# Proposed Curriculum Revisions for the Environmental Science BS

**Department of Earth and Atmospheric Sciences**

**February 1, 2009 (Submitted by Vincent Idone and Christopher Thorncroft)**
**Revised by department 2/9/09; 2/12/09; 2/24/09 (purple); 3/09/09 (tan); 3/12/09**

***Background***. The current requirements for the Environmental Science BS (ENV BS) consist of a "core" course sequence totaling 42 credits, as well as 19-21 credits in one of four distinct concentrations: Atmospheric Science, Biology, Geography or Geology. This overall configuration appears to have been successful and is popular with students. However, a majority of the faculty members here feel that a revision of the content, if not the overall structure, of this major is necessary now. Subsequent to a charge by the new Chair of DEAS, Chris Thorncroft, to consider specific revisions, multiple meetings have taken place (including consultation with external, practicing environmental scientists) resulting in a consensus opinion to recommend the following curriculum revisions for approval by University governance:

1) Bolstering of the quantitative "core" curriculum content of the Environmental Science BS (ENV BS), increasing the core credit load from 42 to 45 credits;

2) Major modification of the curriculum of the "Atmospheric Science" concentration option, renaming it to "Climate," making it more distinctive relative to the Atmospheric Science BS.

3) Moderate revision and updating of the three other concentrations, "Biology," "Geography," and "Geology."

***Core curriculum revision***. The consensus opinion reached at a recent full faculty meeting is that the core curriculum needs to be strengthened academically. This would be accomplished by requiring a second semester of chemistry, A Chm 121 (*General Chemistry II*), requiring only calculus-based introductory physics, A Phy 140 (*Physics I: Mechanics*), adding another physics course (either calculus-based A Phy 150, *Physics II: Electromagnetism* or A Phy 202, *Environmental Physics*), and dropping the previously required "policy" course (R Pos 396 or R Pub 465 or H Sph 201). (Policy courses are, in fact, valuable, and will be advocated in advisement.) In addition, each ENV BS student would now be required to take an "essentials" type 200-level course in atmospheric science and geology. This would ensure that all ENV BS students are exposed to the most relevant concepts of the classical disciplines of meteorology and geology appropriate to what an environmental scientist will typically need. In this regard, the currently existing course, A Atm 210 (*Atmospheric Structure, Thermodynamics, and Circulation*) can be modified to serve this role for the meteorology course, mainly by eliminating the currently integrated lab component, which is primarily geared toward operational aspects of weather forecasting (arguably irrelevant to ENV-BS students). This lab will become A Atm 209 (*Weather Workshop*) to be required only for ATM BS majors. For the geology course, we will create an appropriate new course, A Geo 221 (*Minerals, Rocks, and Geological Time*). With these revisions, the ENV BS core would total 45 credits. A Atm 301 (*Surface Hydrology and Hydrometeorology*) and A Env/Geo 210 (*Earth Materials*) would be eliminated as required in the core. A comparison of the current core curriculum and the proposed core

curriculum appears in the table below. (The course numbers and credits appearing below reflect the most current curricula approved or pending in the departments involved, most specifically Biological Sciences and Geography and Planning.)

| ENVIRONMENTAL SCIENCE BS Core Curriculum (Required Courses) | |
|---|---|
| **CURRENT** | **PROPOSED REVISION** |
| A Atm 301 Surface Hydrology and Hydromet. (3) | A Atm 210 Atmos. Structure, Thermodynamics… (3) |
| A Atm/Env 327 Meteor. and Environ. Meas. (3) | " " |
| A Bio 110 General Biology I (4) | A Bio 120 General Biology I (3) (revised) |
| A Chm 120 (or T Chm 130) General Chemistry I (3) | " " |
| A Env 105 Intro. to Environmental Sci. (3) | " " |
| A Env/Gog 201 Environmental Analysis (3) | " " |
| A Env/Geo 210 Earth Materials (3) | A Geo 221 Minerals, Rocks and Geological Time (4) |
| A Env/Geo 250 Sustainable Development: Energy (3) | " " |
| A Env 490 Major Topics in Environmental Sci. (3) | " " |
| A Mat 111 Algebra and Calculus II (4) or<br>A Mat 112 Calculus I (4) or T Mat 118 (4) | " " |
| A Mat 113 Calculus II (4) or T Mat 119 (4) | " " |
| A Phy 105 General Physics I (3) or<br>A Phy 140 Physics I: Mechanics. (3) | A Phy 140 Physics I: Mechanics (3) or T Phy 141 |
| R Pos 309 OR R Pub 465 OR H Sph 201 (3)<br>(Policy course) | A Phy 150 Physics II: Electromagnetism (3) or T Phy 151 Honors Physics II: Electromagnetism (3) or Phy 202 Environmental Phys. (3) |
| ---------- | A Chm 121 General Chemistry II (3) or T Chm 131 |
| TOTAL: 42 Credits | TOTAL: 45 Credits |

***Concentration revisions.*** Revisions for the respective "concentrations" are proposed as follows, and are the result of several iterations of consultation with faculty members in Biological Sciences, Geography and Planning, Physics, and Mathematics and Statistics:

**Climate Concentration** (**21** credits total; previously "Atmospheric Science")

**Required Courses** (**9 cr.**): A Atm 306 Climate Variability and Change (3) (to be created);
A Env/Geo 450 Paleoclimatology (3) (to be revised);
A Gog 304 Climatology (3);

**Elective courses** (**12 cr.**) distributed as **at least 3 credits** from:
A Atm 301 Surface Hydrology and Hydrometeorology (3);
A Atm 304/Z Air Quality (3);
A Atm 307/Z Atmospheric Chemistry (3);
A Atm 335 Meteorological Remote Sensing (3);
A Atm 414 Air Pollution (3);
A Geo 435 Geohydrology (3);
A Mat 308 Topics in Statistical Inference (3);

with **any remaining elective credits** satisfied from:
A Chm 220 Organic Chemistry I (3);
A Chm 221 Organic Chemistry II (3);
I Csi 201 Introduction to Computer Science (4);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 311 Ordinary Differential Equations (3);
A Phy 150 Physics II: Electromagnetism (3);*
T Phy 151 Honors Physics II: Electromagnetism (3);*
A Phy 202 Environmental Physics (3);*
A Phy 240 Physics III: Structure of Matter (3);

* Only **one** of A Phy 150, T Phy 151 or A Phy 202 can apply to the concentration.

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**Biology Concentration** (**21** credits total)

**Required Courses (8 cr.)**: A Bio 121 General Biology II (3);
A Bio 122 General Biology I Lab (1);
A Bio 123Z General Biology Lab II (1);
A Bio 230 People and Resources in Ecological Perspective (3);

**Elective courses (13 cr.)** distributed as at least **9 credits** from:
A Bio 308 Parasitic Diseases and Human Welfare (3);
A Bio 320 Ecology (3);
A Bio 321 The Insects (3);
A Bio 327 Experimental Ecology (3);
A Bio 402 Evolution (3);
A Bio 432 Animal Behavior (3);
A Bio 442 Restoration Ecology (3);
A Bio 443 Restoration Ecology Lab (1);
A Bio 455 Plant Ecology (3);

A Bio 456 Plant Ecology Lab (1);
A Gog 407 Biogeography (3) [being created by G+P for fall '09];
A Mat 308 Topics in Statistical Inference (3);

with **any remaining elective credits** for the concentration satisfied from:
A Bio 216 Perspectives in Life Sciences (3);
A Bio 218 Introduction to Plant Biology (3);
A Bio 222 Biological Consequences of Global Climate Change (2);
A Chm 220 Organic Chemistry I (3);
A Chm 221 Organic Chemistry II (3);
A Env/Geo 466 Marine and Estuary Systems (3);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 220 Linear Algebra (3);
A Mat 311 Ordinary Differential Equations (3);

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**Geography Concentration** (**21** credits total)

**Required Courses** (**10 cr.**): A Gog/Pln 220 Introduction to Urban Planning (3);
A Gog 290 Cartography (4);
A Gog/Pln 330 Principles of Environmental Management (3) **or**
A Gog/Pln 430/Z Environmental Planning (3);*

**Elective courses** (**11 cr.**) distributed as at least **6 credits** from:
A Gog 304 Climatology (3);
A Gog/Pln 330 Principles of Environmental Management (3);
A Gog 344Y World Population (3);
A Gog 354 Environment and Development (3);
A Gog 390 Intermediate Cartography (3);
A Gog 407 Biogeography (3) [being created by G+P for fall '09];
A Gog 414 Computer Mapping (3);
A Gog/Pln 430/Z Environmental Planning (3);
A Gog 431 Climatic Change (3);
A Gog 479 Fundamentals of Applied GPS (3);
A Gog 484 Introduction to Remote Sensing of the Environ. (4);
A Gog 485Z Advanced Remote Sensing (3);
A Gog 495 Introductory MapInfo (1);
A Gog 496 Geographic Information Systems (3);
A Mat 308 Topics in Statistical Inference (3);

with **any remaining elective credits** satisfied from:
A Gog 293 Interpretation of Aerial Photographs (3);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 220 Linear Algebra (3);
A Mat 311 Ordinary Differential Equations (3);
I Csi 201 Introduction to Computer Science (4);

* **One** of A Gog/Pln 330 or Gog/Pln 430/Z must be taken, but **both** can apply to this concentration.

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**Geology Concentration** (**21** credits total)

**Required Courses** (**11 cr.**): A Geo 222/Z Introductory Field Geology (1) (to be created for F'09);
A Env/Geo 350Y Environmental Geochemistry (4);
A Env/Geo 435 Geohydrology (3);
A Geo 470 Tectonics (3)

**Elective courses** (**10 cr.**) distributed as at least **3 credits** from:
A Env/Geo 450 Paleoclimatology (3);
A Env/Geo 466 Marine and Estuary Systems (3)
A Geo 330 Structural Geology (3);
A Geo 331 Field Excursions for Structural Geology (1);
A Geo 332 Structural Geology Lab (1);

with **any remaining elective credits** satisfied from:
A Chm 220 Organic Chemistry (3);
A Chm 221 Organic Chemistry II (3);
I Csi 201 Introduction to Computer Science (4);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 220 Linear Algebra (3);
A Mat 308 Topics in Statistical Inference (3);
A Mat 311 Ordinary Differential Equations (3);
A Phy 150 Physics II: Electromagnetism (3);*
T Phy 151 Honors Physics II: Electromagnetism (3);*
A Phy 202 Environmental Physics (3);*
A Phy 240 Physics III: Structure of Matter (3);

* Only **one** of A Phy 150, T Phy 151 or A Phy 202 can apply to this concentration elective.

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The revisions here reflect what we feel is a good balance between rigor and flexibility within each concentration. Students can go "heavy" in the particular concentration subject area, or lighter, filling it out with always useful (for this field) math, chemistry or physics.

With the onset of the new curriculum (2009-2010) and the deactivation of various courses (some of which were required previously in one or more DEAS majors), we will necessarily have to resort to course substitutions to allow our current declared majors to finish in a timely manner. This is accepted by the faculty members of DEAS, and would be implemented through individual advisement.

Next, a simple listing is provided of all the specific changes reflected in these revisions, along with reference (when necessary) to the relevant course action form (CAF).

# Summary Listing of ENV SCI BS Curriculum Revision Actions

**"Core" Curriculum Revisions**

1) **Eliminate** A Atm 301, *Surface Hydrology and Hydrometeorology*, as required for major core (CAF_1).
2) **Eliminate** A Env/Geo 210, *Earth Materials*, as required for major core, and deactivate course (see CAF_2).
3) **Accept only** A Phy 140, *Physics I: Mechanics*, (see CAF_3) **not** A Phy 105, *General Physics I*, as first required physics course in major core (see CAF_4).
4) **Require** A Phy 150, *Physics II: Electromagnetism*, (see CAF_5) **or** A T Phy 151, *Honors Physics II: Electromagnetism*, (see CAF_84) **or** Phy 202, *Environmental Physics*, (see CAF_6) as second required physics course in major core.
5) **Eliminate** R Pos 396 (see CAF_7) **or** R Pub 465 (see CAF_8) **or** H Sph 201 (see CAF_9) as satisfying a requirement in major core.
6) **Require** A Chm 121, *General Chemistry II* (see CAF_10), or T Chm 131, *Advanced General Chemistry II*, in major core (see CAF_81).
7) **Revise** A Atm 210, *Atmospheric Structure, Thermodynamics, and Circulation*, to a 3-credit lecture course (see CAF_11 and CAF_12). A Atm 210 **will be required** now for all three undergraduate degrees: the Atmospheric Science BS, the Earth and Atmospheric Sciences BA, and the Environmental Science BS.
8) **Create** 1-credit lab course A Atm 209, *Weather Workshop*, and **add** this as a required course **only** for Atmospheric Science BS majors (see CAF_13).
9) **Create** and **require** A Geo 221, *Minerals, Rocks, and Geological Time*, in ENV BS major core (see CAF_14) as well as in the Earth and Atmospheric Sciences BA.
10) **Modify** pre-reqs of A Atm 211, *Weather Analysis and Forecasting*, to include A Atm 209 and A Atm 210 or A Atm 210Z (see CAF_15).
11) **Require** A Bio 120, *General Biology I*, the new 3-credit version of the previously required 4-credit A Bio 110, *General Biology I* in core (see CAF_16).

**"Atmospheric Science" Concentration to "Climate" Concentration Revisions**

12) The "**Climate**" concentration will **replace** the current "**Atmospheric Science**" concentration, requiring at least 21 credits.
13) **Modify** physics pre-reqs for A Atm 304/Z, *Air Quality*, to A Phy 105 or 140 or 141 (see CAF_17).
14) **Modify** physics pre-reqs for A Atm 307/Z, *Atmospheric Chemistry*, to A Phy 105 or 140 or 141 (see CAF_18).
15) **Create** A Atm 306, *Climate Change and Variability*, and **require** for Climate concentration (see CAF_19); this course will be available to Atm BS majors as an elective option.
16) **Modify** pre-requisites of A Atm 414, *Air Pollution Meteorology*, to only require "permission of instructor" (see CAF_20).
17) **Require** A Atm 306, *Climate Variability and Change*(see CAF_19), A Geo 450, *Paleoclimatology*, (see CAF_21) and A Gog 304, *Climatology* (see CAF_22); A Geo 450 (previously *Climate Change*)

will need to be modified from four to three credits (see CAF_21).

18) **Require** at least 3 credits from A Atm 301 (see CAF_1), 304/Z (see CAF_17), 307/Z (see CAF_18), 335 (see CAF_23), 414 (see CAF_20), A Geo 435 (see CAF_24), A Mat 308 (see CAF_25), with a total of 12 credits from the prior list of courses and A Chm 220 (see CAF_26), 221 (see CAF_27), I Csi 201 (see CAF_28), A Env 496 (see CAF_29), A Mat 214 (see CAF_30), 311 (see CAF_31), A Phy 150 (see CAF_5), T Phy 151 (see CAF_85), A Phy 202 (see CAF_6), 240 (see CAF_32). Only one of A Phy 150, T Phy 151, or A Phy 202 can apply to this concentration.

**"Biology" Concentration Revisions**

19) **Eliminate** requirement of A Bio 320 (see CAF_33).
20) **Require** A Bio 121 (see CAF_34), 122 (see CAF_35), 123Z (see CAF_36), and 230 (see CAF_37) (8 credits).
21) **Require** at least 9 credits from A Bio 308 (see CAF_38), 320 (see CAF_33), 321 (see CAF_39), 327 (see CAF_40), 402 (see CAF_41), 432 (see CAF_42), 442 (see CAF_43), 443 (see CAF_44), 455 (see CAF_45), 456 (see CAF_46), A Gog 407 (see CAF_47), and A Mat 308 (see CAF_25), with a total of 13 credits from the prior list of courses and A Bio 216 (see CAF_48), 218 (see CAF_49), 222 (see CAF_50), A Chm 220 (see CAF_26), 221, (see CAF_27) A Env 466 (see CAF_51), 496 (see CAF_29), A Mat 214 (see CAF_30), 220 (see CAF_52), and 311 (see CAF_31).

**"Geography" Concentration Revisions**

22) **Require** A Gog/Pln 220 (see CAF_53), 290 (see CAF_54), and 330 (see CAF_55) or 430/Z (see CAF_56) (10 credits).
23) **Require** at least 6 credits from A Gog 304 (see CAF_22), 330 (see CAF_55), 344Y (see CAF_57), 354 (see CAF_58), 390 (see CAF_59), 407 (see CAF_47), 414 (see CAF_60), 430/Z (see CAF_56), 431 (see CAF_61), 479 (see CAF_62), 484 (see CAF_63), 485/Z (see CAF_64), 495 (see CAF_65), 496 (see CAF_66), and, A Mat 308 (see CAF_25), with a total of 11 credits from the prior list of courses and A Gog 293 (see CAF_67), A Env 496 (see CAF_29), A Mat 214 (see CAF_30), 220 (see CAF_52), 311 (see CAF_31), and I Csi 201 (see CAF_28); one of A Gog/Pln 330 (see CAF_55) or 430/Z (see CAF_56) must be taken, but both can apply to the concentration.

