

DEPARTMENT OF GEOGRAPHY

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Benjamin Bowser, Dean
College of Letters, Arts and Social Sciences
California State University, East Bay
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April 1st, 2008

RE: External Review Dept. of Geog and Env. Studies

Dear Dean Bowser,

It was a pleasure meeting you during my visit to Cal State East Bay. I enjoyed the experience of reviewing the Department of Geography and Environmental Studies. It is an outstanding department that is poised to achieve even more success with two essential additions:

- a new tenure-track line in Cultural/Urban Geography with a regional specialty in Africa or Europe
- resources to remodel and expand their geospatial teaching laboratory.

My report provides background information, rationale, and my views on many other matters. However, some key points stand out.

- The quality of the faculty is excellent - on a par with that at PhD-granting programs. These are committed people with a genuine love of teaching that I seldom see.
- The student credit hour production of the department is excellent and will grow with the addition of the faculty line and the expansion of the geospatial laboratory. Based on my experience at New Mexico State University, the number of majors will double in 4-5 years if this lab remodeling is done. Geospatial careers are exploding across the country. MONEY magazine has named "geospatial analysis and Geographic Information Systems" one of the Top Ten careers in terms of growth in opportunities.
- Two graduate assistantships are needed to provide teaching assistance in geospatial classes.
- The department is a stand-out in the area of energy and environmental sustainability. Play on that strength.

- The department should consider whether offering six "Areas of Specialization" is the best course of action. It may be confusing prospective majors more than it helps.
- More courses should be offered at the 1000 level to raise productivity and attract more majors.
- The department should craft a Functions and Criteria Statement which lays out the rubric for measuring progress toward promotion and tenure. This will help clarify the process and result in higher productivity.
- CSUEB should immediately amend any policies that stand in the way of faculty receiving summer salary and/or supplementary compensation from grant and contract funding. This will allow faculty to improve their salaries, increase faculty retention, allow the hiring of students, and lift morale.

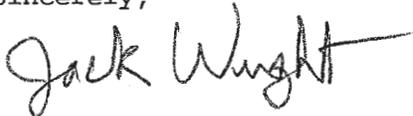
The Department of Geography and Environmental Studies at Cal State East Bay is an excellent member of the campus community. I believe this department will double its majors to 100 or more if they are provided some help. The new line is essential. The expansion of the geospatial lab is critical. Students can learn and gain skills in cartography, Geographic Information Systems, and remote sensing that will lead to high-paying and meaningful careers in federal, state, and local government agencies, business, software companies, non-profit organizations, and international agencies if they are provided a high-quality lab. At New Mexico State, the number of majors has risen from 42 to 96 in four years after we built a 40-seat geospatial lab. Labs prepare the kids for jobs and at universities like ours that is the bottom line.

Dean Bowser, this strong department can become a signature program with some support. The job market for what they do is immense and growing. You have an excellent department here. In five years, it could be a magnet for students from all over the Bay Area. I strongly urge you and the President to invest in them. The returns will be enormous.

Please contact me if you have any questions or require any additional information.

Once again, a pleasure to meet you.

Sincerely,



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CAL STATE EAST BAY
DEPARTMENT OF GEOGRAPHY AND ENVIRONMENTAL STUDIES
EXTERNAL REVIEWER'S REPORT

April 1st, 2008

Overview

This external review is the result of a site-visit on March 6th and 7th, 2008. During that time I met with every departmental faculty member, with faculty from related programs on campus, with selected administrators (CLASS Dean, President's office), toured the department and the campus and, in addition to the department's self-study materials, gathered numerous documents on curriculum, enrollments, and strategic planning for the next five years. In addition, I later compared the CSUEB programs to similar programs within the Cal State system.

Executive Summary

- The quality and productivity of tenure-track faculty and lecturers is excellent.
- A new tenure-track line (Assistant Professor) is urgently needed in Cultural/Urban Geography with a regional specialty in Africa or Europe.
- I strongly recommend that resources be allocated to creating a state-of-the-art geospatial laboratory for the department with 40 work stations.
- The department should be allocated two paid graduate teaching assistantships in order to provide teaching assistance in geospatial labs and other high-enrollment courses.
- The department should continue their efforts toward making energy and environmental sustainability a reality on the CSU East Bay campus and throughout the CSU system.
- The department should carefully consider whether advertising that it offers six "Areas of Specialization" is the most effective course of action.
- The department should consider offering courses at the 1000 level.
- The total of 61 units for undergraduate Geography degrees is appropriate and any expansion should be carefully considered.
- Student advising and assessment efforts have resulted in curriculum improvements.

- The department should craft a Functions and Criteria Statement which lays out the rubric for measuring progress toward promotion and tenure.
- CSUEB should immediately amend any policies that stand in the way of faculty receiving summer salary and/or supplementary compensation from grant and contract funding.
- Greater contact with alumni of the department is needed.

Faculty

The quality of tenure-track faculty and lecturers is excellent. Their interests include physical geography, paleoclimatology, geomorphology, historical geography, Southeast Asia, California, energy, the environment, cartography, GIS, remote sensing, the Americas, East Asia, demography, water, and sustainable development. This scope is extraordinary given the small size of the faculty and is highly appropriate given their combined mission of teaching courses integral to both the Geography and Environmental Studies programs. One faculty member, Dr. Scott Stine, was selected as Cal State East Bay's Outstanding Professor in 2005 – an honor that reflects the overall quality of the department. The combined achievements of the faculty are also particularly impressive, including national visibility in the areas of renewable energy and paleoclimatology. I consider the faculty to be on a par with those at highly regarded Ph.D.- granting programs. This is extraordinary given the chronic shortage of financial resources and frequent changes in administrators at CSUEB. The faculty possesses a sincere and profound personal and professional commitment to teaching, research, and service to the University (especially through faculty governance) and to their communities.

New Faculty Lines

Given the recent growth in enrollments, I strongly recommend that the department request and be allocated a new tenure-track line in Cultural/Urban Geography with a regional specialty in Africa or Europe. The department's introductory Cultural Geography course (offered only once per quarter and mainly taught by lecturers) now draws 200 students annually. To the best of my knowledge, no other Geography program in the CSU system (and very few nationally) is without a faculty member specializing in cultural or urban geography – the cornerstones of “human geography,” a pillar of the discipline. (The author of the department's previous external review, it should be noted, also recommended a tenure-track position in Cultural Geography.)

The department serves a combined 1,500 students annually. This demand, largely generated by contributions to the university's General Education program in both science

and social science, warrants a tenure-track line to enhance and expand offerings in cultural and urban geography and other areas of the curriculum. The regional specialization in Africa seems especially overdue, since only one regularly scheduled course is offered on Africa on the entire CSUEB campus. Given the importance of Africa in global development, human rights, natural resources, environment, and health issues, such a regional specialization would serve the entire campus community. I spoke with Dr. Norm Bowen, Director of the International Studies program, and I believe that a geographer with expertise in Africa would provide tremendous benefits for that program as well. I should note that while there is faculty expertise in Asia, North America and Latin America, there is no coverage of Europe. At some point that should be addressed, perhaps even internally.

In the near future, a second line should also be allocated to an environmental specialist with a focus on geospatial techniques. This will be particularly needed when the inevitable growth in majors is seen following an expansion of the GIS/remote sensing laboratory (see Facilities, below). This line would provide opportunities for more frequent course offerings (than the present once-a year pattern) and larger sections for vital geospatial classes.

