Physical Geology Laboratory</td>
<td>1</td>
</tr>
<tr>
<td>EEES 2100</td>
<td>Fundamental of Geology</td>
<td>4</td>
</tr>
<tr>
<td>EEES 2230</td>
<td>Earth History</td>
<td>3</td>
</tr>
<tr>
<td>EEES 2500</td>
<td>Computer Applications</td>
<td>1</td>
</tr>
<tr>
<td>EEES 3210</td>
<td>Earth Materials I</td>
<td>3</td>
</tr>
<tr>
<td>EEES 3220</td>
<td>Earth Materials II</td>
<td>3</td>
</tr>
<tr>
<td>EEES 3310</td>
<td>Structural Geology &amp; Map</td>
<td>3</td>
</tr>
<tr>
<td>EEES 4640</td>
<td>Applied Geology</td>
<td>3</td>
</tr>
<tr>
<td>EEES 4920</td>
<td>Senior Geology Seminar</td>
<td>2</td>
</tr>
</tbody>
</table>

**Sub-Total** 23
2. EEES Elective Requirements:
Five courses total are required from groups A & B (with at least 2 from each group)

*Group A*
- EEES 2400 – Oceanography 3
- EEES 3100 – Surficial Geology 3
- EEES 4100 – Glacial Geology 3
- EEES 4200 – Quaternary Geology 3
- EEES 4240 – Soil Science 3

*Group B*
- EEES 4150 – Evolution 3
- EEES 4220 – Geochemistry (possible Biogeochemistry in the future) 3
- EEES 4410 – Hydrogeology 3
- EEES 4450 – Hazardous Waste 3
- EEES 4490 – Remote Sensing 3
- EEES 4610 – Geophysics 4

Sub-Total 15-16

3. Required Non-EEES Courses
- CHEM 1230 – General Chemistry I 4
- CHEM 1240 – General Chemistry II 4
- CHEM 1280 – General Chemistry Lab I 1
- CHEM 1290 – General Chemistry Lab II 1

Choose one from:
- MATH 1850 & 1860 Calculus I & II 4, 4
- MATH 1750 & 1760 Math for Life Sciences I & II 4, 3

Choose one from:
- PHYS 2070 & 2080 General Physics I & II 5, 5
- PHYS 2130 & 2140 For Scientists & Engineers I & II 5, 5

Sub-Total 27-28

TOTAL 65-67

4. Additional Requirements
Students must achieve at least a 2.5 GPA in the major. No required courses may be taken as P/NC (pass/no credit).

Program Approval

DES Curriculum Committee Chairperson

DES Chairperson
The University Of Toledo
Program Requirement Revision Form

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<td>Program Level: Graduate Undergraduate</td>
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The University Of Toledo

PROGRAM REQUIREMENT REVISION

Please list the proposed program structure. Attach additional pages as necessary.

College: NSM    Dept/Academic Unit: EEES
Contact Person: Jon Bossenbroek Phone: x8376
Email: jonathan.bossenbroek@utoledo.edu

Program Name: Geology BA

Program Level: Undergraduate

Changes and Reason for Changes (Less than 1500 words or 5000 bytes):
The primary reason for the changes is the new credit requirements of the College of Natural Sciences and Mathematics, which raises the required major & related credits to 58 credits for a BA.

The specific changes include:
• Increasing the number of required credits from EEES courses from 35 to 41, of which these credits consist of:
  o 23 credits from specifically required EEES courses.
  o 18 credits from two menus of upper level courses, of which the students are required to take three courses from each menu.
• Increasing the number of required credits from non-EEES (i.e. related courses) courses from 16 credits to 18 credits.
  o Students will now be required to take 9 credits from approved electives from other NSM departments, instead of the previously required 7 credits.

Program: Geology B.A.
1. Required EEES Courses
   EEES 1020 - Physical Geology Laboratory 1
   EEES 2100 - Fundamental of Geology 4
   EEES 2230 - Earth History 3
   EEES 2500 - Computer Applications 1
   EEES 3210 - Earth Materials I 3
   EEES 3220 - Earth Materials II 3
   EEES 3310 - Structural Geology & Map 3
   EEES 4640 - Applied Geology 3
   EEES 4920 - Senior Geology Seminar 2
2. EEES Elective Requirements:
Three courses from group A & three courses from group B

   Group A
   EEES 2400 – Oceanography                      3
   EEES 3100 – Surficial Geology                   3
   EEES 4100 – Glacial Geology                    3
   EEES 4200 – Quaternary Geology                 3
   EEES 4240 – Soil Science                       3

   Group B
   EEES 4150 – Evolution                          3
   EEES 4220 – Geochemistry (possible Biogeochemistry in the future) 3
   EEES 4410 – Hydrogeology                       3
   EEES 4450 – Hazardous Waste                    3
   EEES 4490 – Remote Sensing                     3
   EEES 4610 – Geophysics                         4

Sub-Total                                      18-19

3. Required Non-EEES Courses
   MATH 1340 or (MATH 1320 & 1330)             4-6
   or an approved higher level math course
   CHEM 1230 – General Chemistry I                4
   CHEM 1280 – General Chemistry Lab I            1
   9 additional credits of approved electives in astronomy, biology (including EEES ecology courses), chemistry, engineering, geography, and/or physics
Sub-Total                                      18-20

TOTAL                                          59-62

4. Additional Requirements
Students must achieve at least a 2.0 GPA in the major. No required courses may be taken as P/NC (pass/no credit).

Program Approval

DES Curriculum Committee Chairperson

DES Chairperson