**"Geology" Concentration Revisions**

24) **Eliminate** A Env/Geo 212 (see CAF_68), 230 (see CAF_69), and 231 (see CAF_70) as previously required in this concentration.
25) **Require** A Geo 221, *Introductory Field Geology*, (to be created as a 1-credit course with a Written Discourse option, see CAF_71 and CAF_72), A Geo 350Y (see CAF_73), 435 (see CAF_24), and 470 (see CAF_74) (11 credits).
26) **Require** at least 3 credits from A Env/Geo 466 (see CAF_51), A Geo 330 (see CAF_75), 331 (see CAF_76), 332 (see CAF_77), and 450 (see CAF_21), with a total of 11 credits from the prior list

of courses and A Chm 220 (see CAF_26), 221 (see CAF_27), I Csi 201 (see CAF_28), A Env 496 (see CAF_29), A Mat 214 (see CAF_30), 220 (see CAF_52), 308 (see CAF_25), 311 (see CAF_31), A Phy 150 (see CAF_5), 202 (see CAF_6), and 240 (see CAF_32). Only one of A Phy 150 (see CAF_5) or 202 (see CAF_6) can apply in this concentration.

**Incidental Curriculum Revisions**

27) **Deactivate** A Env/Geo 106 (see CAF_78).
28) **Deactivate** A Env/Geo 212 (see CAF_68).
29) **Deactivate** A Env/Geo 230 (see CAF_69).
30) **Deactivate** A Env/Geo 231 (see CAF_70).
31) **Modify** A Env/Geo 466 (see CAF_51).
32) **Replace** present Geology minor requirements of A Geo 106 (see CAF_78) and 230 (see CAF_69) with A Geo 221 (see CAF_14) and 222/Z (see CAF_71 and CAF_72).
33) **Eliminate** the requirement of A Geo 106 (see CAF_78) from the Earth and Atmospheric Sciences BA.
34) **Modify** the Earth and Atmospheric Sciences BA requirement to: A minimum of 56 credits for the combined major and minor including: A Phy 105 or 140 or T Phy 141, A Phy 106 or 145, 108 or 150 or T Phy 151, A Phy 109 or 155; A Mat 101, 108, 111; A Chm 120 or T Chm 130; A Env/Geo 105 or A Gog 101, Env/Geo 250; ~~A Geo 106~~ (see CAF_78), A Geo 221 (see CAF_14); A Atm 100 or 102 or 107 (see CAF_93), 210 or 210Z, ~~211~~ (see CAF_15); one course from: A Gog 290 (see CAF_54), 304, 407 (see CAF_47), 431, 484 (renumbered by G+P from 385), 496; at least 15 credits from the following, including at least two courses each with the Atm or Geo designation: A Atm 211 (see CAF_15), A Atm 301, 304 or 304Z, ~~305~~ (see CAF_94), 306 (see CAF_19), 307 or 307Z, 311, 335, 414, Atm/Env 327, A Env/Geo 350, ~~420~~ (deactivated, see CAF_79), 435, 450, 466, A Geo 330 (see CAF_76), 331 (see CAF_77), 470 (see CAF_74), A Mat 113 or T Mat 119 (see CAF_95). (See the revised Bulletin Copy section for this major.)
35) **Deactivate** A Env/Geo 420, *Instrumental Analysis in Environmental Science* (see CAF_79).
36) **Accept** T Chm 121 *Advanced General Chemistry I* as well as A Chm 120 (see CAF_80) in all DEAS majors.
37) **Accept** T Chm 131 *Advanced General Chemistry II* as well as A Chm 130 (see CAF_81) in all DEAS majors.
38) **Accept** T Mat 118 *Honors Calculus I* as well as A Mat 112 (see CAF_82) in all DEAS majors.
39) **Accept** T Mat 119 *Honors Calculus II* as well as A Mat 113 (see CAF_83) in all DEAS majors.
40) **Accept** T Phy 141 *Honors Physics I* as the first semester of physics in all DEAS degrees (see CAF_84).
41) **Accept** T Phy 151 *Honors Physics II* as the second semester of physics in all DEAS degrees (see CAF_85).
42) **Modify** prerequisites for A Env/Geo 435, *Geohydrology*, to include A Geo 221 (see CAF_24).
43) **Deactivate** A Env/Geo 211, *Optical Mineralogy Lab*, as it has been partially incorporated into Geo 220 (see CAF_86).

44) **Modify** A Env/Geo 470, *Tectonics*, to be a "GEO" only designation, and add a new prerequisite of A Geo 220, 221 (see CAF_74).
45) **Modify** description of A Env/Geo 497, *Independent Study*, (see CAF_87).
46) **Modify** prerequisites for A Env 490, *Major Topics in Environmental Science* (see CAF_88).
47) **Modify** description, title and prerequisites for A Env/Geo 455, *Special Topics in Environmental or Geological Science* (see CAF_89).
48) **Deactivate** A Geo 400, *Field Mapping*, (see CAF_90).
49) **Modify** title and description of A Env/Geo 395Z, *Writing in the Environmental and Geological Sciences*, to reflect both areas explicitly (see CAF_91).
50) **Deactivate** A Env/Geo 499, *Seminar in Geology*, (see CAF_92).
51) **Deactivate** A Env/Geo 210, *Earth Materials*, (see CAF_96).

## Course Action Form # --- Course Reference Listing

1 – A Atm 301
2 – A Env/Geo 210
3 – A Phy 140
4 – A Phy 105
5 – A Phy 150
6 – A Phy 202
7 – R Pos 396
8 – R Pub 465
9 – H Sph 201
10 – A Chm 121
11 – A Atm 210
12 – A Atm 210Z
13 – A Atm 209
14 – A Geo 221
15 – A Atm 211
16 – A Bio 120
17 – A Atm 304/Z
18 – A Atm 307/Z
19 – A Atm 306
20 – A Atm 414
21 – A Env/Geo 450
22 – A Gog 304
23 – A Atm 335
24 – A Env/Geo 435
25 – A Mat 308
26 – A Chm 220
27 – A Chm 221
28 – I Csi 201
29 – A Env 496
30 – A Mat 214
31 – A Mat 311
32 – A Phy 240
33 – A Bio 320
34 – A Bio 121
35 – A Bio 122
36 – A Bio 123/Z
37 – A Bio 230
38 – A Bio 308
39 – A Bio 321
40 – A Bio 327
41 – A Bio 402
42 – A Bio 432
43 – A Bio 442
44 – A Bio 443
45 – A Bio 455
46 – A Bio 456
47 – A Gog 407
48 – A Bio 216
49 – A Bio 218
50 – A Bio 222
51 – A Env/Geo 466
52 – A Mat 220
53 – A Gog 220
54 – A Gog 290
55 – A Gog 330
56 – A Gog 430/Z
57 – A Gog 344Y
58 – A Gog 354
59 – A Gog 390
60 – A Gog 414
61 – A Gog 431
62 – A Gog 479
63 – A Gog 484
64 – A Gog 485
65 – A Gog 495
66 – A Gog 496
67 – A Gog 293
68 – A Env/Geo 212
69 – A Env/Geo 230
70 – A Env/Geo 231
71 – A Geo 222
72 – A Geo 222Z
73 – A Env/Geo 350Y
74 – A Geo 470
75 – A Geo 330
76 – A Geo 331
77 – A Geo 332
78 – A Env/Geo 106
79 – A Env/Geo 420
80 – T Chm 130
81 – T Chm 131
82 – T Mat 118
83 – T Mat 119
84 – T Phy 141
85 – T Phy 151
86 – A Geo 211
87 – A Env/Geo 497
88 – A Env 490
89 – A Env/Geo 455
90 – A Geo 400
91 – A Env/Geo 395
92 – A Geo 499
93 – A Atm 107
94 – A Atm 305
95 – A Mat 113
96 – A Geo 210

# Revised Bulletin Copy

**NOTE!!** The following Bulletin Copy is revised to reflect the previously specified changes. Here, that which is to be removed appears with ~~strikethrough~~. Anything changed or added appears in **red**. Due to the late date necessary for this submission to be evaluated by governance, we have necessarily concentrated on the bulletin copy specific to the courses and requirements, neglecting the other more descriptive and less relevant text, such as faculty lists and other non-critical material. Presumably, this portion can be revised more carefully and submitted later this semester.

## ENVIRONMENTAL SCIENCE BS

The Department of Earth and Atmospheric Sciences offers three distinct undergraduate degrees within and between the two core programs of Environmental Science and Atmospheric Science: [1] a Bachelor of Science (B.S.) in Environmental Science; [2] a Bachelor of Science (B.S.) in Atmospheric Science; and, [3] a Bachelor of Arts (B.A.) in Earth and Atmospheric Sciences. All three degrees are recognized as particularly challenging and attract students of high caliber who are interested in studying the fundamental processes operating on-and-within the Earth and its atmosphere.

### Faculty

*Professors Emeritae/i*
Winthrop D. Means, Ph.D.
University of California, Berkeley

*Distinguished Teaching Professor*
John W. Delano, Ph.D.
State University of New York at Stony Brook

*Professors*
William S. F. Kidd, Ph.D.
Cambridge University

Braddock K. Linsley, Ph.D.
University of New Mexico

*Associate Professor Emeritae*
George W. Putman, Ph.D.
Pennsylvania State University

*Assistant Professors*
Mathias Vuille, Ph.D.
University of Bern, Switzerland

*Associated Faculty*
Stephen S. Howe, M.S.
Pennsylvania State University

*Adjuncts (estimated): 2*
*Teaching Assistants (estimated): 8*

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**Careers**
Graduates with a B.S. in Environmental Science will be well qualified for a broad range of positions within the highly inter-disciplinary field of environmental science. Consulting firms, industry, federal and state government agencies all require employees with this type of training. The demand for individuals with such a degree is anticipated to remain strong as our society attempts to cope with and address myriad environmental impacts that are occurring on local, regional, national and global scales. Additionally, graduates with this degree are well prepared to consider advanced degrees in the sciences, or other fields such as business administration (M.B.A.) or law (J.D.).

## Degree Requirements for the Major in Environmental Science

**General Program B.S.:** A minimum of 66 credits for the combined major and minor including: A Atm 210 or 210Z, A Atm/Env 327, A Bio 120, A Chm 120 or T Chm 130, 121 or T Chm 131, A Env/Geo 105, A Env/Geo/Gog 201, 250, A Env 490, A Geo 221, A Mat 111 or 112 or T Mat 118, A Mat 113 or 119, A Phy 140 or T Phy 141, A Phy 150 or T Phy 151 or A Phy 202. **No course may satisfy requirements simultaneously in both the core curriculum (above) and any concentration**.

At the time of major declaration, each student must select one of four concentrations: Biology, Climate, Geography, or Geology. Each concentration represents an emphasis within the overall program that would best match a student's interest and desired career path. For example, those most interested in land surface or hydrological processes would opt for the Geology concentration, while those seeking careers in land use planning and geographic information systems might opt for the Geography concentration. Correspondingly, students more interested in meteorology and climate would select the Climate track, while those keen on aspects of biological processes and ecology would select the Biology concentration.

**Biology Concentration:** 21 credits overall. Required courses (8 credits): A Bio 121, 122, 123Z, 230. Elective courses: at least 9 credits from A Bio 308, 320, 321, 327, 402, 432, 442, 443, 455, 456, A Gog 407, A Mat 308. At least 13 elective credits must be taken from the combination of the previous elective list and: A Bio 216, 218, 222, A Chm 220, 221, A Env/Geo 466, A Env 496, A Mat 214, 220, 311.

**Climate Concentration:** 21 credits overall. Required courses (9 credits): A Atm 306, A Env/Geo 450, A Gog 304. Elective courses: at least 3 credits from A Atm 301, 304 or 304Z, 307 or 307Z, 335, 414, A Env/Geo 435, A Mat 308. At least 12 elective credits must be taken from the combination of the previous elective list and: A Chm 220, 221, A Env 496, A Mat 214, A Mat 311, A Phy 150 or T Phy 151, A Phy 202, 240, I Csi 201; only one of A Phy 150 or T Phy 151 or A Phy 202 can apply to this concentration.

**Geography Concentration:** 21 credits overall. Required courses (10 credits): A Gog/Pln 220, A Gog 290, A Gog/Pln 330 or 430 or 430Z. Elective courses: at least 6 credits from A Gog 304, A Gog/Pln 330, A Gog 344Y, 354, 390, 407, 414, A Gog/Pln 430/Z, A Gog 431, 479, 484, 485 or 485Z, A Gog/Pln 495, 496, A Mat 308. At least 11 elective credits from the combination of the

previous elective list and: A Gog 293, A Env 496, A Mat 214, 220, 311, I Csi 201. Only one of A Gog 330 or 430/Z can apply to this concentration.

**Geology Concentration:** 21 credits overall. Required courses (11 credits): A Env/Geo 350, 435, A Geo 222 or 222Z, 470. Elective courses: at least 3 credits from A Env/Geo 450, 466, A Geo 330, 331, 332. At least 10 elective credits must be taken from the combination of the previous elective list and: A Chm 220, 221, A Env 496, A Mat 214, 220, 308, 311, A Phy 150, T Phy 151, A Phy 202, 240, I Csi 201; only one of A Phy 150 or T Phy 151 or A Phy 202 can apply to this concentration.

**Class Key to Environmental Science Major**

**Environmental Science B.S. Core Curriculum**
**(45 credits required):**
A Atm 210 or 210Z Atmospheric Structure, Thermodynamics, and Circulation (3);
A Atm/Env 327 Meteorological and Environmental Measurement (3);
A Bio 120 General Biology I (3);
A Chm 120 General Chemistry I (3) or T Chm 130 Advanced General Chemistry I (3);
A Chm 121 General Chemistry II (3) or T Chm 131 Advanced General Chemistry II (3);
A Env 105 Introduction to Environmental Science (3);
A Env/Geo/Gog 201 Environmental Analysis (3);
A Env/Geo 250 Sustainable Development: Energy and Resources (3);
A Env 490 Major Topics in Environmental Science (3);
A Geo 221 Minerals, Rocks, and Geological Time (4);
A Mat 111 Algebra and Calculus II (4) or A Mat 112 Calculus I (4) or T Mat 118 Honors Calculus I (4);
A Mat 113 Calculus II (4) or T Mat 119 Honors Calculus II (4);
A Phy 140 Physics I: Mechanics (3) or T Phy 141 Honors Physics I: Mechanics (3);
A Phy 150 Physics II: Electromagnetism (3) or T Phy 151 Honors Physics II (3) or A Phy 202 Environmental Physics (3).
**No course may satisfy requirements simultaneously in both the core curriculum (above) and any concentration.**

**Biology Concentration (21 credits)**
**Required (8 credits):**
A Bio 121 General Biology II (3);
A Bio 122 General Biology I Lab (1);
A Bio 123Z General Biology Lab II (1);
A Bio 230 People and Resources in Ecological perspective (3)
**Electives (at least 9 credits from):**
A Bio 308 Parasitic Diseases and Human Welfare (3);
A Bio 320 Ecology (3);
A Bio 321 The Insects (3);
A Bio 327 Experimental Ecology (3);
A Bio 402 Evolution (3);
A Bio 432 Animal Behavior (3);
A Bio 442 Restoration Ecology (3);
A Bio 443 Restoration Ecology Lab (1);
A Bio 455 Plant Ecology (3);
A Bio 456 Plant Ecology Lab (1);
A Gog 407 Biogeography (3);
A Mat 308 Topics in Statistical Inference (3)
**with 13 elective credits total from the above list and**:
A Bio 216 Perspectives in Life Sciences (3);
A Bio 218 Introduction to Plant Biology (3);

A Bio 222 Biological Consequences of Global Climate Change (2);
A Chm 220 Organic Chemistry I (3);
A Chm 221 Organic Chemistry II (3);
A Env/Geo 466 Marine and Estuary Systems (3);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 220 Linear Algebra (3);
A Mat 311 Ordinary Differential Equations (3)

**Climate Concentration (21 credits)**

**Required (9 credits):**

A Atm 306 Climate Variability and Change (3);
A Geo 450 Paleoclimatology (3);
A Gog 304 Climatology (3)

**Electives (at least 3 credits from):**

A Atm 301 Surface Hydrology and Hydrometeorology (3);
A Atm 304 or 304Z Air Quality (3);
A Atm 307 or 307Z Atmospheric Chemistry (3);
A Atm 335 Meteorological Remote Sensing (3);
A Atm 414 Air Pollution (3);
A Env/Geo 435 Geohydrology (3);
A Mat 308 Topics in Statistical Inference (3)

**with 12 elective credits total from the above list and:**

A Chm 220 Organic Chemistry I (3);
A Chm 221 Organic Chemistry II (3);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 311 Ordinary Differential Equations (3);
A Phy 150 Physics II: Electromagnetism or T Phy 151 Honors Physics II (3);
A Phy 202 Environmental Physics (3);
A Phy 240 Physics III: Structure of Matter (3);
I Csi 201 Introduction to Computer Science (4)
(Only one of A Phy 150 or T Phy 151 or A Phy 202 can apply to the concentration.)