Degrees and Curriculum

The department offers a B.A., B.S., and M.A. degrees in Geography and a B.A. in Environmental Studies. The combined number of majors in the undergraduate programs is approximately 50 with 10-13 graduate students typically enrolled. With 6 tenure-track faculty this results in an undergraduate ratio of 8:1 (majors to faculty) a figure that is somewhat low compared to similar programs. Fundamental changes in the General Education program at CSUEB (implementation of freshman and sophomore clusters) nine years ago negatively impacted the department. Lower-division introductory courses (e.g. Geography 1000 and Environmental Studies 2000), historically a pool for new majors, were rendered obsolete because they did not fit into narrowly defined cluster themes. The department once had in excess of 100 majors and is striving to return to that figure. Progress is being made in that regard based on the current revamping of curriculums for both undergraduate programs. Their overall teaching service is very strong. The graduate program has a ratio of 2:1 (students to faculty), a reasonable figure. However, programs of a similar size have up to 25 grad students while maintaining quality. To be fair, most of those offer funded graduate assistantships, which is not the case at CSUEB. Seen in this light, the number of graduate students is very reasonable. I strongly recommend that the department be allocated two paid graduate teaching assistantships in order to provide teaching assistance for geospatial labs and other courses. This would significantly improve the long-term quality of the graduate program.

The graduate program's proposed curriculum, restructured this academic year, looks solid. I particularly like the use of separate courses on Geographical Ideas (GEOG 6000) and Thesis Proposal preparation (GEOG 6010). The emphasis on both geographical

thinking and GIS is highly appropriate given the reciprocal strength of these topics. The “new and improved” graduate program should attract more and better MA students.

The B.A. in Geography serves students seeking careers in policy and secondary teaching while the B.S. is designed for students with a stronger science and techniques focus. This differentiation is appropriate and useful.

The B.A. in Environmental Studies, a distinctive program with curricular connections to Geography, offers a unique third track, providing a course of study for students who wish to focus specifically on environmental issues. I was particularly impressed by the restructured (this academic year) ENVT program. The decision to reduce the total number of units in the major to 85-88 from 100-103 should be applauded. At 85 units, the program remains on the high side for undergraduate degrees but the revamped program is less complex and more integrative. I endorse the proposed discontinuation of three Options (Ecology/Life Sciences, Environmental Health, and Human Environment) and the addition of a completely new Option (Environment and Social Justice). To learn more about how Environmental Studies and Environmental Science (in the College of Science) co-exist on campus, I met with Dr. Sue Opp (Biology), who heads the Environmental Science Program. I believe the two programs are already sufficiently distinct to remain viable. But they appear to be diverging toward areas of secondary strength. Both serve the university, draw from different pools of students, and should be supported.

The department should carefully consider whether advertising six “Areas of Specialization” (on the web site and printed brochures) is the most productive and effective course of action. The areas currently listed include: California and the West, China and Southeast Asia, Water and Energy Resources, Sustainable Development, Geographic Information Systems (GIS), and Environmental Impacts and Solutions. In my view, this may create confusion in students seeking a major. They may reasonably wonder how these areas function. Are they a “minor” requiring certain specific courses or an ad hoc descriptor? Given that the current number of majors is somewhat low, I recommend that the department consider either reducing these “areas” or eliminating them altogether on the web site. At present, they appear to me to be a barrier to attracting majors. Reducing or eliminating the “areas” may help clarify the identity of the department for prospective majors and attract more students. Students will retain a sense of these thematic “areas” by scanning the department’s course offerings.

The current efforts to revamp the curriculum for the B.A. and B.S. in Geography are very sound, though I would caution against the total number of units (see below). The documents reveal a solid grasp of the themes, content, and skills at the center of each degree. I believe this revamping is a great improvement over the previous curriculum. Students receive excellent preparation. The quarter system is structurally challenging given the short duration of terms. The use of numerous courses in subjects such as World Regions, Social and Cultural, Sustainability, Global Studies, and others is a highly effective way of contending with time constraints.

However, I recommend that the department consider reintroducing/creating courses at the 1000 level. These intro classes serve as essential building blocks of a program and are an excellent source of new majors. At present, the program offers no freshman-level courses.

A total of 61 units are required for an undergraduate degree in Geography. This comprises about one-third of the total units needed to graduate, putting the program on a par with their geography peers at other CSU campuses and at other state universities. This total of 61 units is appropriate and any significant expansion should be carefully considered. There is a fine line between requiring rigor in a program and requiring so many units that a disincentive is created to becoming a major.

Sustainability

The department has achieved a prominent position on the issue of campus energy use and sustainability. The extraordinary achievements of Dr. Karina Garbesi in solar energy (spearheading the installation of the 1-megawatt solar-electric system on campus) and of Michael Lee in other elements of sustainability are truly impressive. I strongly suggest that the department continue its effort toward making sustainability a programmatic focus while continuing to push for sustainability to become a university and CSU system-wide reality.

Facilities

I strongly recommend that resources be allocated to creating a state-of-the-art geospatial laboratory with 40 work stations for the department. The existing geospatial laboratory is insufficient to meet their current needs and to provide a vital building block for growth. The current lab is crowded, marginally equipped, and much too small. Maps are stored here, creating clutter. The existing geospatial facility is hindering the growth of this excellent program. Experience with the discipline of Geography shows that a new geospatial lab could double the number of majors within 4-5 years.

Education and training in GIS and remote sensing is an essential core requirement for any program like this to expand. The national demand for GIS and remote sensing specialists is extreme. ESRI, the national software giant, has a shortage of 700 workers. Given demographic trends, 60% of the federal workforce will retire in the next 10 years, opening up unprecedented career opportunities for geographers and environmental studies students who have excellent geospatial skills. Careers with the U.S. Forest Service, Bureau of Land Management, Federal Highways, Housing and Urban Development, U.S. Census Bureau, EPA, U.S. Fish & Wildlife Service, and intelligence agencies such as the National Geospatial-Intelligence Agency are virtual certainties for students who gain a solid geospatial education at CSUEB.

The new laboratory would attract new majors and generate many student credit hours. At New Mexico State University, we created a new 40-seat geospatial lab and our number of majors grew from 44 to 92 in three years. Students are practical. Seeing the laboratory gave them a tangible sense of real career possibilities if they majored in geography. We also used the new lab to attract external funding through federal agencies and NSF applications.

The department at CSUEB already has an ESRI Certificate Program that gives students official recognition for their geospatial competence. However, with only 50 majors combined, this opportunity is significantly under-utilized. I believe this is largely because of the lack of facilities.

I urge the university to invest in the Department of Geography and Environmental Studies by creating a new geospatial laboratory. This is a fine department with vast potential to expand. A new laboratory is the missing ingredient in creating a department with over 100 majors, an excellent record of job placement, and a reputation across the Bay Area as a geospatial center of excellence.

Student Services

Advising is excellent in the department. Students I spoke with feel appreciated and well-guided through their programs. Small class sizes in upper-division specialty courses allow students in the program to build a sense of community. Ideas and opinions shared with the chair in exit interviews have resulted in curricular and scheduling improvements. I suggest that the department build on their ESRI Certificate program by pursuing other workforce development options for students. Hiring students to do basic mapping and land analysis work is a fine way to lead them to excellent careers. Internships (and Cooperative Education) with agencies are already pursued in the department but might be expanded. Faculty expressed some concern with increasing the quality of majors. This is a perception held by faculty all over the country. Once again, a new geospatial laboratory would go far in addressing this issue. Quality students are attracted to quality facilities.

Promotion and Tenure Policies

There is a lack of clarity on Promotion and Tenure policies in the department and, it appears, within the entire university. I advise that the department craft a Functions and Criteria Statement which lays out the rubric for measuring progress toward promotion and tenure from their perspective. Teaching, research, and service achievements should be linked to clear statements of criteria for P&T evaluation. The ranking of importance of publications – books, international journals, national journals, regional journals, research reports, book reviews etc – could be provided to clarify how research

publications are weighted. Similar rubrics for teaching success and service obligations could be created. At present, there is significant uncertainty about the Promotion and Tenure evaluation system. The department might consider opening a conversation on campus about this entire issue. Absent clarity in this matter, faculty are left trying to imagine how they will be evaluated.

