21. Change in Curriculum

**College of Geosciences**

Minor in Earth Sciences
CHANGE IN CURRICULA
CHANGE IN CURRICULUM

COLLEGE OF GEOSCIENCES

MINOR IN EARTH SCIENCES
Texas A&M University
Request for a Change in Curriculum
Undergraduate + Graduate + Professional

1. Program request type: ☑️ Undergraduate  □ Graduate  □ First Professional (e.g., DPM, JD, MD, etc.)
   □ Degree Program  ☑️ Minor  □ Certificate

2. Request change for:
   Environmental Programs in Geosciences

3. Request submitted by (Department or Program Name):
   Program Designation and Name:
   Minor in Earth Sciences

4. Brief description of change:
   - add OCNG 425 as one option among several; add restriction "ENGS and ENST students may not select this minor"

5. Rationale for change:
   OCNG 425 is relevant to the content of this minor; this curriculum is redundant for ENGS and ENST students.

Use the checkboxes below to make sure that all information is included.

7. a. Proposed curriculum attached. ☑️ Yes  □ No

   b. Current catalog curriculum with handwritten edits attached. ☑️ Yes  □ No

   c. Current Howdy degree evaluation with handwritten edits attached. ☑️ Yes  □ No

   Please make sure the attached proposed curriculum, catalog and Howdy degree evaluation match.

8. a. Will degree program hours change (increase/decrease) due to the proposed curriculum changes? □ Yes  ☑️ No

   b. If yes, degree program hours will change from: _________ to: _________

   c. If yes, is the Texas Higher Education Coordinating Board form attached?
      http://www.thecb.state.tx.us/index.cfm?objectid=A0F9F7FA-9A92-4F11-2756AD3BBFF01D60  □ Yes  □ No

9. If proposed changes affect other unit(s), are letters of support attached? □ Yes  ☑️ No

IMPORTANT NOTE: Curriculum changes submitted through the approval process and fully approved by February (December-UCCGC, January-Faculty Senate, February-President) will be effective in the next academic year. Changes requiring approval beyond the University should complete the internal approval process early in the fall semester whenever possible in order to ensure timely implementation.

Approval recommended by:
Christian Brannstrom 1/2/2015  Dean of College 1/11/15
Department Head or Program Chair (Type Name & Sign)  Date
Chair, College Review Committee 1/11/15  Date
Chair, GC or UCC 1/11/15  Date

Questions regarding this form should be directed to Curricular Services at 845-8201 or sandra-williams@tamu.edu
Curricular Services – 04/14

RECEIVED NOV 12 2015
15 September 2015

MEMORANDUM

TO: Dr. Chris Houser, Undergraduate and Faculty Affairs, College of Geosciences
FROM: Dr. Christian Brannstrom, Director of Environmental Programs in Geosciences

SUBJECT: Curricular Changes to ENVP minors

We request the following changes to the Earth Science minor:

-OCNG 425 should be added;

-Environmental Geosciences and Environmental Studies students may not select this minor
Freshmen entering the program take a first year seminar, GEOS 101. The choice is not restricted. Students transferring or changing majors into the program, who have not taken GEOS 101, are required to take GEOS 481 in their junior or senior year.

2. It is recommended to select a course that also fulfills an International and Cultural Diversity (p. 34) requirement.

3. Select courses from the list below. If students use nine credits of allowed OCNG courses (e.g., OCNG 401, OCNG 350, OCNG 451, OCNG 485) as Coastal and Marine Environments theme electives, they will receive an OCNG minor with their BS in ENGS degree. If one of these introductory Geoscience courses and associated labs is listed in Year Two is OCNG 251 with OCNG 222, then only two (six credits) of the theme electives needs to be from OCNG to still get the minor.

4. Students will not be permitted to receive credit for both the 400- and 600-level versions of certain courses because the content and learning outcomes are too similar (e.g., OCNG 440/OCNG 640, GEOS 470/OCNG 657).