**Geography Concentration (at least 22 credits)**

**Required (10 credits):**

A Gog/Pln 220 Introduction to Urban Planning (3);
A Gog 290 Cartography (4);
A Gog/Pln 330 Principles of Environmental Management (3) or A Gog/Pln 430/Z Environmental Planning (3);

**Electives (at least 6 credits from):**

A Gog 304 Climatology (3);
A Gog/Pln 330 Principles of Environmental Management (3);
A Gog 344Y World Population (3);
A Gog 354 Environment and Development (3);
A Gog 390 Intermediate Cartography (3);
A Gog 407 Biogeography (3);
A Gog 414 Computer Mapping (3);

A Gog/Pln 430 or 430Z Environmental Planning (3);
A Gog 431 Climatic Change (3);
A Gog 479 Fundamentals of Applied GPS (3);
A Gog 484 Introduction to Remote Sensing of the Environ. (4);
A Gog 485 or 485Z Advanced Remote Sensing (3);
A Gog 495 Introductory MapInfo (1);
A Gog 496 Geographic Information Systems (3);
A Mat 308 Topics in Statistical Inference (3);
**with 11 elective credits total from the above list and:**
A Gog 293 Interpretation of Aerial Photographs (3);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 220 Linear Algebra (3);
A Mat 311 Ordinary Differential Equations (3);
I Csi 201 Introduction to Computer Science (4)
(Only one of A Gog/Pln 330 or A Gog/Pln 430 or 430Z can apply to the concentration.)

**Geology Concentration (21 credits)**
**Required (11 credits):**
A Geo 222 or 222Z Introductory Field Geology (1);
A Geo 350Y Environmental Geochemistry (4);
A Geo 435 Geohydrology (3);
A Geo 470 Tectonics (3)
**Electives (at least 3 credits from):**
A Env/Geo 450 Paleoclimatology (3);
A Env/Geo 466 Marine and Estuary Systems (3)
A Geo 330 Structural Geology (3);
A Geo 331 Field Excursions for Structural Geology (1);
A Geo 332 Structural Geology Lab (1);
**with 11 elective credits total from the above list and:**
A Chm 220 Organic Chemistry (3);
A Chm 221 Organic Chemistry II (3);
I Csi 201 Introduction to Computer Science (4);
A Env 496 Environmental Internship (1-3);
A Mat 214 Calculus of Several Variables (4);
A Mat 220 Linear Algebra (3);
A Mat 308 Topics in Statistical Inference (3);
A Mat 311 Ordinary Differential Equations (3);
A Phy 150 Physics II: Electromagnetism (3) or T Phy 151 Honors Physics II (3);
A Phy 202 Environmental Physics (3);
A Phy 240 Physics III: Structure of Matter (3);
(Only one of A Phy 150 or T Phy 151 or A Phy 202 can apply to the concentration.)

**ENV Courses:**

**A Env 105 (= A Geo 105) Introduction to Environmental Science (3)**
Survey of contemporary environmental issues related to health and disease, nuclear waste disposal, water resources, energy use and conservation, land reclamation, global climate change, and industrial pollution. Scientific principles and data needed for gaining an understanding of environmental challenges on local, regional, and global scales will be emphasized. Three lectures per week. Fall semester only.

**T Env 175Z Physical/Chemical Analyses of Ancient Environments (4)**
Chemical/physical data derived from early Jurassic sedimentary rocks containing abundant dinosaur footprints (i.e., evidence for a rich ecosystem) will be used to develop multidisciplinary constraints on the nature of the environments that existed about 200 million years ago. Students also collect data bearing on the mechanical and behavioral aspects of theropod dinosaurs that thrived in those environments. Two field trips to geological localities in Massachusetts and Connecticut occur during the semester to collect data that provide the basis for two, original 12-page papers written in a scholarly format. Fall semester. Only one of A Env 175 and T Env 175 may be taken for credit. Open to Honors College students only.

**A Env 201 (= A Geo 201 & A Gog 201) Environmental Analysis (3)**
Uses laboratory work and local field excursions to give students "hands-on" experience in physical geography and environmental sciences. Focuses on human impacts on the environment and on problems of environmental contamination. Prerequisite or co-requisite: A Env/Geo 105 or A Gog 101.

~~**A Env 210 (= A Geo 210) Earth Materials (3)**~~
~~An introduction to the study of major rock- and soil-forming minerals at atomic to macroscopic scales. Major topics include the physical properties, structure, and crystal chemistry of minerals; mineral-forming processes and transformations; minerals as environmental and geological indicators; and reactions among biota, minerals, and natural waters. Three lectures per week. Prerequisite(s): A Env 105; A Chm 120 or 130 or permission of instructor. Fall semester only~~.

~~**A Env 211 (= A Geo 211) Optical Mineralogy Laboratory (1)**~~
~~Introduction to the petrographic microscope. Optical properties of minerals and their use for mineral identification. One lab each week. Co-requisite(s): A Geo 210 or permission of instructor. May not be offered in 2008-2009.~~

~~**A Env 212 (= A Geo 212) Earth Materials Laboratory (1)**~~
~~Mineral properties and identification in hand-sample and in thin section with the petrographic microscope. Two laboratory hours per week. Co-requisite(s): A Env 210 or permission of instructor. Fall semester only.~~

~~**A Env 230 (= A Geo 230) Stratigraphy and Sedimentology (3)**~~
~~Stratigraphic principles and correlation, identification and classification of sedimentary rocks. Three lectures and one lab each week. Students must also register concurrently for either A Env 231 or A Env 231Z, Field Excursions in Stratigraphy. Prerequisite(s): A Env 105, or permission of instructor. Fall semester only.~~

~~**A Env 231 (= A Geo 231) Field Excursions for Stratigraphy (1)**~~
~~One lab per week and five full-day weekend field trips to be taken concurrently with A Env 230 Stratigraphy. Co-requisite(s): A Env 230 or permission of instructor. Fall semester only.~~

~~**A Env 231Z (= A Geo 231Z) Field Excursions for Stratigraphy (2)**~~
~~One lab per week and five full-day weekend field trips to be taken by Geology and Earth Science BS majors concurrently with A Geo 230 Stratigraphy. Extended written and illustrated~~

~~reports must be submitted based on the observations made on each trip. A Geo 231Z is the writing intensive version of A Geo 231; only one may be taken for credit. Co-requisite(s): A Geo 230 or permission of instructor. Fall semester only.~~

**A Env 250 (= A Geo 250) Sustainable Development: Energy and Resources (3)**
Examination of energy production using non-renewable (coal, oil, natural gas, uranium) versus renewable resources (hydroelectric, solar, wind, geothermal) relative to present and future environmental and societal impacts. Fields trips to energy producing facilities (e.g., Blenheim-Gilboa Pumped Storage Power Plant; Fenner Wind Power Project). Prerequisite(s): A Env/Geo 105 or A Atm 100; A Chm 120 or T Chm 130 or A Phy 105 or A Phy 140 or T Phy 141; A Mat 111. Spring semester only.

**A Env 327 (= A Atm) Meteorological and Environmental Measurement (3)**
Basic exposition of principles involved in the measurement of primary meteorological and environmental parameters. Topics to be covered include measurement uncertainty and the propagation of errors. Instruments for measuring temperature, pressure, humidity, wind field, solar and terrestrial radiation, precipitation, atmospheric aerosols, soil moisture, water quality, and data logging will be examined**.** Two lectures and one laboratory or demonstration per week. Prerequisites: A Mat 113 or T Mat 119; A Phy 105 or 140 or T Phy 141. Fall semester only.

**A Env 350Y (= A Geo 350Y) Environmental Geochemistry (4)**
Contemporary topics are used to develop concepts of geochemical processes operating in Earth's environmental system. These topics (a) PCBs in the Upper Hudson River, (b) biogeochemical cycles in the global climate system, and (c) geochemical constraints on long-term disposal of high-level, nuclear wastes. 3 hours per week in classroom setting +1 hour per week of oral presentations by students. Prerequisite(s): A Env 250. Satisfies the University's oral discourse requirement. Spring semester only.

**A Env 395Z (= A Geo 395Z) Writing in Environmental or Geological Science (1)**
May be taken with any A Env course at the 300 or 400 level to fulfill a writing intensive version of that course. Students will have an opportunity for assistance during writing and revision of written material with the help of editorial assignments from the instructor. Co-requisite(s): any A Env or A Geo course at the 300 or 400 level. Fall and Spring semesters.

~~**A Env 420 (= A Geo 420) Instrumental Analysis in Environmental Science (3)**~~
~~Hands-on application of instrumental analysis to problems in Geology and Environmental Science. Major topics include emission and absorption spectroscopy, liquid chromatography, mass spectrometry, sampling methodology, error estimation, and quality control. Two classroom hours and two laboratory hours per week. Prerequisite(s): A Env 210 and A Env 350.~~

**A Env 435 (= A Geo 435) Geohydrology (3)**
Introduction to surface water hydrology and ground water hydrogeology. Topics to be covered include, stream hydrograph analysis, flood plain determination, drainage basin analysis, aquifer characterization, pump test analysis, groundwater chemistry and tracers, contaminant hydrogeology, regulatory policy, and introduction to groundwater modeling. Prerequisite(s): A Mat 112 or T Mat 118, A Chm 120 or T Chm 130, A Geo 220, or permission of instructor. Spring semester only.

**A Env 450 (= A Geo 450) ~~Climate Change~~ Paleoclimatology (3)**
Introduction to the field of Paleoclimatology. Focus will be on the use of sediments and other biological and geological archives to reconstruct environmental, climatic, and oceanographic change over a range of time scales. Lecture will also provide an introduction to the fields of

climatology, age dating techniques, climatic/ environmental proxies (tracers), micropaleontology, and time-series analysis. In addition to lectures, the class will involve review of current scientific studies, class presentations by each student, and a review paper on a relevant topic of choice. 3 lectures each week and 2 hours each week of oral presentations by students; Prerequisite(s): A Chm 120 or T Chm 130, A Mat 108, or permission of the instructor. Fall semester only.

**A Env 455 (= A Geo 455) Special Topics in Environmental or Geological Science (2-3)**
A structured program of reading and seminars leading to an in-depth understanding of a chosen topic in environmental or geological science. Students may repeat course once for an additional two or three credits. Prerequisite(s): A Atm 210 or 210Z, A Geo 220, and permission of instructor. Fall or spring semester.

**A Env 466 (= A Geo 466) Marine/Estuary Systems (3)**
Interdisciplinary study of marine and estuary systems with a focus on marine/estuary sedimentology and biogeochemistry. Additional study of lacustrine systems will be integrated into the class. In addition to lectures, the class will involve review of current scientific studies, a class presentation by each student, and a review paper on a relevant topic of choice. 3 lectures each week. Prerequisites: A Env 105, A Chm 120 or T Chm 130, A Env/Geo/Gog 201, A Atm 210 or 210Z, A Geo 220, or permission of the instructor.

~~**A Env 470 (= A Geo 470) Tectonics (4)**~~
~~Seismologic basis for plate tectonics, kinematics of plate motions, paleomagnetism. Study of modern mid-ocean ridges, magmatic arcs, transforms, and collisional belts. Three lectures and one lab per week. Prerequisite(s): A Geo 220 or permission of instructor. Fall semester only.~~

**A Env 490 Major Topics in Environmental Science (3)**
A required course for environmental science majors in their senior year that brings together students from all four concentrations (biology, geology, atmospheric science, and geography) to address major topics in environmental science. Formal presentations by faculty, students, and invited speakers will promote discussion and debate from multi-disciplinary perspectives. Prerequisite(s): A Env 105, Env/Geo/Gog 201, Env/Geo 250, A Atm 210 or 210Z, A Bio 120, A Geo 220, or permission of the instructor.

**A Env 496 Environmental Internships (1-3)**
Provides students with practical work experience in environmental science through placements with federal, state, or local government agencies, or private firms. The supervisor's reference and final report are required. Internships are open to qualified juniors and seniors having overall grade point average of >2.75, and GPA>3.25 in Environmental Science major. A maximum of 3 credits may be applied toward the major. S/U graded, may be repeated once for credit. Prerequisite(s): permission of department internship coordinator.

**A Env 497 (= A Geo 497) Independent Study (1-3)**
Field or laboratory investigation of a chosen environmental or geological problem, including the writing of a research report to be undertaken during the senior year. Prerequisite(s): permission of instructor. Students may repeat this course once for additional credits. Fall or spring semesters.

**A Env 498 (= A Geo 498) Undergraduate Honors Research (3)**
Supervised research for undergraduates admitted to the Department Honors Program. To be taken summer and/or fall semester at beginning of senior year. Written proposal for research must be approved no later than end of spring semester of junior year. Prerequisite(s): Permission of instructor and chair. Fall or Spring semesters.

~~**A Env 499 (= A Geo 499) Seminar in Geology (1)**~~
~~Oral presentation by students of a research topic: attendance at weekly seminar given by other students in this course, and A Geo 500, and regular attendance at geological science seminars given by outside speakers [approximately once weekly in semester]. Students admitted to the Departmental Honors Program must take this course in the last three semesters of their degree program. Fall or spring semesters. May be repeated for up to 3 credits.~~

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**GEO courses:**

**A Geo 105 (= A Env 105) Introduction to Environmental Science (3)**
Survey of contemporary environmental issues related to health and disease, nuclear waste disposal, water resources, energy use and conservation, land reclamation, global climate change, and industrial pollution. Scientific principles and data needed for gaining an understanding of environmental challenges on local, regional, and global scales will be emphasized. Three lectures per week. Fall semester only.

~~**A Geo 106 Physical Geology Laboratory (1)**~~
~~Elementary classification of minerals and rocks, and their identification in hand specimen. Introduction to geological maps and sections, both as sources of geological information and as aids in the solution of practical problems. Guided and self-guided field trips to building stones of downtown Albany. This course is required for majors in Geology and Earth Science. One lab each week. Co-requisite(s): A Env 105. Fall or spring semesters.~~

**A Geo 201 (= A Env 201 & A Gog 201) Environmental Analysis (3)**
Uses laboratory work and local field excursions to give students “hands-on” experience in physical geography and environmental sciences. Focuses on human impacts on the environment and on problems of environmental contamination. Prerequisite or co-requisite: A Gog 101.

**A Geo 221 Minerals, Rocks and Geological Time (4)**
Physical properties, composition and structure of common rock-forming minerals; processes controlling the origin, composition, and emplacement of common igneous rocks, weathering and downslope transport, depositional facies and origin of common sedimentary rocks, formation and exhumation of metamorphic rocks; physical and bio-stratigraphy, quantitative methods for geological age determination. Students taking the Geology concentration of the Environmental Science BS must also enroll in A Geo 222 or 222Z. Three lectures and one lab each week. Fall semester only. Prerequisite(s): A Chm 120 or T Chm 130; A Env/Geo 105; or permission of instructor.

**A Geo 222 Introductory Field Geology (1)**
One lab per week and five full-day weekend field excursions. Students enrolled in this course should concurrently enroll in A Geo 220. Extended written and illustrated reports must be submitted based on the observations made on each excursion. Fall semester only. Only one of A Geo 222 or 222Z can be taken for credit. Co-requisite: A Geo 221, or permission of instructor.

**A Geo 222Z Introductory Field Geology (1)**
Writing intensive version of A Geo 221. Only one of A Geo 222 or 222Z may be taken for credit. Fall semester only. Co-requisite: A Geo 221, or permission of instructor.

**~~A Geo 210 (= A Env 210) Earth Materials (3)~~**
~~Crystal structures and crystal chemistry, with emphasis on the major rock- and soil-forming mineral groups. Selected minerals of commercial importance. Examples of mineral-forming processes, and use of mineral properties as indicators of geological conditions. Three lectures each week. Prerequisite(s): A Env 105, A Geo 106; or permission of instructor. Fall semester only.~~

**~~A Geo 211 (= A Env 211) Optical Mineralogy Laboratory (1)~~**
~~Introduction to the petrographic microscope. Optical properties of minerals and their use for mineral identification. One lab each week. Co-requisite(s): A Geo 210 or permission of instructor. May not be offered in 2008-2009.~~

**~~A Geo 212 (= A Env 212) Earth Materials Laboratory (1)~~**
~~An introduction to the study of minerals. Major topics include the formation, physical properties, structure, symmetry, and classification of minerals with emphasis on rock-forming minerals. In laboratory, students will gain hands-on experience with mineral identification of hand samples and mineral properties. The course also introduces more advanced topics in mineral transformations, crystal chemistry, and crystallography.~~

**~~A Geo 230 (= A Env 230) Stratigraphy, Sedimentology, and the Fossil Record (3)~~**
~~Stratigraphic principles and correlation, identification and classification of sedimentary rocks, introduction to paleontology and historical geology. Three lectures and one lab each week. Geology BS and Earth Science BS majors must also register concurrently for either A Geo 231 or A Geo 231Z, Field Excursions in Stratigraphy. Prerequisite(s): A Env 105, A Geo 106; or permission of instructor. Fall semester only.~~

**~~A Geo 231 (= A Env 231) Field Excursions for Stratigraphy (2)~~**
~~One lab per week and five full-day weekend field trips to be taken by Geology BS and Earth Science BS majors concurrently with A Geo 230 Stratigraphy. Co-requisite(s): A Geo 230 or permission of instructor. Fall semester only.~~

**~~A Geo 231Z (= A Env 231Z) Field Excursions for Stratigraphy (2)~~**
~~One lab per week and five full-day weekend field trips to be taken by Geology and Earth Science BS majors concurrently with A Geo 230 Stratigraphy. Extended written and illustrated reports must be submitted based on the observations made on each trip. A Geo 231Z is the writing intensive version of A Geo 231; only one may be taken for credit. Co-requisite(s): A Geo 230 or permission of instructor. Fall semester only.~~

**A Geo 250 (= A Env 250) Sustainable Development: Energy and Resources (3)**
Examination of energy production using non-renewable (coal, oil, natural gas, uranium) versus renewable resources (hydroelectric, solar, wind, geothermal) relative to present and future environmental and societal impacts. Fields trips to energy producing facilities (e.g., Blenheim-Gilboa Pumped Storage Power Plant; Fenner Wind Power Project). Prerequisite(s): A Env 105 or A Atm 100; A Chm 120 or T Chm 130 or A Phy 105 or A Phy 140 or T Phy 141; A Mat 111. Spring semester only.