Grants and Contracts

Given the normal 9-course teaching load, faculty members have little time for writing and implementing grants and contracts. This is understandable. There are also apparent disincentives for faculty to receive grants, since they usually cannot financially benefit from these funds. I strongly recommend that CSUEB amend any policies that stand in the way of faculty receiving summer salary and/or supplementary compensation from external funding.

Any university that wishes to have grants come in the door simply must allow faculty to receive compensation. Summer salary is a regular practice on most universities. Supplementary compensation can also be received up to 125% of a full-time (9-month) salary according to federal circulars. CSUEB is hindering the success of its faculty by not encouraging the seeking of external grants.

In any case, there may be opportunities to write grant proposals that serve the teaching mission of the department by hiring students to do research. Graduate student funding can be achieved in this way. Undergraduates can be hired in the geospatial lab to do digitizing or other basic tasks and thereby gain hands-on experience. I suggest that the faculty consider whether the strategic use of grants and contracts could further their departmental mission. I also strongly suggest they begin a dialog with the President and Provost of CSUEB to determine how financial compensation can come to faculty and the department. Some external funding (NSF, smaller buy-outs) have been received by the department but these seem to be exceptions. Grants and contracts are also a way for faculty to supplement their incomes – a practical matter given salary stagnation within the CSU system.

Alumni Involvement

Greater contact with alumni of the department is needed. These graduates can help in development efforts and in networking to place students in jobs. I suggest that the department compile a database on alumni of the undergraduate and graduate programs. An annual newsletter could be produced in desktop format and distributed either in paper form or electronically to alumni. Priorities for funding, faculty achievements, student success, and general news are often of great interest to graduates.



CALIFORNIA STATE UNIVERSITY

E A S T B A Y

*DEPARTMENT OF
GEOGRAPHY & ENVIRONMENTAL STUDIES*

MEMORANDUM

DATE: April 21, 2008

TO: 2007-08 Committee on Academic Planning & Review (CAPR)

FROM: Professor David Larson, Chair

SUBJECT: Response to Outside Reviewer's Report

This Memorandum provides responses to the Outside Review of our programs by Dr. John B. Wright, Professor and Chair of the Department of Geography at New Mexico State University. Professor Wright was chosen in large measure because he has the academic and professional experience to evaluate both the Geography and Environmental Studies programs; is serving as a department chair of a thriving department; and works in a state-supported university system. It was also beneficial that his institution is demographically similar to ours, which is to say NMSU has a significant undergraduate population of minority students, many of them the first in their families to attend college. Experiences at his university obviously informed his assessment of our programs.

Professor Wright's recommendations, suggestions and criticisms fall within seven broad categories: Faculty Additions, Curriculum, Sustainability, Facilities, Student Services, Department and University Policies, and Alumni Involvement.

Faculty Additions

Recommendation: While praising the quality of the faculty and noting their breadth of interests, Prof. Wright recommends that the department search for an assistant professor with expertise in cultural and urban geography and a regional specialization in Africa or Europe.

Response: Our Geography program is alone among our peer institutions in being without a tenure-track faculty member who lists cultural *or* urban geography as a major field of

interest. Courses in these areas -- critical to a fundamental grounding in Geography and useful to other majors as well, e.g. Environmental Studies, International Studies, Liberal Studies, Anthropology -- have been taught primarily by lecturers and occasionally by regular faculty who agree to teach classes well outside their primary fields of interest and expertise. There is demand on campus for cultural geography's subject matter. As our reviewer notes, the department's introduction to cultural geography course (Geog 2300), which is part of the General Education program (Area D), now draws in excess of 200 students annually, even though only one section per quarter is taught. Urban geography, on the other hand, has been neglected largely because the current faculty's teaching responsibilities are elsewhere and the department's lecturer allocation has been insufficient to support coverage in this area. The revamped Geography BA/BS program calls for departmental expertise in both of these areas (cultural systems, sustainable cities). The regional specialization in Africa or Europe augments an expanded global studies curriculum. This position comports with the language in one of the *CSUEB Academic Plan's* "Programs of Distinction": Global Awareness and Understanding.

The department would benefit with the addition of a broadly trained human geographer with expertise in urban-cultural geography. A working interest in some combination of urban planning, transportation planning, sustainable cities, inner city issues and developing world cities would be expected. The curriculums for both Geography and Environmental Studies would be significantly strengthened.

Recommendation: In the near future a second position, an environmental specialist with a focus on geospatial techniques, should be allocated. This position is keyed to an increase in the number of majors that would follow an expansion in the department's GIS/remote sensing laboratory (explained below under Facilities).

Response: If Professor Wright is correct in his belief that an expanded GIS lab will generate a sufficiently large increase in the number of majors, then a position of this sort or something related could be strongly argued. But given current fiscal realities, all this appears to be several years away. Much can happen to an academic unit (retirements, separations) in that time frame, so the focus of the "next" addition to the faculty will become clearer in the next two years.

Curriculum

Recommendation: That the department be allocated two paid graduate teaching assistantships in order to provide teaching assistance for geospatial labs and other courses.

Response: If funding for an expansion of the GIS lab can be found, and the lab regularly fills with students, funds for graduate teaching assistantships can be found as well. No question the quality of our graduate program would be enhanced with the addition of paid assistantships.

Recommendation: That the department should carefully consider whether advertising six “Areas of Specialization” (on the web site and printed brochures) is the most productive and effective course of action.

Response: Although not framed as a direct criticism, the spirit of this recommendation is critical. And for good reason, as Professor Wright has identified a potential stumbling block in the department’s attempts to advertise the strengths of its programs. The “Areas of Specialization” referred to are located directly below the Degrees Offered section at the Department Fact Sheet link. It was intended that these be identified as individual areas of expertise by the current faculty. But there is no indication of that. A visitor to the site or a reader of the printed version of the Fact Sheet could, as Professor Wright suggests, take these “Areas of Specialization” to mean “minors” or something else entirely that could be an obstacle to attracting new students. He recommends that they be reduced or eliminated. We will reconfigure the Fact Sheet appropriately in the near term and, once the current program revamps receive approval, use that space to highlight improvements in both programs.

Recommendation: That the department consider reintroducing/creating courses at the 1000-level.

Response: We have discussed this several times in recent years and have, I believe, made a commitment to creating a new 1000-level course in the near future. Prior to implementation of the General Education freshman and sophomore cluster programs, Introduction to Geography (Geog 1000) annually attracted 400-500 students. From this pool of largely undeclared undergrads, we drew many of our majors. Similarly, Introduction to the Environment (Environmental Studies 2000) produced very large enrollments, which also served as a source of majors. (There has never been a 1000-level Environmental Studies course on this campus). With the elimination of the sophomore clusters, ENVT 2000 was accepted into the new General Education program. Enrollments are once again strong (more than 100 per quarter). The time has come to (re)create a 1000-level Geography course, either modeled along the lines of successful “introduction to the discipline” courses in Anthropology, Sociology and Economics, or centered on the theme of world regional geography. We have the faculty resources at present to offer *one* 1000-level course.

Recommendation: [The] total of 61 units is appropriate [for the undergraduate degree in Geography] and any significant expansion should be carefully considered.

Response: This recommendation has been carefully considered. Much work and discussion has gone into revamping both the B.S. and B.A. programs and to making them better conform with the imperatives of the 21st century – “one in which technology permeates all aspects of daily life” and where “local and global concerns must be better understood and more effectively balanced.” At this point, the newly designed degrees would require 73-76 units depending on the combination of courses selected. That’s 12-15 units or 3 or 4 courses more than is presently required. Roughly, that’s one academic quarter of additional coursework within the major. Arguments for the increase in units are pedagogically sound.

Yet Professor Wright's caution -- to recognize that there is a point where comprehensiveness can create a disincentive to becoming a major -- also merits further discussion. The number of required units will be increased. But will a major of 73-76 units best serve the department in its attempt to grow the number of majors? We need one more round of discussion on this issue.

Sustainability

Recommendation: That the department continue its effort toward making sustainability a programmatic focus while continuing to push for sustainability to become a university and CSU system-wide reality.