5. These two graduate courses will be taken for dual undergraduate/graduate credit and will contribute to the minor.

Coastal and Marine Environments Theme List

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GEOS 370/</td>
<td>Coastal Processes</td>
<td>3</td>
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<td>MARS 370</td>
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<tr>
<td>OCNG 401</td>
<td>Interdisciplinary Oceanography</td>
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<tr>
<td>OCNG 350</td>
<td>Marine Pollution</td>
<td>3</td>
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<tr>
<td>OCNG 410</td>
<td>Introduction to Physical Oceanography</td>
<td>3</td>
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<tr>
<td>OCNG 420</td>
<td>Introduction to Biological Oceanography</td>
<td>3</td>
</tr>
<tr>
<td>OCNG 425</td>
<td>Microbial Oceanography</td>
<td>3</td>
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<tr>
<td>OCNG 430</td>
<td>Introduction to Geological Oceanography</td>
<td>3</td>
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<tr>
<td>OCNG 440</td>
<td>Introduction to Chemical Oceanography</td>
<td>3</td>
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<tr>
<td>WFSC 418</td>
<td>Ecology of the Coastal Zone</td>
<td>3</td>
</tr>
<tr>
<td>WFSC 425</td>
<td>Marine Fisheries</td>
<td>3</td>
</tr>
<tr>
<td>WFSC 428</td>
<td>Wetland Ecosystem Management</td>
<td>4</td>
</tr>
</tbody>
</table>

ATMO 201 Weather and Climate

Four GEOS or Introduction to Environmental Geoscience

GEOG 309 Geography of Energy

GEOG 324 Global Climatic Regions

GEOG 440 Polar Regions of the Earth: Science, Society, and Discovery

GEOG 410 Global Change

GEOG 444 The Science and Politics of Global Climate Change

GEOG 481 Seminar

Total Semester Credit Hours 16

Students choosing to complete a minor in Climate Change must meet the following requirements:

- A minimum of 6 hours must be taken in residence at either Texas A&M University/College Station or Galveston.
- A minimum cumulative GPA of 2.0 must be achieved for all courses in the minor.
- Take a minimum of 16 hours of coursework, of which 3 hours of GEOS 210 Climate Change are required.
- The remaining 13 hours must include at least 3 hours of 400-level coursework and another 3 hours of upper-level (300- or 400-level) coursework from the list.
- Students with majors in the College of Geosciences must select only courses outside of their home department.

Earth Sciences - Minor

The purpose of the Earth Sciences minor is to study the different physical earth processes and systems.

Students choosing to complete a minor in Earth Sciences must meet the following requirements:

- A minimum of 6 hours must be taken in residence at either Texas A&M University/College Station or Galveston.
- A minimum cumulative GPA of 2.0 must be achieved for all courses in the minor.
- Take a minimum of 15 hours of coursework in the College of Geosciences.
- The 15 hours must include at least 3 hours of 400-level coursework and another 3 hours of upper-level (300- or 400-level) coursework from the list.
- Students with majors in the College of Geosciences must select only courses outside of their home department.

Climate Change - Minor

The College of Geosciences offers a minor in Climate Change. For specific program information, please reference the program requirements.

Program Requirements

GEOS 210 Climate Change

Select the remaining courses from the following:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ATMO 201</td>
<td>Weather and Climate</td>
<td>3</td>
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<tr>
<td>ATMO 202</td>
<td>Weather and Climate Laboratory</td>
<td>3</td>
</tr>
<tr>
<td>ATMO 324</td>
<td>Physical and Regional Climatology</td>
<td>3</td>
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<tr>
<td>ATMO 441</td>
<td>Satellite Meteorology and Remote Sensing</td>
<td>3</td>
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</tbody>
</table>
Environmental Geosciences - Minor

The purpose of the Environmental Geosciences minor is to study the environmental impacts on the different earth systems.

Students in the Environmental Programs are not allowed to declare Environmental Geosciences as a minor.

Students of other disciplines choosing to complete a minor in Environmental Geosciences must meet the following requirements:

- A minimum of 6 hours must be taken in residence at either Texas A&M University/College Station or Galveston.
- A minimum cumulative GPA of 2.0 must be achieved for all courses in the minor.
- Take a minimum of 15 hours of coursework in the College of Geosciences, of which 3 hours of GEOS 105 is required.
- The remaining 12 hours must include at least 3 hours of 400-level coursework and another 3 hours of upper-level (300- or 400-level) coursework from the list.
- Students with majors in the College of Geosciences must select only courses outside of their home department.

Program Requirements

Some of the courses have prerequisites, so make sure to check the catalog before enrolling in the course.