**A Geo 330 Structural Geology I (3)**
Descriptive structural geology, with emphasis on features seen at outcrop and map scales. Selected examples of rock microstructures and their interpretation. Three lectures each week. Prerequisite(s): A Geo 221. Spring semester only. May not be offered in 2009-2010.

**A Geo 331 Field Excursions for Structural Geology I (1)**
Five full-day weekend field trips to be taken by Geology and Earth Science BS majors concurrently with Structural Geology I. Several written and illustrated reports must be submitted based on the observations made. Prerequisite(s): permission of instructor; co-

requisite: A Geo 330. Offered spring semester only. May not be offered in 2009-2010**.**

**A Geo 332 Structural Geology Laboratory (1)**
Structures on maps, on images, and in rock specimens; computer-based presentation of data. One lab each week. Co-requisite(s): A Geo 330. Spring semester only. May not be offered in 2009-2010.

**A Geo 350Y (= A Env 350Y) ~~(formerly A Geo 415)~~ Environmental Geochemistry (4)**
Contemporary topics are used to develop concepts of geochemical processes operating in Earth's environmental system. These topics (a) PCBs in the Upper Hudson River, (b) biogeochemical cycles in the global climate system, and (c) geochemical constraints on long-term disposal of high-level, nuclear wastes. 3 hours per week in classroom setting + 2 hours per week of oral presentations by students.

**A Geo 395Z (= A Env 395Z) Writing in Environmental or Geological Sciences (1)**
May be taken with any Env or Geo course at the 300 or 400 level to fulfill a writing intensive version of that course. Students will have an opportunity for assistance during writing and revision of written material with the help of editorial assignments from the instructor. Co-requisite(s): any A Env or A Geo course at the 300 or 400 level. Fall and spring semesters.

~~**A Geo 400 Field Mapping (4)**~~
~~Supervised geological mapping. Three weeks of field work (off campus) followed by independent study and laboratory sessions for preparation of report (in Albany). Field work starts in early August; laboratory sessions once a week in first quarter of Fall semester. Prerequisite(s): A Geo 220, 330; or permission of instructor.~~

~~**A Geo 420 (= A Env 420) Instrumental Analysis in Environmental Science (3)**~~
~~Hands-on application of instrumental analysis to problems in Geology and Environmental Science. Major topics include emission and absorption spectroscopy, liquid chromatography, mass spectrometry, sampling methodology, error estimation, and quality control. Two classroom hours and two laboratory hours per week. Prerequisite(s): A Env 210 and A Env 350.~~

**A Geo 435 (= A Env 435) Geohydrology (3)**
Introduction to surface water hydrology and ground water hydrogeology. Topics to be covered include, stream hydrograph analysis, flood plain determination, drainage basin analysis, aquifer characterization, pump test analysis, groundwater chemistry and tracers, contaminant hydrogeology, regulatory policy, and introduction to groundwater modeling. Prerequisite(s): A Mat 112 or T Mat 118, A Chm 120 or T Chm 130, or permission of instructor. Spring semester only.

**A Geo 450 (= A Env 450) ~~Climate Change~~ Paleoclimatology (3)**
Introduction to the field of Paleoclimatology. Focus will be on the use of sediments and other biological and geological archives to reconstruct environmental, climatic, and oceanographic change over a range of time scales. Lecture will also provide an introduction to the fields of climatology, age dating techniques, climatic/ environmental proxies (tracers), micropaleontology, and time-series analysis. In addition to lectures, the class will involve review of current scientific studies, class presentations by each student, and a review paper on a relevant topic of choice. 3 lectures each week and 2 hours each week of oral presentations by students; Prerequisites: A Chm 120 or T Chm 130, A Mat 108, or permission of the instructor. Fall semester only.

**A Geo 455 (= A Env 455) Special Topics in Environmental or Geological Science (2-3)**
A structured program of reading and seminars leading to an in-depth understanding of a chosen topic in environmental science or geology. Students may repeat course once for an additional two or three credits. Prerequisite(s): A Atm 210 or 210Z, A Geo 221, and permission

of instructor. Fall or spring semester**.**

**A Geo 466 (= A Env 466) Marine/Estuary Systems (3)**
Interdisciplinary study of marine and estuary systems with a focus on marine/estuary sedimentology and biogeochemistry. Additional study of lacustrine systems will be integrated into the class. In addition to lectures, the class will involve review of current scientific studies, a class presentation by each student, and a review paper on a relevant topic of choice. 3 lectures each week. Prerequisites: A Env 105, A Chm 120 or T Chm 130, A Env/Geo/Gog 201, A Atm 210 or 210Z, A Geo 221, or permission of the instructor.

**A Geo 470 Tectonics (4)**
Seismologic basis for plate tectonics, kinematics of plate motions, paleomagnetism. Study of modern mid-ocean ridges, magmatic arcs, transforms, and collisional belts. Three lectures and one lab per week. Prerequisite(s): A Geo 221, or permission of instructor. Fall semester only.

**A Geo 497 (= A Env 497) Independent Study (1-3)**
Field or laboratory investigation of a chosen environmental or geologic problem, including the writing of a research report to be undertaken during the senior year. Prerequisite(s): permission of instructor. Students may repeat this course once for additional credits. Fall or spring semesters.

**A Geo 498 (= A Env 498) Undergraduate Honors Research (3)**
Supervised research for undergraduates admitted to the Department Honors Program. To be taken summer and/or fall semester at beginning of senior year. Written proposal for research must be approved no later than end of spring semester of junior year. Prerequisite(s): Permission of instructor and chair. Fall or spring semesters.

~~**A Geo 499 (= A Env 499) Seminar in Geology (1)**~~
~~Oral presentation by students of a research topic: attendance at weekly seminar given by other students in this course, and A Geo 500, and regular attendance at geological science seminars given by outside speakers [approximately once weekly in semester]. Students admitted to the Departmental Honors Program must take this course in the last three semesters of their degree program. Fall or Spring semesters. May be repeated for up to 3 credits.~~

# ATMOSPHERIC SCIENCE BS

## Faculty

*Professors Emeritae/i*
Duncan C. Blanchard, Ph.D. *
Massachusetts Institute of Technology
Ulrich Czapski, Ph.D.
Hamburg University
Arthur Z. Loesch, Ph.D.
University of Chicago
John E. Molinari, Ph.D.
Florida State University
Volker A. Mohnen, Ph.D.

University of Munich
Jon T. Scott, Ph.D.
University of Wisconsin

*Distinguished Professor*
Lance F. Bosart, Ph.D.
Massachusetts Institute of Technology

*Professors*
Kenneth L. Demerjian, Ph.D. (Ray Falconer Endowed Chair)
Ohio State University
Daniel Keyser, Ph.D.
Pennsylvania State University
Christopher Thorncroft, Ph.D.
(Department Chair)
University of Reading

*Associate Professors*
Vincent P. Idone, Ph.D.
University at Albany
Robert G. Keesee, Ph.D.
University of Colorado
~~Karen Mohr, Ph.D.~~
~~University of Texas, Austin~~

*Assistant Professors*
Paul E. Roundy, Ph.D.
Pennsylvania State University
Ryan Torn, Ph.D.
University of Washington, Seattle
Mathias Vuille, Ph.D.
University of Bern, Switzerland

*Associated Faculty*
David R. Fitzjarrald, Ph.D. *
University of Virginia
Lee C. Harrison, Ph.D. *
University of Washington, Seattle
David Knight, Ph.D.
University of Washington, Seattle
G. Garland Lala, Ph.D. *
University at Albany
Michael Landin, M.S.
University at Albany
Ross A. Lazear, M.S.
University of Wisconsin, Madison
Qilong Min, Ph.D. *
University of Alaska, Fairbanks
Scott D. Miller *
University of California, Irvine
Richard R. Perez, Ph.D. *
University at Albany
James J. Schwab, Ph.D. *
Harvard University
Christopher J. Walcek, Ph.D. *

University of California, Los Angeles
Wei-Chyung Wang, D.E.S. *
Columbia University
Kevin Tyle, M.S.
University at Albany
Fangqun Yu, Ph.D. *
University of California, Los Angeles
Qi Zhang, Ph.D. *
University of California, Davis

*Visiting Professors*
Michael J. Reeder, Ph.D.
(resident at Monash University)
Morris Weisman, Ph.D.
(resident at the National Center for Atmospheric Research, NCAR)
W. James Steenburgh, Ph.D.
(resident at University of Utah)

**Primary appointment with the Atmospheric Sciences Research Center as Research Professors.*

*Adjuncts (estimated): 1*
*Teaching Assistants (estimated): 10*

The Department of Earth and Atmospheric Sciences and the Atmospheric Sciences Research Center (ASRC) provide the University with the state's largest program in atmospheric science and meteorology.

The undergraduate program provides a broad background in three fundamental areas of atmospheric science: synoptic (observations and weather forecasting), dynamic (theory and computer modeling), and physical (lightning, acid rain, cloud physics, atmospheric chemistry). Because the department has a highly active research program in these areas, many opportunities exist for undergraduate research projects and part-time jobs.

The first two years of the program provide basic training in mathematics, physics, chemistry, and introductory atmospheric science. All students are encouraged to take one or two 100-level courses for enjoyment and experience (these count as electives but not as courses for the major). In the junior and senior years, requirements in the fundamental areas of atmospheric science are combined with electives, including advanced courses on atmospheric physics, atmospheric dynamics, weather forecasting, tropical meteorology and hurricanes, solar energy, air pollution, climatology, and computer applications. Highly qualified students are eligible to enter an accelerated degree program in their junior year that leads to a combined B.S./M.S. degree.

Many opportunities exist for students to become involved in department activities. Each semester, numerous students take part in an internship program with the on-campus office of the National Weather Service (NWS), gaining experience with weather forecasting and familiarity with the responsibilities of a NWS meteorologist.

In addition, a weather forecasting competition is held in the department each semester while classes are in session. The forecasting, along with concurrent weather discussions led by a faculty member, are open to all undergraduate majors. Undergraduates hired part-time and during the summer through research grants have the chance to work closely with a faculty member while contributing to current meteorological research. The Eastern New York Chapter of the American Meteorological Society (AMS) meets regularly and provides speakers of

general interest on a variety of meteorological topics. Through these and other activities, the department offers exciting and varied opportunities to any student curious about the science of the atmosphere around us.

## Atmospheric Science B.S.

**Careers**
Graduates obtain employment in weather forecasting, environmental engineering, radio and TV broadcasting, scientific consulting, and other private firms; in university departments and research laboratories; and in federal and state agencies such as the National Weather Service, U.S. Air Force, and NY State Department of Environmental Conservation. Graduate school and the pursuit of an advanced degree is an expected option for our graduates. (The department offers full financial support and a complete tuition waiver to most students accepted into our graduate program.)

## Degree Requirements for the Major in Atmospheric Science

**General Program B.S.:** A combined major and minor sequence including A Atm 209, 210 or 210Z, 211, 315, 320, 321, 350, 410, 411; at least 12 additional credits from A Atm 305 and higher level courses as advised; A Chm 120 or T Chm 130, ; A Mat 111 or 112 or T Mat 118, 113 or T Mat 119, A Mat 214, 311; A Phy 140 or T Phy 141, A Phy 145, 150 or T Phy 151, A Phy 240 or T Phy 241. No more than 6 credits from A Atm 490, 497, 498 or 499 may be applied toward the major requirements; further, a maximum of 3 credits from A Atm 490 will apply.

A solid foundation in physics and mathematics is recommended for all students planning to major in atmospheric science. It is recommended that all students considering this major meet with a representative of the department before each of the freshman and sophomore registration sessions.

## Departmental Honors Program

Students who have by the end of their fourth semester attained a cumulative grade point average of at least 3.25 and a grade point average of at least 3.5 in courses required of the major in atmospheric science may apply to the department chair for the program leading to a B.S. degree with honors in atmospheric science. Applications must be submitted before the end of the first semester of the student's junior year and must be accompanied by letters of recommendation from at least two faculty members.

To be admitted to the program, a student must have completed three semesters of physics (A Phy 140 or T Phy 141, 145, 150 or T Phy 151, 240 or T Phy 241), three semesters of mathematics (A Mat 111 or 112 or T Mat 118, A Mat 113 or T Mat 119, A Mat 214), and must be enrolled in or have completed A Atm 315. These requirements may be altered, upon request, for qualified transfer students. At the end of the junior year, the student's program will be reviewed by the Honors Committee to see if satisfactory progress is being made.

To be eligible for a degree with honors, students must complete a minimum of 74 credits specified as follows: (1) the physics, mathematics, and chemistry requirements of the major; (2) the core sequence in atmospheric science (A Atm 209, 210 or 210Z, 211, 315, 320, 321, 350, 410 and 411) plus any three A Atm courses at the 400 or 500 level; (3) a coherent core of three upper-division courses in any discipline besides atmospheric science; and (4) 6 credits of A Atm 499 taken over at least two semesters culminating in a significant undergraduate thesis and an honors seminar in the student's final semester. Students in the program must maintain

both a minimum grade point average of 3.25 overall and 3.5 in atmospheric science courses taken to satisfy major requirements during the junior and senior years.

Upon completion of the requirements, the honors committee will make its recommendation to the faculty to grant the degree with honors in atmospheric science based upon the candidate's (1) academic record, (2) research project report, (3) honors seminar, and (4) faculty recommendations.

## Combined B.S./M.S. Program

The combined B.S./M.S. program in atmospheric science provides an opportunity for students of recognized academic ability and educational maturity to fulfill simultaneously undergraduate and graduate course requirements in their senior year, thereby accelerating progress toward the M.S. degree. A carefully designed program can permit a student to complete the B.S. and M.S. degrees one year sooner than is otherwise possible.

The combined program requires a minimum of 138 credits, of which at least 30 must be graduate credits. In qualifying for the B.S., students must meet all University and college requirements, including the requirements of the undergraduate major described previously, the minimum 60-credit liberal arts and sciences requirement, the general education requirements, and residency requirements. In qualifying for the M.S., students must meet all University and college requirements as outlined in the Graduate Bulletin, including completion of a minimum of 30 graduate credits and any other conditions such as a research seminar, thesis, comprehensive examination, professional experience, and residency requirements. Up to 9 graduate credits may be applied simultaneously to both the B.S. and M.S. programs.

In the summer following the senior year, the student will begin work on his or her graduate research. In preparation for this accelerated research program, the student will be required to take two semesters (6 credits) of A Atm 499, Undergraduate Research, during the junior or senior year. These 6 credits may be counted toward the undergraduate elective requirement from either of the following requirements: (1) from any four additional A Atm courses at the 400 or 500 level as advised or (2) from 6 additional credits in mathematics or sciences as advised.

Students may apply for admission to the combined degree program in atmospheric science at the beginning of their junior year or after the successful completion of 56 credits. A cumulative grade point average of 3.2 or higher and three supportive letters of recommendation from faculty are required for consideration.

**A Atm 100 The Atmosphere (3)**
Non-technical survey of the atmosphere; the physical environment of society and its historical development; intentional and unintentional modifications of the environment; cloud types and structure; severe storms; weather forecasting; air pollution; major wind and weather systems. Does not yield credit toward the major in atmospheric science. Three lectures per week. Spring semester only.

**A Atm 101 The Upper Atmosphere (3)**
Elementary survey of the properties and geophysical phenomena of the upper atmosphere; ionosphere, magnetosphere, and interplanetary space, ionospheric and magnetic storms; aurora and airglow; observational techniques including rockets and satellites. Does not yield credit toward the B.S. in atmospheric science. Three lectures per week. Fall semester only.

**A Atm 102 Science and Major Environmental Issues (3)**
Study of the role of science in creating, defining, evaluating, and resolving major issues relating to energy production and its use and impact on the physical environments; case studies of such issues as change in climate, air pollution, the fluorocarbon/ozone link, etc. Three lectures per week. Does not yield credit toward the B.S. in atmospheric science. Spring semester only.

**A Atm 107 The Oceans (3)**
Introductory survey of the physical, chemical, geological, and biological processes in the marine environment; promise and problems of the oceans as a natural resource. Does not yield credit toward the B.S. in atmospheric science. Three lectures each week. Fall semester only.

**A Atm 199 Contemporary Issues in Atmospheric Science (1)**
Issues from the current literature in selected areas of atmospheric science. Particular areas of study to be announced each term. Intended for students interested in exploring in depth themes covered in large lecture courses. Prerequisite(s): permission of instructor. S/U graded. May not be offered in 2009-2010.