Response: The revamped curriculums reflect the critical importance to the department of sustainability studies, ranging from the new Sustainable Resource Management Option in the Environmental Studies program to a Sustainability Studies specialization within the Geography BS program. Furthermore, a stand-alone Sustainable Resource Management Certificate, whose prerequisites are simply an AA degree and STAT 1000 (Elements of Probability and Statistics) or equivalent is being proposed.

Professor Karina Garbesi and Professor Michael Lee, through their courses and student-centered projects and internships and by the force of example, have led and continue to lead the university down a path toward greater sustainability. CSUEB's *Academic Plan*, in the section on "Programs of Distinction," lists Environmental Awareness and Sustainability as an area that will be maintained and emphasized in the coming decade.

Facilities

Recommendation: That resources be allocated to creating a state-of-the-art geospatial laboratory with 40 work stations for the department. Experience with the discipline of Geography shows that a new geospatial lab could double the number of majors within 4-5 years.

Response: This recommendation has to be intended for a level of administration beyond the department or even the College of Letters, Arts, and Social Sciences, given the fiscal realities associated with building and equipping a new geospatial lab. It should be pointed out here that the department's present lab, which Professor Wright deems "insufficient to meet current needs and to provide a vital building block for growth" itself was a state-of-the-art facility when completed in 1999. The department's chair (Professor Larson), working through the Provost's office, acquired a capital improvement grant of \$60,000 from the Chancellor's Office. Unused interior space on the 3rd floor of Meiklejohn Hall was configured into an 800-sq-foot lab with 15 work stations. Now there are 17 work stations shoehorned in, far below the 40 envisioned. The present lab, due to infrastructure limitations (wiring, etc), cannot

support anywhere near that many machines, so either the entire building's computing infrastructure would have to be upgraded or a new space on campus for a lab must be found. In all likelihood, it would not be in Robinson Hall, whose first-floor classrooms are widely used by departments across the campus. With the impending loss of classroom space in Warren Hall and no new academic buildings on the drawing board, finding space for the new lab will be a challenge. The higher administration (Provost's office) would have to support installing the recommended facility if adequate space is found. That said, there is data nationally which show departments with these labs experience sustained growth in majors and external funding. The anticipated retirement of 60% of the federal workforce within the next decade is a widely cited figure. Many of their replacements will need to be trained in geospatial techniques. Our Geography and Environmental Studies students presently acquire a select set of geospatial skills. But with a bigger and better facility, future students in our programs and students from elsewhere on campus will receive a far richer geospatial education. Among the Bay Area CSUs, we could become a dominant player in this emerging field.

Bottom line: It would take the full support of the CSUEB administration to make this recommendation operational.

Student Services

Recommendation: That the department builds on its ESRI (Environmental Systems Research Institute) Certificate program by pursuing other workforce development options for students.

Response: Professor Wright is referring to the department's Certificate in Cartography and GIS, a 20-unit program that prepares students in methods of data collection, interpretation and analysis as well as in the design, production and reproduction of maps. Students who successfully complete the program's GIS courses receive a certificate from ESRI, the world's leading GIS software company, because Professor Gary Li is himself an ESRI-certified instructor. The recommendation appears to call for increasing the department's connections with government agencies and the private sector so that our students can do certain kinds of basic contract work. In recent years, Professor Li has done exactly that with the City of Hayward's planning department and the East Bay Municipal Utilities District (EBMUD) among others. Our reviewer recommends cultivating *more* relationships with potential employers and getting them to funnel *more* work to the university and hence to our students. A measured collective response from the faculty might be along the lines of "we will try."

Department and University Policies

Recommendation: That the department craft a Functions and Criteria Statement which lays out the rubric for measuring progress toward promotion and tenure from their perspective.

Response: Stemming from issues that derive from departmental Promotion, Tenure and Retention committees which use faculty from outside the department who are not familiar with the academic culture and expectations of the host department, discussions on this general topic have already begun within faculty governance bodies. It is likely that some form of a functions and criteria statement will become a departmental requirement across the campus. By following this recommendation and linking teaching, research and service achievements specific to our fields to criteria for promotion and tenure, our department can become an early adopter rather than a unit reacting to a mandatory directive. Each of the department's six faculty members is tenured and has been promoted, but it would be useful to have a functions and criteria statement in place before making any further tenure-track hires.

Recommendation: That CSUEB amend any policies that stand in the way of faculty receiving summer salary and/or supplementary compensation from external funding. I also strongly suggest that [departmental faculty] begin a dialog with the President and Provost of CSUEB to determine how financial compensation (from grants and contracts) can come to faculty and the department.

Response: Our reviewer was shocked to learn of the restrictions placed on CSUEB faculty who seek and receive external funding and of the effect on departments which are not adequately compensated when regular faculty are on funded research leave. His university, New Mexico State, is of course a state-supported institution. But it has no barriers in place, as CSUEB does, that serve as disincentives for faculty to receive grants. There must be fundamental changes in university policies in this area. Our relatively new (1-yr plus) Provost has given indications that such changes are absolutely necessary for the university's faculty to seek and secure extramural funding. This recommendation is aimed beyond the scope of the department. But should there be changes in our present policies, departmental faculty would be poised to ramp-up pursuit of external funding.

Recommendation: That the faculty consider whether the strategic use of grants and contracts could further their departmental mission.

Response: Frankly, this is a discussion the faculty has never had. While the pursuit of grants and contracts has always been encouraged, it has been in the context of an individual faculty member having an opportunity to add to his or her professional achievements. Whenever one of us is successful in acquiring a buyout of teaching time, other faculty (in a one-for-all, all-for-on sort of way) work to cover courses typically taught by the grant-holder and often make changes in their own teaching schedules. But we've not discussed just how, exactly, the use of grants and contracts might actually benefit our programs and therefore the departmental mission. This will be a future topic of discussion.

Alumni

Recommendation: [That] greater contact with alumni of the department is needed; that the department compile a database on alumni of the undergraduate and graduate programs.

Response: Agreed. Record keeping of the alumni has largely been the responsibility of the chair who has compiled a dossier of business cards of graduates of the Geography and Environmental Studies programs. Alumni contact with the department has typically been in the form of alums “checking in” to inform about a new job, an impending move, or a request for student interns at their present place of employment. Production of an annual newsletter will become a department priority.

Response to Overall Assessment

Professor Wright’s Outside Review has a decided “big picture” feel, which was to be expected from him. He is a nationally known figure in his discipline. An award-winning author and one of the leading practitioners in the field of conservation easements, he has lectured at universities throughout the country. Campus visits have given him a broad perspective of what works and isn’t working in departments in our disciplines. His strong recommendation that a state-of-the-art geospatial laboratory be created here is largely based on experiences at his university. The number of majors at NMSU has climbed from 40+ to nearly 100 in the first four years after the lab was built; the growth curve shows no signs of tapering off. He is absolutely convinced that their new geospatial lab has driven not only a doubling in the number of majors but his department’s increased visibility on campus and within the region. He’s observed similar results at other universities. But he is well aware that support for a new geospatial lab for our department must come from a level of administration beyond the College of Letters, Arts, and Social Sciences. That is why he requested an opportunity to speak with someone who reports directly to the President during his campus visit. (He met with the President’s Chief of Staff.)

His recommendation for a new faculty position in some combination of urban-cultural geography (with a regional specialization in Africa or Europe) reflects his assessment of the most pressing need of the department given the recent restructuring of both undergraduate majors and the MA in Geography. The position should be broadly written to attract candidates whose expertise would contribute to both the Geography and Environmental Studies programs (e.g. sustainable cities). This recommendation also comports with the mandate that, whenever possible, new positions be in areas of the curriculum where a majority of the courses are taught by lecturers.