GEOS 105 Introduction to Environmental Geoscience  3
Select remaining courses from at least three of the following five groups.  12

Group 1
ATMO 326 Environmental Atmospheric Science
ATMO 383 Introduction to Atmospheric Chemistry and Air Pollution
ATMO 463 Air Pollution Meteorology
ATMO 484 Laboratory Methods in Atmospheric Sciences

Group 2
GEOS 205 Environmental Change
GEOS 309 Geography of Energy
GEOS 330 Resources and the Environment
GEOS 380 Workshop in Environmental Studies
GEOS 430 Environmental Justice
GEOS 467 Dynamic Modeling of Earth and Environmental Systems

Group 3
GEOL 410 Hydrogeology
GEOL 420 Environmental Geology
GEOL 451 Introduction to Geochemistry

Group 4
GEOS 210 Climate Change
GEOS 410 Global Change
GEOS 430 Global Science and Policy Making
GEOS 444 The Science and Politics of Global Climate Change

Group 5
OCNG 420 Introduction to Biological Oceanography

Total Semester Credit Hours  15

At least 6 hours must be upper level, 3 of which must be 400 level.

Students with majors in the College of Geosciences must select only courses outside of their home department.

Some of the courses have prerequisites, so make sure to check the catalog before enrolling in the course.
unofficial evaluation

Area: Work Not Applied - Met
Description: See advisor for acceptable substitutions.

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<tr>
<th>Met</th>
<th>Condition Rule</th>
<th>Subject</th>
<th>Attribute</th>
<th>Low</th>
<th>High</th>
<th>Required</th>
<th>Required</th>
<th>Term</th>
<th>Subject</th>
<th>Course Title</th>
<th>Attribute</th>
<th>Credits</th>
<th>Courses</th>
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<tr>
<td>No</td>
<td>A.</td>
<td>Courses not applied</td>
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Total Credits and GPA 0.000 .00

unofficial evaluation

Area: Earth Science Minor (15.000 credits) - Not Met
Description: A minimum of 15.000 credits is required. At least 8 hours must be 300-400 level courses and a minimum of 6 hours must be taken in residence at TAMU.

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<tr>
<th>Met</th>
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<th>Course Title</th>
<th>Attribute</th>
<th>Credits</th>
<th>Grade</th>
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<td>Must make grade of 'C' or better.</td>
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<td>A) ATMO 201, 202, 324, 441</td>
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<td>B) GEOG 203, 309, 324, 331, 360, 361, 370, 390, 400, 404, 434, 462, 467</td>
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<td>C) GEOL 101, 104, 203, 301, 302, 306, 308, 312, 410</td>
<td>GEEP 341, 413</td>
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<td>D) GEOG 401, 442, 470</td>
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<td>E) OCNC 251, 401, 422, 470, 430, 440</td>
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No AND B. Requirement II 6hrs

Must make grade of 'C' or better.

Select from ATMO 201, 202, 324, 441; GEOG 203, 309, 324, 331, 360, 361, 370, 390, 400, 404, 434, 462, 467; GEOL 101, 104, 203, 301, 302, 306, 308, 312, 410; GEEP 341, 413; GEOG 401, 442, 470; OCNC 251, 401, 422, 470, 430, 440.

OCNC 425

Total Credits and GPA 0.000 .00

unofficial evaluation

Area: University Writing Requirement - Not Met

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<th>Attribute</th>
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<th>Term</th>
<th>Subject</th>
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<th>Attribute</th>
<th>Credits</th>
<th>Grade</th>
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<td>Two courses required.</td>
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<td>Only sections of ATMO 450, 459, 493, 491; GEOG 309, 324, 360, 404, 430, 435, 476, 491; GEOL 301, 311-312, 410-420, 440, 491; GEEP 491; GEOG 405, 491; UGET 491 with the Writing attribute [UWRT] may be used to satisfy this requirement.</td>
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Total Credits and GPA 0.000 .00

unofficial evaluation

Area: Int'l & Cult Diversity - Not Met

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<th>Met</th>
<th>Condition Rule</th>
<th>Subject</th>
<th>Attribute</th>
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<th>Term</th>
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<th>Course Title</th>
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<tr>
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<td>Select from courses with the International and Cultural Diversity attribute [ICDC] (except sections of BUSN 289 with the UWRT attribute).</td>
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Total Credits and GPA 0.000 .00