**A Atm 200 Natural Disasters (3)**
Disasters due to natural phenomena such as climate change, hurricanes, tornadoes, earthquakes, tsunami, volcanic eruptions, asteroid/comet impacts, and mass extinctions are examined from an environmental perspective; each type of event will be characterized in terms of its origin, evolution, warning potential, range of significant environmental impacts and possible mitigation strategies; historical case studies will be analyzed; additional student selected topics may include ice storms, blizzards, landslides, avalanches, floods, drought, fire, heat and cold waves. Prerequisite(s): A Atm 100 or 107 or A Env/Geo 105. Three lectures per week. Fall semester only.

**A Atm 209 Weather Workshop (1)**
Applications in weather analysis, including meteorological data decoding (METAR and RAOB), thermodynamic diagrams, cloud types, precipitation and visibility obscurations, and an introduction to meteorological instrumentation. Co-requisite(s): A Atm 210 or 210Z. Fall semester only.

**A Atm 210 Atmospheric Structure, Thermodynamics, and Circulation (3)**
Technical survey of the atmosphere with application of elementary physical and mathematical concepts to the horizontal and vertical structure of the atmosphere; planetary, regional and local circulations; weather systems; atmospheric radiation; precipitation physics and thermodynamics. Three lectures per week. Prerequisites: A Mat 111 or 112 or T Mat 118; A Phy 105 or 140 or T Phy 141. Fall semester only.

**A Atm 210Z Atmospheric Structure, Thermodynamics, and Circulation (3)**
A Atm 210Z is writing intensive version of A Atm 210; only one may be taken for credit. Three lectures per week. Fall semester only.

**A Atm 211 Weather Analysis and Forecasting (4)**
Physical principles and empirical methods of weather analysis and forecasting, with emphasis on synoptic, regional and local weather systems; introduction to use and interpretation of observed weather data, satellite imagery, temperature and precipitation processes, soundings and stability; use of computer forecast guidance models and products of the National Centers for Environmental Prediction. Prerequisite(s): A Atm 210 or Atm 210Z, or permission of instructor. S/U grading prohibited. Spring semester only.

**A Atm 297 Independent Study I (1-3)**
By advisement only and may be repeated once for credit. S/U graded. Fall or spring semesters.

**A Atm 300Z Solar Energy (3)**
Discussion of solar energy technology, including solar energy measurement and distribution; direct use of the sun's energy; solar architecture; energy from wind, tides, waves, currents, and salinity gradients; biomass and geothermal energy; energy use, conservation, and other major environmental issues. Prerequisite(s): 6 credits in mathematics including one course in calculus; A Phy 108, or 150, or T Phy 151; junior or senior class standing. May not be offered in 2009-2010.

**A Atm 301 Surface Hydrology and Hydrometeorology (3)**
A survey of the water cycle and its interactions with the earth and atmosphere, including the processes of precipitation, evaporation, and stream flow. Water resources and policy issues incorporated where applicable. Will not yield upper level credit for the atmospheric science B.S. degree. Not open to students with credit in A Atm 408. May not be offered in 2009-2010.

**A Atm 304 Air Quality (3)**
Designed for undergraduate students not pursuing the B.S. in Atmospheric Science. Topics include air pollution criteria standards and regulations, basic air pollution monitoring (including quality assurance), simple statistical analysis of data, and pollutant transport, transformation and deposition. Prerequisite(s): A Mat 111 or 112 or T Mat 118; A Phy 105 or 140 or T Phy 141. Offered alternate Spring semesters; will next be offered in Spring 2010.

**A Atm 304Z Air Quality (3)**
A Atm 304Z is writing intensive version of A Atm 304; only one may be taken for credit. ~~Offered alternate spring semesters; will next be offered in Spring 2010.~~

**A Atm 305 Global Physical Climatology (3)**
The physical basis of climate and climate variability from a coupled atmosphere-ocean perspective. Emphasis will be placed on understanding the causes of regional climate differences and regional climate variability and the role that the global atmosphere and oceans play in the process. Prerequisite(s): A Atm 211; co-requisite(s): A Atm 315. Offered alternate Fall semesters; will next be offered in Fall 2009.

**A Atm 306 Climate Variability and Change (3)**
This course will be organized in two parts. Part 1 will cover seasonal to multi-decadal natural variability of the global climate system; the El Nino Southern Oscillation (ENSO); monsoons, droughts and their causes; variability of high impact weather such as hurricanes; the fundamental physics of the coupled atmosphere-land-ocean system and our ability to predict it. Part 2 will cover anthropogenic climate change, including an objective assessment of observed trends in the past century and the anthropogenic contribution; theory of climate change linked to increased greenhouse gases; climate change predictions and the IPCC process. Prerequisite(s): A Mat 113 or T Mat 119; A Atm 210 or 210Z. Offered alternate Fall semesters; will next be offered in 2010.

**A Atm 307 (= A Chm 307) Introduction to Atmospheric Chemistry (3)**
Chemical principles and concepts leading to understanding the composition and change in the chemical/atmospheric environment; sources and links of chemical constituents; chemistry of the troposphere and stratosphere; measurement and theory of greenhouse gases; global pollution and ozone depletion. Prerequisite(s): A Mat 111 or 112 or 118; A Phy 105 or 140 or T Phy 141; A Chm 121 or T Chm 131. Offered alternate spring semesters; will next be offered in Spring 2011.

**A Atm 307Z (= A Chm 307) Introduction to Atmospheric Chemistry (3)**
A Atm 307Z is the writing intensive version of A Atm 307; only one may be taken for credit. ~~Prerequisite(s): A Mat 111 or 112 or T Mat 118; A Phy 105 or 140 or T Phy 141, A Chm 120 or T Chm 130. Offered alternate Spring semester. Will next be offered Spring 2009.~~

**A Atm 311 Severe and Hazardous Weather Analysis and Forecasting (4)**
Continuation of Atm 211, with emphasis on severe and hazardous weather analysis and forecasting, including thunderstorms, tornadoes, downbursts, derechoes, hail, flash floods, hurricanes, winter storms, blizzards, blocking weather patterns, floods and drought; introduction to weather analysis software and weather display systems; commercial meteorology. Prerequisite(s): A Atm 211. S/U grading prohibited. Fall semester only.

**A Atm 315 Quantitative Methods in Geophysics (3)**
Important topics in atmospheric and geophysical science are studied using various analytical and numerical techniques. Description and analysis of specific but disparate geophysical phenomena will expose the student the frequent application of certain mathematical and statistical approaches used to expound the underlying physical principles. Prerequisite(s): A Atm 210 or 210Z; A Mat 214, 311; (the latter recommended as a prerequisite; acceptable as co-requisite); Phy 150 or T Phy 151. Fall semester only.

**A Atm 320 Atmospheric Thermodynamics (3)**
Equation of state; principles of thermodynamics; water vapor and moist air thermodynamics; changes of phase and latent heat; hydrostatic equilibrium; atmospheric convection; thermodynamic diagrams; atmospheric stability and severe weather events. Prerequisite(s): A Atm 210 or 210Z, 315; A Mat 214; A Phy 150 or T Phy 151; Co-requisite: A Atm 321. Spring semester only.

**A Atm 321Y Physical Meteorology (4)**
Atmospheric physics, including radiation, optics, and visibility; atmospheric electricity; cloud and aerosol physics; acoustics; upper atmospheric processes; radar meteorology. Three lectures and one lab discussion per week. Prerequisite(s): A Atm 315; A Phy 240 or T Phy 241; Co-requisite: A Atm 320. Spring semester only.

**A Atm 327 (= A Env 327) Meteorological and Environmental Measurement (3)**
Basic exposition of principles involved in the measurement of primary meteorological and environmental parameters. Topics to be covered include measurement uncertainty and the propagation of errors. Instruments for measuring temperature, pressure, humidity, wind field, solar and terrestrial radiation, precipitation, atmospheric aerosols, soil moisture, water quality, and data logging will be examined. Two lectures and one laboratory or demonstration per week. Prerequisites: A Mat 113 or T Mat 119; A Phy 105 or 140 or T Phy 141. Fall semester only.

**A Atm 335 Meteorological Remote Sensing (3)**
Satellite remote sensing from UV to microwave including the principles of atmospheric radiative transfer, descriptions of important satellite orbits and sensors, the retrieval of atmospheric variables from active and passive systems, and basic principles of interpretation. Prerequisite(s): A Mat 111 or 112 or T Mat 118 and A Atm 211. May not be offered in 2009-2010.

**A Atm 350 Meteorological Datasets and Numerical Computation (1)**
An introduction to the UNIX and Linux operating systems; use of the General Meteorological Package (GEMPAK) to display meteorological information and perform diagnostic calculations;

basics and utility of shell scripting; types of meteorological observational datasets and model output grid files. One joint class/laboratory period each week. Prerequisite(s): A Atm 211, 315. Spring semester only.

**A Atm 400 Synoptic Meteorology I (3)**
Electronic meteorological database description and analysis procedures; use of meteorological software packages and remote sensing technologies in weather analysis and forecasting; operational numerical weather prediction model procedures; application of fundamental thermodynamic and dynamic principles to multiscale weather events; scientific issues in weather forecasting. Two joint lecture-laboratory periods each week. Prerequisites: A Atm 311, 350; co-requisite: A Atm 410. Fall semester only.

**A Atm 401 Synoptic Meteorology II (3)**
Application of more advanced thermodynamic and dynamic concepts, laws and remote sensing technologies to multiscale weather analysis and prediction; structure of global scale temperature, wind and precipitation regimes and their causes; use of operational weather prediction models and products for research and weather forecasting; severe weather and heavy precipitation analysis and forecasting. Two joint class/laboratory periods each week. Prerequisite: A Atm 400; co-requisite(s): A Atm 411. Spring semester only.

**A Atm 408 Hydrometeorology (3)**
The physical processes governing the continental hydrologic cycle such as water vapor transport, runoff, evapotranspiration, streamflow, sub-surface recharge; land/atmosphere interaction; spatial/ temporal variability of hydrologic parameters. Prerequisite(s): A Atm 320 and A Mat 311. Will next be offered in spring 2010.

**A Atm 409 Atmospheric Precipitation Processes (3)**
Fundamentals of atmospheric precipitation processes; atmospheric moisture budget; convective and stratiform precipitation; application of satellite and radar imagery to precipitation analysis and forecasting; mesoscale convective systems; mesoscale precipitation structure in cyclones; flash flood forecasting; quantitative precipitation forecasting exercise. Prerequisite(s): A Atm 320; A Mat 311. Co-requisite: A Atm 410. May not be offered in 2009-2010.

**A Atm 410 Dynamic Meteorology I (3)**
Forces and force balances in the atmosphere; thermal wind, vorticity and circulation; structure and dynamics of the middle latitudes and tropical cyclones. Prerequisite(s): A Atm 315, 320, 321. Fall semester only.

**A Atm 411 Dynamic Meteorology II (3)**
Derivation and scaling of the equations of atmospheric motion; major forces in the atmosphere; dynamics of frontal cyclones; mathematics of weather prediction. Prerequisite(s): A Atm 410. Spring semester only.

**A Atm 414 Air Pollution Meteorology (3)**
Analysis of physical, meteorological, and chemical processes influencing the lif-cycle of harmful gaseous and particulant air pollutants. Prerequisite(s): A Atm 210 or 210Z, or permission of instructor. Offered alternate Fall semesters; will next be offered in Fall 2009.

**A Atm 421 Tropical Meteorology (3)**
Tropical cyclone dynamics and thermodynamics; tropical cyclone formation; monsoons; tropical waves; El Niño. Prerequisite(s): A Atm 410 or equivalent. Spring semester only. May not be offered in 2009-2010.

**A Atm 424 Fundamentals of Atmospheric Electricity (3)**

An introduction to the basic electrical processes operating in the atmosphere; fair weather electricity and the global circuit; electrical properties of clouds and thunderstorms; thunderstorm electrification; the lightning flash; observation and measurement techniques. Prerequisite(s): A Atm 321; A Mat 214; A Phy 240 or T Phy 241. May not be offered in 2009-2010.

**A Atm 430 Solar Radiation and Applications (3)**
Definition of solar and terrestrial radiation components; basic celestial geometry; introduction to the measurement of solar radiation; principles of solar radiation transfer through the Earth's atmosphere; study of the interrelationship between solar radiation components; applied solar radiation examples. Prerequisite(s): A Mat 113 or T Mat 119; A Phy 150 or T Phy 151. May not be offered in 2009-2010.

**A Atm 450 Computer Applications in Atmospheric Science (3)**
Computer programming and numerical methods for solving atmospheric science problems; data handling and storage; examination of currently used programs in atmospheric science research; iterative methods; numerical weather prediction. Prerequisite(s): A Atm 315; I Csi 204 or 205 or permission of instructor. May not be offered in 2009-2010.

**A Atm 490 Internship in Atmospheric Science (1-3)**
Research or operational experience in atmospheric-related activities with local governmental agencies or private industry. No more than 3 credits for A Atm 490 may be applied toward major requirements in atmospheric science. Internships are open only to qualified juniors and seniors who have an overall grade point average of 2.50 or higher. Prerequisite(s): junior or senior standing in atmospheric science. S/U graded, may be repeated for credit.

**A Atm 497 Independent Study II (1-3)**
May be repeated once for credit. No more than 6 credits from A Atm 490, 497, 498, and 499 may be applied toward major requirements in atmospheric science. Prerequisite(s): junior senior class standing, and by advisement only. Fall or spring semesters.

**A Atm 498 Computer Applications in Meteorological Research (3)**
Directed individual study of a particular problem in atmospheric science that requires use of the University Computing Center and/or departmental computers. May be repeated once for credit. No more than 6 credits from A Atm 490, 497, 498, and 499 may be applied toward major requirements in atmospheric science. Prerequisite(s): I Csi 201 or permission of instructor. S/U graded.

**A Atm 499 Undergraduate Research (3)**
Guided research leading to a senior thesis. Oral presentation of results required. May be repeated for credit. No more than 6 credits from A Atm 490, 497, 498, and 499 may be applied toward major requirements in atmospheric science. Prerequisite(s): junior or senior class standing, and permission of department chair. S/U graded.

## Earth and Atmospheric Science (E&A BA)

**Careers**
The B.A. in Earth and Atmospheric Sciences is offered as an interdisciplinary study of significant breadth spanning two classical disciplines. Students electing this major have the potential to realize new opportunities for personal enrichment and career development. However, those students committed to seeking advanced degrees in a more traditional field,

such as Atmospheric Science, should pursue the corresponding B.S. degree instead. All students contemplating any of the curricula described here should thoroughly discuss their options with personnel of the Advisement Services Center (ASC) and a department undergraduate adviser before formal declaration of a specific major.

## Degree Requirements for the Major in Earth and Atmospheric Sciences

**General Program B.A.:** A minimum of 55 credits for the combined major and minor including: A Phy 105 or 140 or T Phy 141, A Phy 106 or 145, 108 or 150 or T Phy 151, A Phy 109 or 155; A Mat 101, 108, 111; A Chm 120 or T Chm 130; A Env/Geo 105 or A Gog 101, Env/Geo 250; ~~A Geo 106~~, A Geo 221; A Atm 100 or 102 or 107, 210 or 210Z, ~~211~~; one course from: A Gog 290, 304, 407, 431, 484, 431, 496; at least 15 credits from the following, including at least two courses each with the Atm or Geo designation: A Atm 211, A Atm 301, 304 or 304Z, ~~305~~, 306, 307 or 307Z, 311, 335, 414, Atm/Env 327, A Env/Geo 350, ~~420~~, 435, 450, 466, A Geo 330, 331, 470, A Mat 113 or T Mat 119.

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## Minor:

**Geology**: A minimum of 20 graduation credits. Required courses include A Env/Geo 105, 250, A Geo 221; and 10 credits at or above the 300 level and/or in courses with the “Geo” designation requiring at least one prerequisite course.

# New Course Syllabi and Associated Forms

## ATM 209 "Weather Workshop" (Call # ????)

Fall 2009
Instructor: Ross Lazear
ES 322, 437-3601
ralazear@atmos.albany.edu

**Office hours**:
2:30-3:30 PM, TUE., THUR. (and by appointment)

***Class webpage***: http://www.atmos.albany.edu/facstaff/ralazear/ATM209

***Topics covered***:
Weather plotting
METAR codes
Thermodynamic charts ("Skew-T")
Moisture variables
Cloud types
RAOB codes (Radiosonde observations)
ASOS (Automated observations)

***Prerequisites***:
You are required to be enrolled in, or have already taken ATM 210 or 210Z and its prerequisites in order to take this class.

***Objectives and Grading***:
This weather workshop is intended to complement your classwork in ATM 210, as well as provide training for ATM 211 next semester. Most of the work will be done in class. However, you will be expected to finish any workshop assignments not completed in class, and "self-check" your work on the web.

Because there is no homework to be turned in each week, *attendance is **mandatory***. 25% of your grade (25 points) will be based on attendance:

Unexcused absence #1: -5 points
Unexcused absence #2: -15 points
Unexcused absence #3: -25 points
#3, -40
#4, -50…

Absences are excused if you make sure to let me know of your legitimate, impending absence anytime well before class.

The remaining 75% of your grade (75 points) is based on three quizzes (25 points each) on the following dates:

**Quiz #1**: Wednesday, Sep. 17th
**Quiz #2**: Wednesday, Oct. 29th
**Quiz #3:** Wednesday, Dec. 3rd

Thus, your total grade in this class will be out of 100 possible points. Unexcused absences will undoubtedly hurt your grade, so be sure to come to class!