**Five-Year Plan of the Geography BS, BA, MA
& Environmental Studies BA Programs**
at
California State University, East Bay
2008 – 2012

(Subject to modification)

A primary purpose of the Five-Year Plan is for academic programs to anticipate and plan for the changes necessary to maintain currency and even leadership in their respective fields. This document describes what the Geography BS/BA, MA and Environmental Studies BA programs intend to do during the five years from 2007/08 through 2011/12.

A draft of this Plan was provided to the Outside Reviewer, Dr. John Wright, Professor and Chair of Geography at New Mexico State University. After receiving Professor Wright's report, this Plan has been amended to incorporate some of his recommendations. In forming this Five-Year Plan, the faculty of the Geography BS/BA, Geography MA and Environmental Studies BA programs, have addressed the four core areas (**Curriculum, Students, Faculty, and Resources**). Standard CAPR questions, where relevant, serve as prompts to the following responses. As suggested in 05-06 CAPR 9, each of the questions addressed in this plan considers the following, where relevant.

- a) The expected action/change to be taken, e.g. revision of curriculum, addition of faculty, purchase of equipment, etc.
- b) A specific time line for when the task will be completed.
- c) Person(s) responsible for carrying out the needed change.
- d) Anticipated cost.

A. Curriculum

*What curricular changes do our programs envisage during the next five years?
What developments are likely to cause our programs to change the curriculum?*

Begun two years ago and worked on extensively during the current academic year, a revamping the Geography BS/BA and MA and the Environmental Studies BA programs is nearly complete. The curricular approval process is about to begin.

Our previous planning document (dated October 2005) promised that a "revamping of the BS program in geography will commence in AY 2005-06. Prof. Lee and Prof. Li will take the lead in modifying the existing program to make it more 'contemporary' – at least in realm of requiring more so-called techniques courses and courses on resource management (energy and water) in which the department justifiably prides itself. We also anticipate the revamped major will require (as opposed to recommend) additional courses

in world regions, thereby providing this program with a more comprehensive international focus.”

Happily all of this – and much more -- has occurred. Under the direction of Prof. Michael Lee, both the BS and BA programs have been substantially restructured. A description of how the two programs overlap and diverge follows the text of this section. Included is a breakdown of the so-called “specialty studies” for each degree and two new 20-unit Certificates (in Sustainable Resource Management and in Global Studies) that join the department’s longstanding Certificate in Cartography and Geographical Information Systems. The Minor in Geography has been reworked as well, yet remains at 36 units. The Outside Reviewer enthusiastically supported the restructuring of the degree programs but questions the increase in major requirements from the present 61 units to the proposed 73-76. The faculty is committed to significantly enhancing the quality of these degree programs, as reflected by the proposed changes. A possible modest lengthening the time-to-degree appears to be an acceptable trade-off.

Our previous planning document expressed a desire to fundamentally alter the Geography MA. Specifically, “an expressed goal of the faculty is to attach to the title of the MA program some derivation of the word ‘Environment’ We firmly believe that this change will not only validate the existing graduate program by formally recognizing what we already teach in many of our seminars, but would allow us to market our collective expertise to an entirely different group of post-baccalaureate students seeking a graduate program with a focus on environmental management or sustainable development issues... inquiries by prospective graduate students has convinced us that ‘Geography’ standing alone does not resonate with many students who are seeking a degree that explicitly identifies with ‘Environment’ In AY 2005-06, the faculty as a whole will explore whether this structural change is worth pursuing at this time and will establish a timetable for formally proposing the change.”

It took us one year longer than anticipated, but in AY 2006-07, it was decided, largely through consultation with AVP of Academic Programs Carl Bellone, that the effort required to re-title a graduate program was too complex for the department to pursue at this time. Consequently, the Geography MA program has been reworked to incorporate the academic interests of students who seek a graduate education with an environmental focus. A detailed description of the MA program revamp follows this section.

Our previous planning document, which described significant modifications to the lower-division and upper-division core of the Environmental Studies program approved in Spring 2005, also recognized that restructuring work remained. “The second (more complex phase) phase, which like the first will be spearheaded by the Chair and Prof. Karina Garbesi in AY 2005-06 (and perhaps beyond), involves retooling the various Options. The current major includes five Options, each consisting of 20-24 units. ENVT majors select one Option or ‘area of concentration.’ We plan to reduce the number of Options from five to three, one of which (Environmental Resource Management) will consist of a significantly different assemblage of courses. Since the Options consist of courses offered by well over a dozen different departments across all four colleges, this

change will incorporate new expertise on campus (in the form of recently hired faculty university-wide) in topics germane to the evolving discipline of Environmental Studies.”

As with the Geography degree programs, the revamp of Environmental Studies is virtually complete. Prof. Garbesi assumed the lead and did most of the “heavy lifting” associated with several changes to the core, a thorough retooling the Options and a reworked Minor. The existing five Options have indeed been reduced to three, simplifying an unnecessarily complex part of the major. Furthermore, the new set of Options -- 1) *Sustainable Resource Management* (slightly different title than *Environmental Resource Management* identified in the previous plan.); 2) *Environment and Social Justice*; and 3) *Physical Environment* – include potential courses from ten different departments or programs outside our own, thus preserving the multidisciplinary spirit of the Environmental Studies major. A significant aspect of the revamp is a reduction in the overall number of units in the major, now 85-88, down from 100-105. We view this as a much-needed correction. The proposed program is more contemporary and less diffuse without sacrificing its traditional rigor. Our Outside Reviewer applauded the 15-unit reduction in the size of the major (while at the same time questioning Geography’s proposal to increase its unit load).

The program modifications described above and on the pages that immediately follow should serve the department extremely well over the next five years. An enormous amount of thought and discussion over several years has led to the proposed changes. From the vantage point of 2008, we view these revamped programs as ideal vehicles for CSUEB students who wish to pursue a major in our fields. Nothing short of a catastrophic reduction in the number of faculty in a short time frame would be cause for changing the curriculum.

Discuss prospects and changes relevant to the Concord campus.

The department currently offers one or two courses at Concord each academic quarter. When two are offered, one will be daytime the other at night. These courses are desired by Liberal Studies majors and typically have GE distinction as well. Enrollments have been constant and good. If we were to add another faculty member, an additional course or two per quarter would be taught at Concord.

What changes are planned for General Education?

The department is well represented in the GE program, both lower- and upper-division, and in both Science (B, B6) and Social Science (D, D4). Proposed new upper-division courses on Africa, Europe and Global Economic Patterns will seek G.E. designation.

Any relevant changes to the multicultural learning experience?

Geog 3200 (Asian Americans: Spatial Disparity and Multiculturalism), a well-received new course, will be offered more frequently by Prof. Woo. A new regional course on Africa will be a useful addition to the multicultural learning experience.

GEOGRAPHY BS/BA PROGRAM REVAMP

This reworking of the BS/BA degree program in Geography creates a curriculum of study in which graduates are given an holistic perspective on their world and a set of skills with which they can enter the workforce in a range of capacities. Specializing in geospatial studies, global studies, or sustainability studies, graduates pursuing the BS program are equipped to embrace a world in which, for the foreseeable future, technology will permeate all aspects of daily life; people and processes will remain highly interconnected and interdependent; and environmental, economic and social systems will be challenged by expanding human numbers and human consumption. Graduates of the BA program are equipped with the broad base of socio-cultural understanding to take a valuable place in society as educator, facilitator and administrator of complex communities in which local and global concerns must be better understood and more effectively balanced.

At the lower division level, each graduate is provided with a broad-based foundation of geographic study that leaves them geographically literate and spatially aware, with adequate knowledge of physical and cultural systems, world regions and spatial tools. This foundation can be gained as a fresher and sophomore at CSUEB or by taking articulated, equivalent courses at any of the California Community Colleges offering Associate of Arts courses in Geography. In order to facilitate transfer to a four-year degree program, CSUEB faculty work closely with Community College counterparts in our region to disseminate our curriculum and assist in the articulation process.

At the upper division level, a core of required courses have been carefully selected to provide all our graduates with a curriculum that delivers the necessary knowledge and preparation to be forward looking, have a keen understanding of place, its meaning and significance, and possess the spatial, literary and field study skills needed to succeed in many professions, not least geography.

Each graduate, in addition to completing a foundational program and a core curriculum program, will select and complete a specialty field of study designed to facilitate their movement into successful and valued career paths. In the BS program, the specialty packages are in the areas of geospatial studies, sustainability studies, and global studies – each require the completion of 16-18 units of geography classes under the supervision of an advisor. The total number of units required for graduation is thus 73-76 depending on the combination of courses selected. For each of these areas, a related certificate program is available that non-Geography majors can take to add to another major, consisting of 20 units of geographic study – these are the Certificate in Cartography and GIS, the Certificate in Green Technologies¹ and the Certificate in Global Studies². Geography majors can also take additional geography classes and add this certificate to their degree. A minor is offered in Geography which can either follow a Humanity and Culture emphasis, or a Resources and Environment emphasis for a total of 36 units.

¹ Exact title to be confirmed when certificate is approved by the Senate.

² Exact title to be confirmed when certificate is approved by the Senate.

Lower division foundation courses (16 units)

- Physical systems – Physical Geography GEOG 2100 (4)
- Cultural systems – Cultural Geography GEOG 2300 (4)
- World regions – Geography of World Development GEOG 2400 (4)
- Spatial tools – Introduction to Maps GEOG 2310 (4)

Upper Division core curriculum courses (41-42 units)

1. Forward looking component – resource sustainability, the climate change imperative, the urban environment
 - Sustainable Resources Management GEOG 3000 (4)
 - Climate Change GEOG 3120 (4)
 - Sustainable Cities GEOG 3340³ (4)
2. Place based component – the global template
 - Physical Landscape Analysis GEOG 3115 (4) or Biogeography GEOG 4130 (4)
 - Geography of the United States and Canada GEOG 3500 (4) or Geography of California GEOG 3505 (4)
 - Geography of a World Region (any one of GEOG 3510⁴, 3540, 3550, 3520⁵ or 3525⁶) (4)
3. Geographic skill sets – literacy, numeracy, spatial systems, and field study
 - Literature and Research Methods GEOG 3450 (5)
 - Environmental Resource Analysis ENVT 3401/GEOG 3401 (4)
 - Essentials of GIS GEOG 3030⁷ (4)
 - Field Course in Physical-Biotic Geography GEOG 4125 (4) or Applied Field Studies ENVT/GEOG 3480 (4) or Environmental Field Studies ENVT 4300 (5)

Specializations/Electives

BS Degree specialty studies

A. Geospatial studies (16-18 units)

Four or more of the following

- Applications of GIS GEOG 4605⁸ (5)

³ A combination of GEOG 3330 Urban Geography and GEOG 3340 Urban Planning – GEOG 3330 will be eliminated

⁴ Combined course – Geography of Latin America and the Caribbean (from GEOG 3510 and GEOG 3515)

⁵ New course – Geography of Africa

⁶ New course – Geography of Europe

⁷ Modified course – a detailed Introduction to GIS, GPS, etc. – would replace GEOG 4600 in the curriculum and result in an introduction to maps and GIS at the 2000 level, a foundation course in GIS at the 3000 level and a specialized course in GIS at the 4000 level – GEOG 3030 would become the prerequisite for GEOG 4605. This change needs to be reflected in the Certificate in Cartography and GIS.

⁸ Name change to reflect that this is the advanced GIS class following on from Essentials of GIS – is project based use of GIS. Prerequisite will be GEOG 3030.

- Air-Photo Interpretation GEOG 3410 (4)
- Cartographic Principles and Graphic Communication GEOG 3600 (4)
- Computer Cartography GEOG 3605 (5)
- Remote Sensing of Earth Environments GEOG 4425 (4)

Elective

- Cooperative Education GEOG 3898 (1-4 units of internship)
- Issues in Geography GEOG 3999 (4)
- Independent Study GEOG 4900 (1-4)

B. Sustainability studies (16-18 units)

Required

- Sustainable Development GEOG 4330 (4) – capstone

Three or more of the following

- Energy and Society GEOG 4320 (4)
- Water Management GEOG 4350⁹ (4)
- Watershed Management GEOG 4355 (4)
- Sustainable Food and Agriculture GEOG 3320¹⁰ (4)
- Green Business MGMT ****¹¹ (or other approved class on Sustainable Business) (4)
- Cooperative Education GEOG 3898 (1-4 units of internship) or Internship in Environmental Studies ENVT 4910 (1-4 units of internship)
- Issues in Geography GEOG 3999 (4)
- Issues in Environmental Studies ENVT 3999 (4)
- Independent Study GEOG 4900 (1-4)

C. Global studies (16-18 units)

Four or more of the following

- Sustainable Development GEOG 4330 (4)
- Global Economic Patterns GEOG 3310¹² (4)
- Geography of Latin America and the Caribbean GEOG 3510(4)
- Geography of China and Japan GEOG 3540(4)
- Geography of South East Asia GEOG 3550(4)
- Geography of Africa GEOG 3520¹³ (4)
- Geography of Europe GEOG 3525¹⁴ (4)
- Any approved course from a related field that has an emphasis on globalization or world systems e.g. international business or marketing, international studies, this includes any advanced-level language class (4) – note that this course could also meet GE requirements as appropriate or

⁹ Name change from Water Resources and Management

¹⁰ Would be renamed from current Geography of World Agriculture with a new course description as previously stated

¹¹ New class – is being developed by Greg Theyel in Dept. of Mgmt. and Finance, CBE

¹² New class – to be developed

¹³ New class – to be developed

¹⁴ New class – to be developed

- Participation in a CSU year-long Study Abroad program (or other approved CSUEB year-long Study Abroad program) – any four geography classes taken while overseas e.g. New Zealand, UK, Chile – and approved by the department will be counted as satisfying this requirement (16).

Elective (2-4 units)

- Cooperative Education GEOG 3898 (2-4 units of internship)
- Issues in Geography GEOG 3999 (4)
- Independent Study GEOG 4900 (1-4)

BA Degree specialty studies (16-18 units)

The BA graduate can select from a full range of courses (if not already taken as required courses) offered by the geography program to achieve a required depth and breadth of geographic knowledge

Social and Cultural electives (4-8 units)

- Economic and Resource Geography GEOG 2310 (4)
- Global Economic Patterns GEOG 3310 (4)
- Asian Americans GEOG 3200 (4)
- Sustainable Food and Agriculture GEOG 3320¹⁵ (4)
- Historical Geography of North America GEOG 3360 (4)

World Regions electives (4-8 units)

- Geography of the United States and Canada – GEOG 3500 (4) or Geography of California – GEOG 3505 (4) (whichever already not taken in the core)
- Geography of Latin America and the Caribbean GEOG 3510(4)
- Geography of China and Japan GEOG 3540(4)
- Geography of South East Asia GEOG 3550(4)
- Geography of Africa GEOG 3520 (4)
- Geography of Europe GEOG 3525 (4)

Physical and Resource electives (4-8 units)

- Sustainable Development GEOG 4330 (4)
- Water Management GEOG 4350¹⁶ (4)
- Energy and Society GEOG 4320 (4)
- Watershed Management GEOG 4355 (4)
- Physical Landscape Analysis GEOG 3115 (4)
- Biogeography GEOG 4130 (4)

Elective

- Cooperative Education GEOG 3898 (1-4 units of internship)
- Issues in Geography GEOG 3999 (4)
- Independent Study GEOG 4900 (1-4)

¹⁵ Would be renamed from current Geography of World Agriculture with a new course description as previously stated

¹⁶ Name change from Water Resources and Management as previously stated

Not included in this list currently in our catalog

- Introduction to GIS GEOG 2600
- Urban Geography GEOG 3330 and Urban Planning GEOG 3340 – amalgamated into Sustainable Cities GEOG 3340
- Field Regional Geography GEOG 3405
- Geography of Mexico, Central America and the Caribbean Islands GEOG 3510 and Geography of South America GEOG 3515 – amalgamated into a single course Geography of Latin America and the Caribbean GEOG 3510
- Introduction to GIS GEOG 4600 – this class will now be satisfied by GEOG 3030 which will become the intermediate GIS class, with GEOG 2400 offering basic introductory instruction on maps, GIS and GPS.