***Materials needed***:
If you are planning on taking ATM 211 next spring, then it is highly recommended that you visit Chem Stores and purchase your ATM 211 Lab Kit (~$35), or at least purchase the laminated "Skew-T" and water-based marking pens (~$12). If you do purchase the Skew-T and pens now, you will only have to purchase the remainder of the ATM 211 Lab Kit next spring. You will receive a number of handouts during this workshop, and the Lab Kit binder will be a great place to store it all. You will reference this material in ATM 211 and ATM 311…. and beyond!

*** Most importantly, have fun, and be ready to learn. Bring questions and comments to class, and stop by my office hours (or make an appointment to meet with me) if you have additional questions about class, upcoming quizzes, or meteorology and our department in general! The best way to reach me is by e-mail.

# A ATM 306 CLIMATE VARIABILITY AND CHANGE

## FALL 2010 Call #: XXXX

**Instructor**: Chris Thorncroft
**Room**: ES 226
**Phone**: 518 442 4555
**E-mail**: chris@atmos.albany.edu

**Office hours**: TBD

**Credits**: 3

**Prerequisites for Course:** A Mat 113 or 118 and A Atm 210 or 210Z

**Attendance Policy**: Students are expected to attend all lectures.

**Aims of Course:**

To provide students with understanding of how the climate system works including the fundamental physics of the coupled atmosphere-land-ocean system and our ability to predict it.

To provide students with a knowledge of the nature and causes of natural climate variability including, in particular, that associated with the El Nino Southern Oscillation (ENSO).

To provide students an objective assessment of observed trends in the past century and the anthropogenic contribution to these.

To discuss the physics of anthropogenic climate change including climate change predictions for the next 100 years and the "IPCC process".

**Grading Scheme:** Letter Format (A-E)

| | |
|---|---|
| Two in-class exams | 2 x 20% |
| Problem sets | 20% |
| Final exam | 40% |

**Text Books:**

There is no recommended textbook for this course.
I will refer to the latest IPCC report available at the following website:
http://www.ipcc.ch/ipccreports/index.htm

**Basic Course Outline**

1. Introduction to the Climate System
2. Natural Climate Variability
3. Climate Change
4. Future Perspectives

## Lecture Plan

### 1. Introduction to the Climate System

1.1 What is Climate and why is it important to study?
1.2 Overview of Midlatitude Climate
1.3 Overview of Tropical Climate

### 2. Natural Climate Variability

2.1 Observations of Climate Variability – from interannual to decadal timescales
2.2 Nature and Theory of ENSO (including its global impacts)
2.3 Variability of Monsoons
2.4 Variability of Midlatitude Climate
2.5 Variability of High impact weather (including hurricanes)

### 3. Climate Change

3.1 Theory of climate change
3.2 Observations
3.3 Climate Change Prediction
3.4 The IPCC Process

### 4. Future Perspectives

The course will finish with some discussion about the future including the role of politics and how science and society are interacting.

# GEO 221 Minerals, Rocks, and Geological Time (Call # ????)

# Fall 2009

**Course Format**: 3 lectures, 1 two hour lab each week

**Credits Awarded**: 4

**Room and Meeting Time**: TBD

**Instructor**: W. Kidd, ES 315; 442-4477; wkidd@atmos.albany.edu

**Prerequisites:** A Env/Geo 105, A Chm 120, or permission of instructor.

**Objectives**: An introduction to: the physical properties, composition and structure of common rock-forming minerals; the processes controlling the origin, composition, and emplacement of common rocks and sediments; quantitative methods (mainly isotopic) for age determination of minerals, rocks, and sediments; physical stratigraphic relationships and geological time.

## Minerals

*Topics:*
Introduction - Physical properties of minerals
Atomic and ionic radii;
Chemical bonding in minerals
Coordination number, Pauling's Rules
Common rock-forming minerals
Compositional variation in minerals
Graphical representation of mineral composition
Point Symmetry
Crystal axes and Miller indices
Plane lattices & unit cells
3-D lattices
X-ray diffraction
Minerals & human health

## Rocks

*Topics:*
Common plutonic rocks, intrusive relationships
Common volcanic rocks, volcanic processes
Partial melting; Differentiation; reaction series; simple phase diagram
Weathering, soil formation, downslope transport processes
Sediment transport, depositional facies, origin of common sedimentary rocks

Metamorphic Rocks, formation and exhumation

**Geological Time**

*Topics:*
Quantitative methods (mainly isotopic) for age determination of minerals, rocks, and sediments
Physical stratigraphic relationships
Basis for biostratigraphy and the Phanerozoic geological time scale

**Text**: "Understanding Earth", 5th ed. (2007); Grotzinger, Jordan, Press, & Siever; Freeman, list $114; with some supplementary readings

| | | |
|---|---|---|
| **Grading**: | Letter grade format (A-E) | |
| | Three 1 hour exams (25% each) | 75% |
| | Laboratory exercises (10) | 25% |

**Attendance Policy**: Attendance in lectures and in labs is required.

# A Geo 222/222Z Introductory Field Geology (Call # ????)

# Fall 2009

**Credits awarded**: 1

**Course format**: Class meetings: ES 309 F 1.40-3.40pm (labs - only on days before trips); and field excursions, Sat, Sun 8.30-5.30 (field excursions), September 12 and 13; October 3 and 4; October 10 and 11 [or October 17 and 18 if rained out on earlier dates]

**Instructor**: W. Kidd, ES 315; 442-4477; wkidd@atmos.albany.edu

**TAs**: TBD
(ES ); (ES ); office hours: -- ; ; --

**Co-requisite:** A Geo 221 or permission of instructor.

**Objectives**: This class provides the first encounter with actual geological exposures for Environmental Science and Earth Science majors. The emphasis is on the students developing their observational and logical skills on the outcrop in some of the subject areas covered in GEO 220, particularly common sedimentary rocks and minerals, stratigraphy, sedimentology, and the definition of geological time. Students are required to take full notes in the field, and to write extended illustrated reports on these observations, and thus the development of professional writing skills is also a primary goal of this course. Students enrolled in the Writing Intensive (Z) section of this course will be required to revise and resubmit an improved version of each report, responding to detailed comments on the first version. Grades for Z section students will include an assessment of the improvement in and responsiveness to comments for these revisions.

**Course topics**:
Stratigraphic section construction and correlation
Sedimentology of carbonate and clastic strata
Stratigraphic environmental interpretation, and geological time significance
Introductory geological field mapping techniques and geological maps
Writing and illustration of geological reports
Geological field observation and methods
Regional geology of E. New York-W. New England

**Reading/study materials**: No text required. The Geological Highway Map of New York State is recommended. Photocopied explanatory diagrams are provided at the start of each excursion.

**Grading**:
Letter format (A-E)
Three written, illustrated reports on observations from weekend day field trips: 90%
Field notebook made during the trips/mapping: 10%

**Attendance Policy**: Attendance on field trips and in labs is required.

# WRITING INTENSIVE Course Proposal

09-011A

## General Education Committee/Undergraduate Studies – LC 30

**COURSE NUMBER:** AGEO 222Z **COURSE TITLE: INTRODUCTORY FIELD GEOLOGY**

**PROPOSER:** W Kidd_____

Phone #: 2-4477_____ e-mail wkidd@atmos.albany.edu_____

**INSTRUCTOR(S):** W Kidd_____

Please provide the following information:

A. A copy of the course syllabus. ATTACHED; please note this is NOT a Gen Ed course proposal

B. Will this course *always* be taught as a Writing Intensive course? yes

C. Please answer each of the following. If any answer is ***no***, please explain on an attached sheet.

1. Will enrollment be limited to 35 students per section? yes
2. Will the course require, other than examinations, more than one writing assignment? yes
3. Will these special or added writing assignments require at least 20+ pages of writing? yes
4. Will the course offer at least one of the following writing experiences: journals, personal notebooks, exploratory writing, reports, formal argumentative essays, research papers, and professional documents? yes
5. Will the course require substantive revisions of these special writing assignments? yes
6. Will course grading include a component that allows students to improve their graded work with responsiveness revisions suggested by the instructor? yes
7. Will in-class discussion of writing assignments and detailed comments on some of the submitted writing assignments be an integral part of the course? yes
8. Will an evaluation of the writing component of the course be submitted by the class? yes

D. Describe any assistance you will be requesting from the Writing Center and/or CETL. (help in design of course, team teaching, student referrals, training TA's, instruction in use of the library, etc.)

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**ROUTING:** When the course proposal is completed, the department, school or program must have the proposal reviewed and approved by its respective college or school. It is then submitted to the General Education Committee. Any questions concerning the approval process should be directed to Anne Hildreth, General Education Committee Chair, LC31, 442-3994. FAX: 442-4159. E-mail: Hildreth@albany.edu

**APPROVAL ACTION:**

Department/Program Chair: Chris Thorncroft_____ Date: __1_30 2009____

College/School Dean or Designee: Gregory Stevens Date: 3-05-09

General Education Committee liaison: _____ Date: _____

# Inter-departmental Support Assertions

The following are copies of e-mail messages or attachments in response to our forwarding the above proposed revisions for consideration by the Chairs of Geography and Planning, Mathematics and Statistics, Biological Sciences, and Chemistry. Apparently, sending a minimal response is in vogue currently…

**Physics**:

Ok, physics signs off too.
Carolyn

On 23 Jan 2009 at 10:01, Vincent P Idone wrote:

>
> Dear Jim, Ted and Carolyn:
>
>  I really need a response from you all regarding the earlier e-mail
> that I sent (see below). If I don™t get these curriculum revisions in to
the
> Dean™s office within just the next few days, Greg Stevens tells me that it
will
> be impossible to implement them for this fall, and the delay incurred
> would be a full year. Could you please help me out here? Chemistry and Bio
have > already signed off on this.
>
> Thanks in advance,
> Vince

**Geography and Planning**:

**From:** James Mower
**Sent:** Friday, January 23, 2009 12:57 PM
**To:** Vincent P Idone
**Subject:** RE: Support Letter

Hi Vince,
I'm in support of the current revisions.
Jim

James Mower
Chair, Geography and Planning
AS 218, University at Albany
Albany, NY 12222

518-442-4779 (voice)
518-442-4742 (fax)
jmower@albany.edu
www.albany.edu/faculty/jmower

**From Professor Andrei Lapenas of Geography and Planning regarding creation of A Atm 306:**

Chris:
I enthusiastically support your proposal for new climatology course. The first part of your course is quite unique and, to my knowledge, does not overlap with any climatology courses on campus. The second part has some minor overlap with GOG304. This overlap, however, is a very positive thing since it helps student to better understand connections among climatology courses offered at different departments.
Best,
Andrei

-----Original Message-----
From: Chris Thorncroft [mailto:chris@atmos.albany.edu]
Sent: 28 января 2009 г. 10:17
To: andreil@albany.edu
Cc: Vince P. Idone
Subject: Climate Change

Andrei

As you know we are in the process of improving the ENV-BS curriculum. One key part of this on the ATM side is to develop the ATM track as a "climate track". I am proposing a new course on climate variability and climate change. Please can you take a look at the CAF form attached and let me know if you have any problems/comments. Ideally you could let me know that you approve of the new course letting me know that there is no significant overlap.

Let me know if you need more information on the course content.

Cheers

Chris

---
Chris Thorncroft
Professor
Department of Earth and Atmospheric Sciences University at Albany, SUNY
Albany, New York, 12222
Phone:  518 442-4555
Fax:    518 442-5825
e-mail: chris@atmos.albany.edu
---

**Mathematics and Statistics**:

**MEMORANDUM**

**To:** Professor Vincent Idone, Department of Earth and Atmospheric Sciences

**From:** Ted Turner, Chair, Department of Mathematics and Statistics

**Date:** January 23, 2009

**Re:** Curriculum revisions

I have read your revised requirements for the Environmental Science BS degree. As regards mathematics, they are completely reasonable and the Department of Mathematics and Statistics will have no difficulty in providing the seats to support it.

**Chemistry**:

Date: January 20, 2009

To: Vincent Idone, Department of Earth and Atmospheric Sciences

From: Paul J. Toscano, Chair, Department of Chemistry Paul J. Toscano

Re: Curricular revisions for B.S. Environmental Science

I am providing this letter in support of the Department of Earth and Atmospheric Sciences' proposal to adjust the curriculum for their B.S. Environmental Science degree program. We are happy to lend our support by providing access to students who will now be required to take AChm 121 (General Chemistry 2 lecture course) as part of their core classes for the major. In addition, we support the proposal that in the Climate, Biology and Geology concentrations may choose to take AChm 220 (Organic Chemistry 1 lecture course) and AChm 221 (Organic Chemistry 2 lecture course) as options for the elective portion of their majors.

If there are any other additional concerns regarding these curricular proposals, please do not hesitate to contact me directly.

**Biological Sciences**:

**To:** Vince Idone, Department of Earth and Atmospheric Sciences

**From:** Richard S. Zitomer, Chair of Biological Sciences

**Date:** January 12, 2009

**Subject:** Environmental Science major

I have reviewed the requirements for the Environmental Science Major. At 70 students in the major (freshman to senior), the Department of Biological Sciences has the capacity to absorb the anticipated impact of students in Bio120 that is required for this major. In addition, we can accommodate the students anticipated in the other courses listed as required and electives for the Biology concentration. We will not require any additional resources.

**Computer Science**:

Vince,

This is to confirm that CSI201 Introduction to Computer Science will be offered on a regular basis for the foreseeable future. As this course is central to not only our own students, but students in other programs, we anticipate that we will have sufficient resources allocated to it to allow students in the Environmental Science BS program to take the class. As a matter of fact, one of the reasons we updated the course last year was to make it more relevant and rewarding not just for our own students, but for those taking it in support of non-CS programs.

Best.

George

George Berg, Chair
berg@cs.albany.edu
518-442-4267

Computer Sci. Dept. LI-67A
University at Albany, SUNY
Albany, NY 12222 USA

# Course Action Forms

**University at Albany – State University of New York**

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 1

| | | | | | |
|---|---|---|---|---|---|
| ☐ | New Course | Revision of: ☐ | Number | ☐ | Description |
| ☐ | Cross-Listing | ☐ | Title | ☐ | Prerequisites |
| ☐ | Shared-Resources Course | ☐ | Credits | | |
| ☐ | Deactivate / Activate Course (boldface & underline as appropriate) | X | Other (specify): | **(see explanation)** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 301** New: **-----** Credits: **3**

Course Title: **Surface Hydrology and Hydrometeorology**

Course Description to appear in Bulletin:

**Same as at present.**

Prerequisites statement to be appended to description in Bulletin:

**Same as at present.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Eliminate as required for Environmental Science BS "core" curriculum; retain as an elective option in new "Climate" concentration of this major and as an elective option in the Earth and Atmospheric Sciences BA. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 2

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | | Other (specify): | | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 210** New: **-----** Credits: **-----**

Course Title: **Earth Materials**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The combination of faculty losses, the end of the Geological Sciences and the overall curriculum revisions submitted dictate that this course be deactivated. As it was previously required in ENV BS "core" curriculum, this will be replaced with a new course, A Geo 221. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Phy 140** New: **-----** Credits: **3**

Course Title: **Physics I: Mechanics**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A Phy 140 will be required for the revised curriculum of the Environmental Science BS; A Phy 105 will no longer be accepted. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 4

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Phy 105** New: **-----** Credits: **3**

Course Title: **General Physics I**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A Phy 105 will no longer be accepted to satisfy the Environmental Science BS core curriculum. A Phy 105 will remain acceptable as an option for satisfying the requirements in the Earth and Atmospheric Sciences BA. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 5

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Phy 150** New: **-----** Credits: **3**

Course Title: **Physics II: Electromagnetism**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A Phy 150 will be accepted to satisfy the Environmental Science BS core curriculum. A Phy 202 will be another option for satisfying the "core" requirements. In addition, <u>both</u> can be taken in this major, with one applied to the "core" and the other within either the Climate or Geology concentrations. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **6**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Phy 202** New: **-----** Credits: **3**

Course Title: **Environmental Physics**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A Phy 202 will be accepted to satisfy the Environmental Science BS "core" curriculum. A Phy 150 will be another option for satisfying the "core" requirements, as will T Phy 151. Phy 202 and either Phy 150 or 151 can be taken in this major, with one applied to the "core" and the other within either the Climate or Geology concentrations. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 7

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **R Pos 396** New: **-----** Credits: **3**

Course Title: **Energy Policy, Domestic and International**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is no longer offered, and would not be accepted to satisfy the "core" ENV BS requirements regardless in our proposed revision. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 8

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **R Pub 465** New: **-----** Credits: **3**

Course Title: **Hudson River Watershed**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course will no longer be accepted to satisfy the "core" ENV BS requirements in the proposed revision. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **9**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **H Sph 201** New: **-----** Credits: **3**

Course Title: **Intro to Public Health**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course will no longer be accepted to satisfy the "core" ENV BS requirements in the proposed revision. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Steven | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **10**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Chm 121** New: **-----** Credits: **3**

Course Title: **General Chemistry II**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course will now be required to satisfy the "core" ENV BS requirements. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **11**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | x Description |
| | Cross-Listing | | | Title | x Prerequisites |
| | Shared-Resources Course | | x | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 210** New: **-----** Credits: **3**