Note that any BS or BA graduate who wishes to can take additional courses to get one of the three certificates that will be offered through the Geography Department.

CERTIFICATE PROGRAMS

Certificate in Cartography and Geographical Information Systems (20 units)

Select at least 20 units from the following:

- Essentials of GISGEOG 3030¹⁷ (4)
- Air-Photo Interpretation GEOG 3410 (4)
- Cartographic Principles and Graphic Communication GEOG 3600 (4)
- Computer Cartography GEOG 3605 (5)
- Applications of GIS GEOG 4605¹⁸ (5)
- Remote Sensing of Earth Environments GEOG 4425 (4)
- Cooperative Education GEOG 3898 (1-4 units of internship in a Cartographic or GIS field – must be approved by advisor)
- Issues in Geography GEOG 3999 (4)
- Independent Study GEOG 4900 (1-4)

Certificate in Sustainable Resource Management (20 units)

Select at least 20 units from the following:

To be determined – see K. Garbesi for more information

Certificate in Global Studies (20 units)

Select at least 20 units from the following:

- Sustainable Development GEOG 4330 (4)
- Global Economic Patterns GEOG 3310¹⁹ (4)

¹⁷ Modified course – a detailed Introduction to GIS, GPS, etc. – would replace GEOG 4600 in the curriculum and result in an introduction to maps and GIS at the 2000 level, a foundation course in GIS at the 3000 level and a specialized course in GIS at the 4000 level – GEOG 3030 would become the prerequisite for GEOG 4605. This change needs to be reflected in the Certificate in Cartography and GIS.

¹⁸ Name change to reflect that this is the advanced GIS class following on from Essentials of GIS – is project based use of GIS. Prerequisite will be GEOG 3030.

¹⁹ New class- to be developed

- Geography of Latin America and the Caribbean GEOG 3510(4)
- Geography of China and Japan GEOG 3540(4)
- Geography of South East Asia GEOG 3550(4)
- Geography of Africa GEOG 3520²⁰ (4)
- Geography of Europe GEOG 3525²¹ (4)
- Any approved course from a related field that has an emphasis on globalization or world systems e.g. international business or marketing, international studies, this includes any advanced-level language class (4) – note that this course could also meet GE requirements as appropriate or
- Participation in a CSU year-long Study Abroad program (or other approved CSUEB year-long Study Abroad program) – any four geography classes taken while overseas e.g. New Zealand, UK, Chile – and approved by the department will be counted as satisfying this requirement (16).

Elective (2-4 units)

- Cooperative Education GEOG 3898 (2-4 units of internship)
- Issues in Geography GEOG 3999 (4)
- Independent Study GEOG 4900 (1-4)

MINOR IN GEOGRAPHY

A minor is offered in Geography which can either follow a Humanity and Culture emphasis, or a Resources and Environment emphasis for a total of 36 units.

A. Emphasis in Humanity and Culture

Required (20)

- Physical systems – Physical Geography GEOG 2100 (4)
- Cultural systems – Cultural Geography GEOG 2300 (4)
- World regions – Geography of World Development GEOG 2400 (4)
- Spatial tools – Introduction to Maps and GIS GEOG 2310²² (4)
- Essentials of GIS GEOG 3030²³ (4)

Electives (select at least four of the following – (16))

- Global Economic Patterns GEOG 3310 (4)
- Asian Americans GEOG 3200 (4)
- Historical Geography of North America GEOG 3360 (4)
- Geography of the United States and Canada GEOG 3500 (4)
- Geography of California GEOG 3505 (4)
- Geography of Latin America and the Caribbean GEOG 3510(4)

²⁰ New class – to be developed

²¹ New class – to be developed

²² Course will be modified and renamed to include reference to GIS and GPS systems

²³ Modified course – a detailed Introduction to GIS, GPS, etc. – would replace GEOG 4600 in the curriculum and result in an introduction to maps and GIS at the 2000 level, a foundation course in GIS at the 3000 level and a specialized course in GIS at the 4000 level – GEOG 3030 would become the pre-requisite for GEOG 4605. This change needs to be reflected in the Certificate in Cartography and GIS.

- Geography of China and Japan GEOG 3540(4)
- Geography of South East Asia GEOG 3550(4)
- Geography of Africa GEOG 3520 (4)
- Geography of Europe GEOG 3525 (4)
- Issues in Geography GEOG 3999 (4)
- Independent Study GEOG 4900 (1-4)
- Issues in Environmental Studies ENVT 3999 (4)

B. Emphasis in Resources and Environment

Required

- Physical systems – Physical Geography GEOG 2100 (4)
- Cultural systems – Cultural Geography GEOG 2300 (4)
- World regions – Geography of World Development GEOG 2400 (4)
- Spatial tools – Introduction to Maps and GIS GEOG 2310²⁴ (4)
- Essentials of GISGEOG 3030²⁵ (4)

Electives (select at least four of the following – (16))

- Environmental Impact Analysis ENVT 4100 (4)
- Economic and Resource Geography GEOG 2310 (4)
- Sustainable Resources Management GEOG 3000 (4)
- Climate Change GEOG 3120 (4)
- Physical Landscape Analysis GEOG 3115 (4)
- Biogeography GEOG 4130 (4)
- Sustainable Cities GEOG 3340²⁶ (4)
- Sustainable Food and Agriculture GEOG 3320²⁷ (4)
- Field Course in Physical-Biotic Geography GEOG 4125 (4)
- Applied Field Studies ENVT/GEOG 3480 (4)
- Environmental Field Studies ENVT 4300 (5)
- Environmental Resource Analysis ENVT 3401/GEOG 3401 (4)
- Energy and Society GEOG 4320 (4)
- Water Resources Management GEOG 4350²⁸ (4)
- Watershed Management GEOG 4355 (4)
- Sustainable Development GEOG 4330 (4)
- Issues in Geography GEOG 3999 (4)
- Issues in Environmental Studies ENVT 3999 (4)
- Independent Study GEOG 4900 (1-4)

²⁴ Course will be modified and renamed to include reference to GIS and GPS systems

²⁵ Modified course – a detailed Introduction to GIS, GPS, etc. – would replace GEOG 4600 in the curriculum and result in an introduction to maps and GIS at the 2000 level, a foundation course in GIS at the 3000 level and a specialized course in GIS at the 4000 level – GEOG 3030 would become the prerequisite for GEOG 4605. This change needs to be reflected in the Certificate in Cartography and GIS.

²⁶ A combination of GEOG 3330 Urban Geography and GEOG 3340 Urban Planning

²⁷ Would be renamed from current Geography of World Agriculture with a new course description

²⁸ Name change from Water Resources and Management

GEOGRAPHY MA PROGRAM REVAMP

This reworking of the MA degree program in Geography creates a curriculum of study in which post-graduate students are given a more systematic chance to develop forward-looking, advanced skills in the fields of geography and environmental studies. Recognizing the dual character of the department and the crossover of the faculty and curriculum between these complimentary fields, foundation courses and specialty seminars are offered to build on a broad base of environment and resources, global studies, and geospatial knowledge acquired at the undergraduate level. Recognizing that only a third of MA candidates come into the program from within the department and that several each year are attracted from disciplines other than geography and environmental studies, five pre-requisite courses (or their equivalent) are required before candidates are advanced to the "classified" graduate student status. These prerequisites include intermediate courses on geographical information systems, resource management and analysis, world regional geography, and cartography. As with the BS program in Geography, graduates from the MA program are equipped to embrace a world in which, for the foreseeable future, technology will permeate all aspects of daily life; people and processes will remain highly interconnected and interdependent; and environmental, economic and social systems will be challenged by expanding human population and human consumption.