Course Title: **Atmospheric Structure, Thermodynamics, and Circulation**

Course Description to appear in Bulletin:

**Technical survey of the atmosphere with application of elementary physical and mathematical concepts to the horizontal and vertical structure of the atmosphere; planetary, regional and local circulations; weather systems; atmospheric radiation; precipitation physics and thermodynamics. Three lectures per week. Fall semester only.**

Prerequisites statement to be appended to description in Bulletin:

**A Mat 111 or 112 or 118; A Phy 105 or 140 or 141.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The revision to three credits from the current four credits is the result of separating the workshop into its own new one credit course ATM209 (see CAF_13). The workshop is designed specifically for atmospheric science BS majors. ATM210 will now also serve Environmental Science BS majors. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens7 | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 12

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | x Description |
| | Cross-Listing | | | Title | x Prerequisites |
| | Shared-Resources Course | | x | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 210 Z** New: **-----** Credits: **3**

Course Title: **Atmospheric Structure, Thermodynamics, and Circulation**

Course Description to appear in Bulletin:

**A Atm 210Z is writing intensive version of A Atm 210; only one may be taken for credit. Fall semester only. Three lectures per week. (See CAF_11.)**

Prerequisites statement to be appended to description in Bulletin:

**(None necessary.)**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The revision to three credits from the current four credits is the result of separating the workshop into its own new one credit course ATM209 (see CAF_13). The workshop is designed specifically for atmospheric science BS majors. ATM210 will now also serve Environmental Science BS majors. The earlier 4-credit version of this course also had a written discourse version. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 13

| | | | | | |
|---|---|---|---|---|---|
| x | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: ----- New: **A Atm 209** Credits: **1**

Course Title: **Weather Workshop**

Course Description to appear in Bulletin:

**Applications in weather analysis, including meteorological data decoding (METAR and RAOB), thermodynamic diagrams, cloud types, precipitation and visibility obscurations, and an introduction to meteorological instrumentation. Fall semester only.**

Prerequisites statement to be appended to description in Bulletin:

**Co-requisite: ATM 210 or 210Z.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course represents the "cleaving" of the operational forecasting aspects from the previously integrated lab of A Atm 210/Z, as per our revisions of the Environmental Science BS, and our proposal to use A Atm 210/Z as a three-credit course in the new "core" ENV BS curriculum. Only ATM BS majors will be required to take this course now. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 14

Please mark all that apply:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009 (first offering)**

Course Number Current: **A Geo 221** New: --- Credits: **4**

Course Title: **Minerals, Rocks, and Geological Time**

Course Description to appear in Bulletin:

**Physical properties, composition and structure of common rock-forming minerals; processes controlling the origin, composition, and emplacement of common igneous rocks, weathering and downslope transport, depositional facies and origin of common sedimentary rocks, formation and exhumation of metamorphic rocks; physical and bio-stratigraphy, quantitative methods for geological age determination. Three lectures and one lab each week. Students taking the Geology concentration of the Environmental Science BS must also enroll in A Geo 222 or 222Z, Introductory Field Geology. Fall semester only.**

Prerequisites statement to be appended to description in Bulletin:

**Prerequisite(s): A Chm 120 or T Chm 130; A Env/Geo 105; or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course replaces and combines parts of the former A Geo 210 Earth Materials, A Geo 211, Optical Mineralogy Lab, and the former GEO 230 Stratigraphy, for the proposed revisions in the Environmental Science BS program. It will be required for both the ENV BS and the Earth and Atmospheric Sciences BA. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

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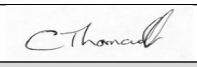
|---|---|
| Chris Thorncroft  | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| | |
| Maria Isabel Ayala | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 15

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 211** New: **-----** Credits: **4**

Course Title: **Weather Analysis and Forecasting**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

**Co-requisite: A Atm 209; prerequisites: A Atm 210 or 210Z or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**With revision of A Atm 210/Z for use as a required course in the ENV BS core, A Atm 209 was cleaved off and will now be required for Atm BS majors. For Earth and Atmospheric Science BA majors, our experience has been that the "operational forecasting" orientation of A Atm 211 does not sit well with this cohort of students. Hence, it will now just be an elective option within the major. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

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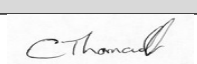
Chris Thorncroft  1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **16**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 120** New: **-----** Credits: **3**

Course Title: **General Biology I**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A Bio 120, now revised to 3 credits (lecture only, no lab) will be required in the Environmental Science BS core curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

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Chris Thorncroft

1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
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|---|---|---|
| | Gregory Stevens | 3-05-09 |
| | | |
| Maria Isabel Ayala | | 3-05-09 |

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**College of Arts and Sciences** **Course Action Form** **Proposal No.** **17**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | | |

Department: **Earth & Atmospheric Sciences** To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 304 or 304Z** New: **-----** Credits: **3**

Course Title: **Air Quality**

Course Description to appear in Bulletin:

(**As it appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**Prerequisites: A Mat 111 or 112 or T Mat 118; A Phy 105 or 140 or T Phy 141.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**One semester of physics should be adequate preparation for the fundamental concepts of A Atm 304.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

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| | | | |
|---|---|---|---|
| Chris Thorncroft | | 1-30-2009 | |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |

| | | |
|---|---|---|
| | Gregory Stevens | 3-05-09 |
| | | |
| Maria Isabel Ayala | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 18

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 307 or 307Z** New: **-----** Credits: **3**

Course Title: **Introduction to Atmospheric Chemistry**

Course Description to appear in Bulletin:

(**As it appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**Prerequisites: A Mat 111 or 112 or T Mat 118; A Chm 121; A Phy 105 or 140 or T Phy 141.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**One semester of physics should be adequate preparation for the fundamental concepts of A Atm 307, especially as a second semester of chemistry is required.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

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|---|---|---|---|
| Chris Thorncroft | | 1-30-2009 | |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |

| | | |
|---|---|---|
| | Gregory Stevens | 3-05-09 |
| | | |
| Maria Isabel Ayala | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences** **Course Action Form** **Proposal No.** 19

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | Major requirements. | |

Department: **Earth & Atmospheric Sciences** To be effective (semester/year): **Fall 2010 (first offering)**

Course Number Current: **-----** New: **A Atm 306** Credits: **3**

Course Title: **Climate Variability and Change**

Course Description to appear in Bulletin:

**This course will be organized in two parts. Part 1 will cover seasonal to multi-decadal natural variability of the global climate system; the El Nino Southern Oscillation (ENSO); monsoons, droughts and their causes; variability of high impact weather such as hurricanes; the fundamental physics of the coupled atmosphere-land-ocean system and our ability to predict it. Part 2 will cover anthropogenic climate change, including an objective assessment of observed trends in the past century and the anthropogenic contribution; theory of climate change linked to increased greenhouse gases; climate change predictions and the IPCC process. Offered alternate Fall semesters.**

Prerequisites statement to be appended to description in Bulletin:

**A Mat 113 or 119 and A Atm 210 or 210Z.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

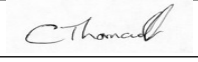
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Our ATM-BS students and ENV-BS students in the Climate track should be exposed to the theory of climate change and how this is modeled. They currently have little or no exposure to these issues, which is clearly undesirable given the significance of this issue. To put climate change in perspective, it is necessary for the students to appreciate the natural variability that characterizes the climate system and the theories that relate to this. The theory of ENSO is not taught anywhere in the College. A Atm 306 will be <u>required</u> for the Climate track. The math and physics content of this course will be at a higher level than A Gog 304 and A Gog 431. Indeed neither of these courses would satisfy the prerequisites for the proposed course. The course will cover different material to that in A GEO 450 which will mainly deal with <u>past</u> climates. For the ATM-BS students, the proposed course will be an elective option, and would be a desirable follow-on to A Atm 305, but A Atm 305 is not considered a prerequisite. E+A BA students could take this course if they also elect to take A Mat 113 or T Mat 119.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**Potentially Geography and Planning (see above), but Prof. Lapenas (instructor for both Gog courses) has indicated that he has no concern with this. His assertion of this and support for this course is contained in the curriculum revision narrative.**

Chris Thorncroft  1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences** **Course Action Form** **Proposal No.** 20

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences** To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 414** New: **-----** Credits: **3**

Course Title: **Air Pollution Meteorology**

Course Description to appear in Bulletin:

**(As it appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**Prerequisites: A Atm 210 or 210Z, or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**With creation of the Climate concentration in the Environmental Science BS, this course is identified as a relevant elective option in this concentration choice. The previous requirement of Atmospheric Dynamics (A Atm 410) is inappropriate and amounted to "overkill." Hence the prerequisite modification to Atm 210 or the original "permission of instructor." (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 21

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | X | Description |
| | Cross-Listing | | X | Title | | | Prerequisites |
| X | Shared-Resources Course | | X | Credits | | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirement.** | | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number — Current: **A Geo 450** New: **-----** Credits: **3 (previously 4)**

Course Title: **Paleoclimatology (previously Climate Change)**

Course Description to appear in Bulletin:

**This class is designed to introduce the field of Paleoclimatology and will specifically focus on the use of sediments and other biological (corals, tree rings) and geological archives (ice cores and speleothems) to reconstruct environmental, climatic, and oceanographic change over a range of time scales with focus on the latest Pleistocene and Holocene. In the process we will cover a range of topics in lecture that will provide an introduction to climatology, age dating techniques, climatic proxies (isotopes and trace metals), micropaleontology, and time-series analysis. In addition to lectures, the class will involve review of current and past scientific studies. Students will lead in-class discussions of scientific papers and a written review paper on a relevant topic of choice is required. Two lectures and one discussion section per week.**

Prerequisites statement to be appended to description in Bulletin:

**A Mat 112 or 118, A Chm 120 or 130, 121 or 131, A Atm 210 or 210Z and A Geo 221.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###): **A Atm 550**

Explanation of proposal:

**This is a revision to an existing class in the Environmental Science program to accommodate changes made to the cross-listed (graduate) equivalent of this class. In addition, we will now <u>require</u> this course in the Climate concentration of the Environmental Science BS. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| Chris Thorncroft | 1-30-2009 | | |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 22

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 304** New: **-----** Credits: **3**

Course Title: **Climatology**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**With creation of the Climate concentration of the revised Environmental Science BS, this course is identified as one required in this concentration. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 23

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 335** New: **-----** Credits: **3**

Course Title: **Meteorological Remote Sensing**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**With creation of the Climate concentration of the revised Environmental Science BS, this course is identified as one appropriate to the electives allowed in this concentration. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

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Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 24

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 435** New: **-----** Credits: **3**

Course Title: **Geohydrology**

Course Description to appear in Bulletin:

**(Same as appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**A Mat 112 or T Mat 118, A Chm 120 or T Chm 130, A Geo 221, or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in the Climate and Geology concentrations of the revised Environmental Science curriculum. It will now require the new course, A Geo 221, as essential preparation for the material covered. (See the curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 25

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Mat 308** New: **-----** Credits: **3**

Course Title: **Topics in Statistical Inference**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in all four possible concentrations (Biology, Climate, Geography, and Geology) of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **26**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Chm 220** New: **-----** Credits: **3**

Course Title: **Organic Chemistry I**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in the Biology and Geology concentrations of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 27

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Chm 221** New: **-----** Credits: **3**

Course Title: **Organic Chemistry II**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in the Biology and Geology concentrations of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **28**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **I Csi 201** New: **-----** Credits: **4**

Course Title: **Introduction to Computer Science**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

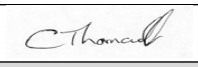
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in the Climate, Geography and Geology concentrations of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | |
|---|---|
| Chris Thorncroft  | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| | |
| Maria Isabel Ayala | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **29**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env 496** New: **-----** Credits: **1-3**

Course Title: **Environmental Internship**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in all four possible concentrations (Biology, Climate, Geography and Geology) of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 30

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Mat 214** New: **-----** Credits: **4**

Course Title: **Calculus of Several Variables**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in all four possible concentrations (Biology, Climate, Geography and Geology) of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **31**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Mat 311** New: **-----** Credits: **3**

Course Title: **Ordinary Differential Equations**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in all four possible concentrations (Biology, Climate, Geography and Geology) of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 32

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Phy 240** New: **-----** Credits: **3**

Course Title: **Physics III: Structure of Matter**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in the Climate and Geology concentrations of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 33

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 320** New: **-----** Credits: **3**

Course Title: **Ecology**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate elective in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 34

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 121** New: **-----** Credits: **3**

Course Title: **General Biology II**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as <u>required</u> in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **35**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 122** New: **-----** Credits: **1**

Course Title: **General Biology I Lab**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as <u>required</u> in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **36**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 123Z** New: **-----** Credits: **1**

Course Title: **General Biology II Lab**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as <u>required</u> in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 37

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 230** New: **-----** Credits: **3**

Course Title: **People and resources in Ecological Perspective**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

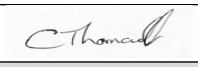
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as <u>required</u> in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | |
|---|---|
| Chris Thorncroft  1-30-2009 | |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| | |
| Maria Isabel Ayala | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **38**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 308** New: **-----** Credits: **3**

Course Title: **Parasitic Diseases….**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **39**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 321** New: **-----** Credits: **3**

Course Title: **The Insects**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 40

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 327** New: **-----** Credits: **3**

Course Title: **Experimental Ecology**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **41**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 402** New: **-----** Credits: **3**

Course Title: **Evolution**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 42

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 432** New: **-----** Credits: **3**

Course Title: **Animal Behavior**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 43

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 442** New: **-----** Credits: **3**

Course Title: **Restoration Ecology**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | v3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 44

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 443** New: **-----** Credits: **1**

Course Title: **Restoration Ecology Lab**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

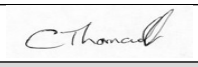
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | |
|---|---|
| Chris Thorncroft  | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| Maria Isabel Ayala | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 45

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 455** New: **-----** Credits: **3**

Course Title: **Plant Ecology**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 46

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 456** New: **-----** Credits: **1**

Course Title: **Plant Ecology Lab**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

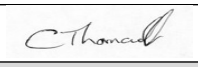
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | |
|---|---|
| Chris Thorncroft  | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| Maria Isabel Ayala | v3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 47

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 407** New: **-----** Credits: **3**

Course Title: **Biogeography (proposed by G+P for Fall 2009)**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. It also would be appropriate for the A Gog elective list of the Earth and Atmospheric Sciences BA. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 48

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 216** New: **-----** Credits: **3**

Course Title: **Perspectives in Life Sciences**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 49

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 218** New: **-----** Credits: **3**

Course Title: **Intro. To Plant Biology**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **50**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Bio 222** New: **-----** Credits: **2**

Course Title: **Biological Consequences of Global Climate Change**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 51

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | X | Description |
| | Cross-Listing | | X | Title | X | Prerequisites |
| X | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo466** New: **-----** Credits: **3**

Course Title: **Marine and Estuary Systems**

Course Description to appear in Bulletin:

**This class is designed as an in-depth study of modern processes in marine and estuary systems, with a focus on marine/estuary sedimentology and biogeochemistry. Topics to be covered include: water column parameters, dissolved gases in sea water, trace elements and nutrients, marine and estuarine sediment processes; and aerosol deposition. In addition to lectures, the class will involve review of current scientific studies, class presentations by each student on papers being discussed, and a review paper on a relevant topic of choice. Two lectures each week.**

Prerequisites statement to be appended to description in Bulletin:

**A Chm 120 or 130, A Env/Geo 105, A Env/Geo/Gog 201, A Atm 210/Z, A Geo 221, or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is ~~(will be)~~ cross listed with (i.e., CAS ###): **A Env (same department)**

This course is (will be) a shared-resources course with (i.e., CAS ###): **A Atm 566 (only Atm at grad level now!)**

Explanation of proposal:

**This is a revision of an existing class to accommodate changes being made to the graduate (cross-listed) companion course. In addition, this course is identified as an appropriate elective option in the Biology concentration of the revised Environmental Science BS. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **52**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Mat 220** New: **-----** Credits: **3**

Course Title: **Linear Algebra**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Biology, Geography and Geology concentrations of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **53**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog/Pln 220** New: **-----** Credits: **3**

Course Title: **Intro. To Urban Planning**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

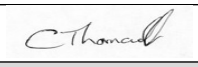
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as a <u>required</u> course in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | |
|---|---|
| Chris Thorncroft  1-30-2009 | |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| | |
| Maria Isabel Ayala | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 54

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 290** New: **-----** Credits: **3**

Course Title: **Cartography**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as a <u>required</u> course in the Geography concentration of the revised Environmental Science curriculum. It also seems appropriate for use in the Earth and Atmospheric Sciences BA, so it now will appear in an elective list. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **55**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog/Pln 333** New: **-----** Credits: **3**

Course Title: **Principles of Environmental Management**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**For the Geography concentration of the revised Environmental Science curriculum, students must take either <u>one</u> of A Gog/Pln 333 or A Gog/Pln 430/Z. Both can apply to the concentration overall. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **56**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog/Pln 430/Z** New: **-----** Credits: **3**

Course Title: **Environmental Planning**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**For the Geography concentration of the revised Environmental Science curriculum, students must take either <u>one</u> of A Gog/Pln 333 or A Gog/Pln 430/Z. Both can apply to the concentration overall. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **57**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 344Y** New: **-----** Credits: **3**

Course Title: **World Population**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **58**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 554** New: **-----** Credits: **3**

Course Title: **Environment and Development**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **59**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 390** New: **-----** Credits: **3**

Course Title: **Intermediate Cartography**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

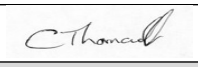
This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | |
|---|---|
| Chris Thorncroft  | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
| | Gregory Stevens 3-05-09 |
| Maria Isabel Ayala | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **60**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 414** New: **-----** Credits: **3**

Course Title: **Computer Mapping**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **61**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 431** New: **-----** Credits: **3**

Course Title: **Climatic Change**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **62**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 479** New: **-----** Credits: **3**

Course Title: **Fundamentals of Applied GPS**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **63**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 484** New: **-----** Credits: **3**

Course Title: **Intro. To Remote Sensing of the Environment**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 64

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 485/Z** New: **-----** Credits: **3**

Course Title: **Advanced Remote Sensing**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **65**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 495** New: **-----** Credits: **1**

Course Title: **Introductory MapInfo**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **66**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 496** New: **-----** Credits: **3**

Course Title: **Geographic Information Systems**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **67**

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Gog 293** New: **-----** Credits: **3**

Course Title: **Interpretation of Aerial Photographs**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geography concentration of the revised Environmental Science curriculum. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| Chris Thorncroft | | 1-30-2009 |
|---|---|---|
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |

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**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 68

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 212** New: **-----** Credits: **1**

Course Title: **Earth Materials Lab**

Course Description to appear in Bulletin:

**------**

Prerequisites statement to be appended to description in Bulletin:

**--------**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Eliminate as required for the Geology concentration of the Environmental Science BS; also, deactivate the course based upon elimination of the Geological Sciences program and loss of faculty. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**------**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** **69**

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 230** New: **-----** Credits: **3**

Course Title: **Stratigraphy and Sedimentology**

Course Description to appear in Bulletin:

**------**

Prerequisites statement to be appended to description in Bulletin:

**--------**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Eliminate as required for Geology concentration of the Environmental Science BS; also, deactivate the course based upon elimination of the Geological Sciences program and loss of faculty. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**------**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 70

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 231** New: **-----** Credits: **1**

Course Title: **Field Excursion for Stratigraphy**

Course Description to appear in Bulletin:

**------**

Prerequisites statement to be appended to description in Bulletin:

**--------**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Eliminate as required for the Geology concentration of the Environmental Science BS; also, deactivate the course based upon elimination of the Geological Sciences program and loss of faculty. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**------**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences** **Course Action Form** **Proposal No.** **71**

Please mark all that apply:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences** To be effective (semester/year): **Fall 2009 (first offering)**

Course Number Current: **A Geo 222** New: **------** Credits: **1**

Course Title: **Introductory Field Geology**

Course Description to appear in Bulletin:

**One lab per week and five full-day weekend field excursions. Students enrolled in this course should concurrently enroll in A Geo 221. Extended written and illustrated reports must be submitted based on the observations made on each excursion. Fall semester only. Only one of A Geo 222 or 222Z can be taken for credit.**

Prerequisites statement to be appended to description in Bulletin:

**Co-requisite(s): A Geo 221 or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course partially replaces the former GEO 231 Field Excursions in Stratigraphy, and reflects the overall considerations of the proposed revisions in the Environmental Science BS program. This is a <u>required</u> course for the Geology concentration of the ENV BS. It also will be required for Earth and Atmospheric Science BA majors. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**----**

| | | | |
|---|---|---|---|
| Chris Thorncroft | | | 1-30-2009 |
| Approved by Chair(s) of Departments having cross-listed course(s) (PRINT NAME/SIGN) | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 72

Please mark all that apply:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| X | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009 (first offering)**

Course Number Current: **A Geo 222Z** New: **---** Credits: **1**

Course Title: **Introductory Field Geology**

Course Description to appear in Bulletin:

**Writing intensive version of A Geo 222. Only one of A Geo 222 or 222Z may be taken for credit. Fall semester only.**

Prerequisites statement to be appended to description in Bulletin:

**Co-requisite(s): A Geo 221, or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course partially replaces the former GEO 231 Field Excursions in Stratigraphy, and reflects the overall considerations of the proposed revisions in the Environmental Science BS program. This "Z" version will address the four criteria for satisfying the Written Discourse requirement of the current General Education program in terms of the potential body of work entailed, opportunity for revisions and consultation with the instructor, and typically written and verbal response from the instructor. Only students in the Geology concentration of the ENV BS are to take A Geo 222, and the "Z" version will be available for them as an option. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

Chris Thorncroft

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| | | | |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No. 73**

Please mark all that apply:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | | |

Department: **Earth & Atmospheric Sciences** To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 350Y** New: **-----** Credits: **4**

Course Title: **Environmental Geochemistry**

Course Description to appear in Bulletin:

**(Same as it appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**(Same as it appears now.)**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is <u>required</u> for the Geology concentration of the curriculum revision of the Environmental Science BS. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**------**

Chair of Proposing Department **(TYPE NAME/SIGN)** Date

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Chair of Academic Programs Committee **(PRINT NAME/SIGN)** | Date | Dean of Graduate (Undergraduate) Studies **(PRINT NAME/SIGN)** | Date |
| Maria Isabel Ayala | | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 74

Please mark all that apply:

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Geo 470** New: **-----** Credits: **3**

Course Title: **Tectonics**

Course Description to appear in Bulletin:

**(Same as appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**A Geo 221, 330, or permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is <u>required</u> for the Geology concentration of the curriculum revision of the Environmental Science BS. Also, with the revised prereqs and other changes, this is now a potential elective for Earth and Atmospheric Science BA students. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**------**

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|

| | | |
|---|---|---|
| | Gregory Stevens | 3-05-09 |
| | | |
| Maria Isabel Ayala | | 3-05-09 |

University at Albany – State University of New York

**College of Arts and Sciences**

## Course Action Form

**Proposal No.** 75

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Geo 330** New: **-----** Credits: **3**

Course Title: **Structural Geology I**

Course Description to appear in Bulletin:

**(As it appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**A Geo 221.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geology concentration of the revised Environmental Science curriculum. The new prerequisites also reflect the overall revisions and course restructuring being proposed. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

| | | | |
|---|---|---|---|
| Chris Thorncroft | | 1-30-2009 | |
| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 76

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Geo 331** New: **-----** Credits: **1**

Course Title: **Field Excursions for Structural Geology I**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geology concentration of the revised Environmental Science curriculum. Also, with the revised prereqs and other changes, this is now a potential elective for Earth and Atmospheric Science BA students. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date | Dean of College **(PRINT NAME/SIGN)** Date |
|---|---|
| | Gregory Stevens 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 77

| | | | | | |
|---|---|---|---|---|---|
| [ ] | New Course | Revision of: [ ] | Number | [ ] | Description |
| [ ] | Cross-Listing | [ ] | Title | [ ] | Prerequisites |
| [ ] | Shared-Resources Course | [ ] | Credits | | |
| [ ] | Deactivate / Activate Course (boldface & underline as appropriate) | [X] | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Geo 332** New: **-----** Credits: **1**

Course Title: **Structural Geology Laboratory**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: [ ]

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is identified as an appropriate <u>elective</u> option in the Geology concentration of the revised Environmental Science curriculum. Also, with the revised prereqs and other changes, this is now a potential elective for Earth and Atmospheric Science BA students. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 78

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Geo 106** New: **-----** Credits: **1**

Course Title: **Physical Geology Laboratory**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The combination of faculty losses, the end of the Geological Sciences program and the overall curriculum revisions submitted dictate that this course be deactivated. It was previously required in the Geology minor (which is still available) and the Earth and Atmospheric Sciences BA. (See curriculum revision narrative and revised UG Bulletin Copy.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 79

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 420** New: **-----** Credits: **3**

Course Title: **Instrumental Analysis in Environmental Science**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The combination of faculty losses, the end of the Geological Sciences program and the overall curriculum revisions submitted dictate that this course be deactivated and no longer required. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft

1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 80

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number — Current: **T Chm 130** New: **-----** Credits: **3**

Course Title: **Advanced General Chemistry I**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is appropriate to satisfy (of course!) the first-semester introductory chemistry requirement for all degree programs in DEAS.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 81

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number — Current: **T Chm 131** New: **-----** Credits: **3**

Course Title: **Advanced General Chemistry II**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is appropriate to satisfy (of course!) the second-semester introductory chemistry requirement for all degree programs in DEAS.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft — 1-30-2009

Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** — Date

Dean of College **(PRINT NAME/SIGN)** — Date

Gregory Stevens — 3-05-09

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 82

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **T Mat 118** New: **-----** Credits: **3**

Course Title: **Honors Calculus I**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is appropriate to satisfy (of course!) the first-semester introductory calculus requirement for all degree programs in DEAS.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 83

| | | | | | |
|---|---|---|---|---|---|
| ☐ | New Course | Revision of: ☐ | Number | ☐ | Description |
| ☐ | Cross-Listing | ☐ | Title | ☐ | Prerequisites |
| ☐ | Shared-Resources Course | ☐ | Credits | | |
| ☐ | Deactivate / Activate Course (boldface & underline as appropriate) | X | Other (specify): | **Major requirements.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **T Mat 119** New: **-----** Credits: **3**

Course Title: **Honors Calculus II**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is appropriate to satisfy (of course!) the second-semester introductory calculus requirement for all degree programs in DEAS.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 84

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **T Phy 141** New: **-----** Credits: **3**

Course Title: **Honors Physics I: Mechanics**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is appropriate (of course!) to satisfy the first semester introductory physics requirement for all degree programs in DEAS.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft

1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 85

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **T Phy 151** New: **-----** Credits: **3**

Course Title: **Honors Physics II: Electromagnetism**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course is appropriate (of course!) to satisfy the second semester introductory physics requirement for all degree programs in DEAS.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 86

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 211** New: **-----** Credits: **1**

Course Title: **Optical Mineralogy Lab**

Course Description to appear in Bulletin:

---

Prerequisites statement to be appended to description in Bulletin:

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The combination of faculty losses, the end of the Geological Sciences and the overall curriculum revisions submitted dictate that this course be deactivated. Its most critical content will be incorporated into A Geo 221, which will be required in the ENV BS "core" curriculum and the Earth and Atmospheric Sciences BA. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 87

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | X Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 497** New: **-----** Credits: **1-3**

Course Title: **Independent Study**

Course Description to appear in Bulletin:

**Field or laboratory investigation of a chosen environmental or geological problem, including the writing of a research report to be undertaken during the senior year. Prerequisite(s): permission of instructor. Students may repeat this course once for additional credits. Fall or spring semesters.**

Prerequisites statement to be appended to description in Bulletin:

---

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###): **Env/Geo (same department)**

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A simple clarification of wording to include "environmental or geological" explicitly in the description, consistent with cross-listed Env/Geo designation.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** Date

Dean of College **(PRINT NAME/SIGN)** Date

Gregory Stevens 3-05-09

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 88

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | | Description |
| | Cross-Listing | | | Title | X | Prerequisites |
| | Shared-Resources Course | | | Credits | | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env 490** New: **-----** Credits: **3**

Course Title: **Major Topics In Environmental Science**

Course Description to appear in Bulletin:

**(As it appears now.)**

Prerequisites statement to be appended to description in Bulletin:

**A Env 105, Env/Geo/Gog 201, Env/Geo 250, A Atm 210 or 210Z, A Bio 120, A Geo 221, or permission of the instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**The prerequisites indicated above ensure an appropriately broad background for the student to tackle the inherent inter-disciplinary orientation of this course.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 89

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | X Description |
| | Cross-Listing | | X | Title | X Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 455** New: **-----** Credits: **2-3**

Course Title: **Special Topics In Environmental or Geological Science**

Course Description to appear in Bulletin:

**A structured program of reading and seminars leading to an in-depth understanding of a chosen topic in environmental or geological science. Students may repeat course once for an additional two or three credits. Fall or spring semester.**

Prerequisites statement to be appended to description in Bulletin:

**A Atm 210 or 210Z and A Geo 221, and permission of instructor.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is cross listed with (i.e., CAS ###): **Env/Geo (same department)**

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A simple clarification of wording to include "environmental or geological" explicitly in the description, consistent with cross-listed Env/Geo designation. Also, the prerequisites now reflect currently available and appropriate courses.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**None.**

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 90

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Geo 400** New: **-----** Credits: **4**

Course Title: **Field Mapping**

Course Description to appear in Bulletin:

**-----**

Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Again, the end of the Geological Sciences degree program (grad and undergrad), and in reflection of the overall ENV BS revisions proposed here dictate that this course be deactivated. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

-----

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 91

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | X Description |
| | Cross-Listing | | X | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 395** New: **-----** Credits: **1**

Course Title: **Writing in Environmental or Geological Science**

Course Description to appear in Bulletin:

**May be taken with any Env or Geo course at the 300 or 400 level to fulfill a writing intensive version of that course. Students will have an opportunity for assistance during writing and revision of written material with the help of editorial assignments from the instructor.**

Prerequisites statement to be appended to description in Bulletin:

**Co-requisite(s): any A Env or A Geo course at the 300 or 400 level.**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This is a simple revision to explicitly reflect both the environmental and geological courses as potential upper-level writing venues. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

-----

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 92

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | | Other (specify): | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 499** New: **-----** Credits: **1**

Course Title: **Seminar in Geology**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Kind of moot without a formal Geological Sciences graduate or undergraduate program...**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 93

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| | Deactivate / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major Requirements** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 107** New: **-----** Credits: **3**

Course Title: **The Oceans**

Course Description to appear in Bulletin:

**(Same.)**

Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**A Atm 107, The Oceans, will now be accepted as one of the 100-level ATM courses contributing to the Earth and Atmospheric Sciences BA. A student can choose between A Atm, The Atmosphere, A Atm 102, Science and major Environmental Issues, and A Atm 107, The Oceans.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 94

| | | | | | |
|---|---|---|---|---|---|
| ☐ | New Course | Revision of: ☐ | Number | ☐ | Description |
| ☐ | Cross-Listing | ☐ | Title | ☐ | Prerequisites |
| ☐ | Shared-Resources Course | ☐ | Credits | | |
| ☐ | Deactivate / Activate Course (boldface & underline as appropriate) | X | Other (specify): | **Elective Option** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Atm 305** New: **-----** Credits: **3**

Course Title: **Global Physical Climatology**

Course Description to appear in Bulletin:

**(Same.)**

Prerequisites statement to be appended to description in Bulletin:

**(Same.)**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**With the increase of the prerequisites for this course made last year, it is unrealistic for Earth and Atmospheric Science BA students to take this course except in exceptional instances. Hence, it is removed from the list of elective choices for this major. It can be utilized via substitution after advisement.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

-----

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 95

| | | | | | |
|---|---|---|---|---|---|
| ☐ | New Course | Revision of: ☐ | Number | ☐ | Description |
| ☐ | Cross-Listing | ☐ | Title | ☐ | Prerequisites |
| ☐ | Shared-Resources Course | ☐ | Credits | | |
| ☐ | Deactivate / Activate Course (boldface & underline as appropriate) | X | Other (specify): | **Major elective option.** | |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Mat 113** New: **-----** Credits: **4**

Course Title: **Calculus II**

Course Description to appear in Bulletin:

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Prerequisites statement to be appended to description in Bulletin:

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If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**This course (and, of course, T Mat 119) is considered a very useful elective option in the Earth and Atmospheric Sciences BA, as it allows the prereqs to be satisfied for several other relevant courses. Hence, it will be specifically cited in the list.**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

---

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |

| Maria Isabel Ayala | 3-05-09 |
|---|---|

University at Albany – State University of New York

**College of Arts and Sciences**

# Course Action Form

**Proposal No.** 96

| | | | | | |
|---|---|---|---|---|---|
| | New Course | Revision of: | | Number | Description |
| | Cross-Listing | | | Title | Prerequisites |
| | Shared-Resources Course | | | Credits | |
| X | **Deactivate** / Activate Course (boldface & underline as appropriate) | | X | Other (specify): | **Major requirements.** |

Department: **Earth & Atmospheric Sciences**

To be effective (semester/year): **Fall 2009**

Course Number Current: **A Env/Geo 210** New: **-----** Credits: **3**

Course Title: **Earth Materials**

Course Description to appear in Bulletin:

**------**

Prerequisites statement to be appended to description in Bulletin:

**--------**

If S/U is to be designated as the only grading system in the course, check here: ☐

This course is (will be) cross listed with (i.e., CAS ###):

This course is (will be) a shared-resources course with (i.e., CAS ###):

Explanation of proposal:

**Eliminate as required for the Geology concentration of the Environmental Science BS; also, deactivate the course based upon elimination of the Geological Sciences program and loss of faculty. (See curriculum revision narrative.)**

Other departments or schools which offer similar or related courses and which have certified that this proposal does not overlap their offering:

**------**

Chris Thorncroft 1-30-2009

| Approved by Chair(s) of Departments having cross-listed course(s) **(PRINT NAME/SIGN)** | Date | Dean of College **(PRINT NAME/SIGN)** | Date |
|---|---|---|---|
| | | Gregory Stevens | 3-05-09 |
| Maria Isabel Ayala | | | 3-05-09 |