The revamp attempts to give graduates a deeper appreciation of and skill set in applied geographic or environmental research, an opportunity to work with faculty in a mentoring capacity, and a range of seminars on contemporary, vital issues that can be tailored to a student's particular interests. Each student will be required to do advanced work in the area of resource management, geographical information systems and green technologies. Each will also receive a basic grounding in the history of geographical ideas; the unifying theories and philosophies that distinguish geography and its sub-genres from other disciplines and which give it its relevance in this rapidly changing, globalized environment.

The revamp also, through cross-listing several of these required courses with existing undergraduate courses, gives candidates scheduling flexibility to shorten their program completion time and the opportunity to interact with faculty and undergraduates at an advanced level. Pathways to graduation are also facilitated by the inclusion of a number of required courses that are, in effect, independent study courses which can be taken in addition to group taught courses. The Graduate Research Assistantship GEOG +++ (core elective) and Departmental/University Thesis GEOG 6909/GEOG 6910 (core required) are both special registration courses arranged one-on-one with a particular faculty member. Geographic Perspectives on World Resources GEOG 6001 and Advanced Field Studies GEOG 6480 are also special registration courses that are taken in conjunction with the undergraduate equivalents on which they build (namely Sustainable Resources Management GEOG 3000 and Applied Field Studies ENVT/GEOG 3480). GEOG 3000 is offered multiple times per quarter and online and by a variety of faculty, allowing for great flexibility to prospective students. In addition, students can, at any time, complete a Geographic Internship GEOG 6850 or an Independent Study GEOG 6900 in order to

advance their studies towards the required total of 45 units. Note that in the revamped MA program, the majority of units are now at the 6000 level although it is possible to complete up to 12 units of the degree taking specialized electives at the undergraduate level, based on the approval of the graduate advisor, in order to pursue a particular sub-specialization better acquired through upper-division undergraduate courses than through thematic graduate seminars. We will encourage our students to take as many of the 45 units as they can at the graduate, 6000-level.

A new and improved characteristic of the MA program is the more extensive and systematic emphasis on research. The degree now includes 17-20 units focused on acquiring research experience in the field of geography and the environment. This begins with two courses that can be taken in either order. One is Directed Reading 6&&&, which instructs students in advanced literature review through guided reading on selected topics. And the second is a choice between Advanced Field Research GEOG 6480, in which the candidate makes a significant contribution to the research work being pursued by faculty within an undergraduate applied field research course (for example, in examining a key issue such as greenhouse gas emissions or solar generation potential), or individual research work as a mentored Geographic Research Assistant GEOG 6+++.

Following these preparatory steps, research skills are consolidated by completing the Thesis Proposal Seminar GEOG 6010, in which students present and critique their research ideas with fellow students and faculty, and the special registration Departmental/University Thesis GEOG 6909/6010, during which they will actually conduct their own original research and for which they will receive credit on successful presentation and defense of their finished thesis.

Graduate program pre-requisites (20 units)

If candidates wish to enter the program without the required level of geographic preparation, they will be asked to complete the following undergraduate courses. These will not count toward the 45 units required for the masters program. Note that one of the core required seminars (Geographic Perspectives on World Resources GEOG 6001 (3)) can be taken at the graduate level in conjunction with the lower-division pre-requisite, Sustainable Resources Management GEOG 3000, on which it builds. However, to take GEOG 6001, it is necessary to first have completed GEOG 3000 with which it is paired. On applying to the program, the graduate advisor will assess the applicant's transcripts and determine whether these pre-requisites have been satisfied, allowing credit for equivalent courses and a waiver for professional experience as applicable.

- Geographical Information Systems - Essentials of GIS GEOG 3030 (4)
- Resources management and analysis – Sustainable Resources Management GEOG 3000 (4) and Environmental Resource Analysis GEOG 3480 (4)
- World Regional Geography – Any world regions course from the following: Geography of the United States and Canada GEOG 3500 (4), Geography of Latin America and the Caribbean GEOG 3510¹ (4), Geography of China and Japan

¹ Name change

- GEOG 3540 4), Geography of Southeast Asia GEOG 3550 (4), Geography of Africa GEOG 3520² (4), Geography of Europe GEOG 3525³ (4)
- Cartography – Cartographic Principles GEOG 3600 or Computer Cartography GEOG 3605

Graduate Program Core Requirements (29-37 units)

- History of Geographical Ideas⁴ GEOG 6000 (3)
- Geographic Perspectives on World Resources GEOG 6001⁵ (3)
- Green Issues GEOG 6***⁶ (3)
- Applications of GIS GEOG 4605 (if not already satisfied at the undergraduate level) (5)
- Research Using GIS GEOG 6605⁷ (4)
- Directed Reading GEOG 6&&&⁸ (3)
- Advanced Field Studies GEOG 6480⁹ (4) or Geographic Research Assistant GEOG 6+++¹⁰ (3-4)
- GEOG 6010 Thesis Proposal Seminar 6010¹¹ (3)
- Departmental/University Thesis GEOG 6909/GEOG 6910¹² (4-6)
- At least one seminar from the following: Human Impacts on the Natural Environment GEOG 6660¹³ (3), Applied Regional Geography GEOG 6500¹⁴ (3), Applied Physical Geography GEOG 6100¹⁵ (3), Environmental Planning GEOG 6780 (3)

Graduate Program Core Electives (8-16 units)

- Human Impacts on the Natural Environment GEOG 6660¹⁶ (3)
- Applied Regional Geography GEOG 6500¹⁷ (3)
- Applied Physical Geography GEOG 6100¹⁸ (3)

² New course – to be developed

³ New course – to be developed

⁴ Name change

⁵ New course – to be developed - Taken as a special registration course (including online) in conjunction with a scheduled offering of GEOG 3000, subject to approval of the instructor and the department.

⁶ New course – to be developed

⁷ New course – to be developed - Taken as a special registration course in conjunction with a scheduled offering of GEOG 4605, subject to approval of the instructor and the department.

⁸ New course – to be developed

⁹ New course – to be developed – core elective - Taken as a special registration course in conjunction with a scheduled offering of ENVT/GEOG 3480, subject to approval of the instructor and the department.

¹⁰ New course – to be developed – core elective

¹¹ New course – to be developed – pre-requisites GEOG 6&&& and GEOG 6480 or GEOG 6++++

¹² Pre-requisite GEOG 6010

¹³ Name change

¹⁴ Name change

¹⁵ Name change

¹⁶ Name change

¹⁷ Name change

¹⁸ Name change

- Environmental Planning GEOG 6780 (3)
- Geographic Internship GEOG 6850 (4-6)
- Independent Study GEOG 6900 (1-4)
- Issues in Geography GEOG 6999 (3)
- Undergraduate Courses – any appropriate 3000- or 4000-level approved by the graduate advisor

Explanation of Proposed Changes to the Environmental Studies Major Curriculum

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March 5, 2008

Overview

Several interrelated factors are driving the proposed changes in the Environmental Studies Major

1. **Changing offerings in partnering departments:** The Major includes coursework from many departments, whose curriculum has changed, and continues to change, significantly. Courses are dropped, prerequisites changed, and new potentially appropriate courses are added. This is confusing to students and has necessitated extensive substitutions on students' Major Checksheets, an increasingly burdensome task with the new automated degree audit. To address this problem, the Department is updating the core requirements and major options.
2. **An increasingly specialized field:** The field of environmental studies has become more sophisticated and specialized over time as foundational concepts have developed and expanded. This fact is driving two major changes in our curriculum offers (and in our strategic planning):
 - a. To deliver a robust environmental education, we must now integrate environmental concepts earlier into the erstwhile disciplinary foundational courses and we are doing so with greater depth and coordination in the interdisciplinary departmental offerings. Many of curriculum changes, discussed below reflect this goal.
 - b. The increasing specialization of the environmental fields has also encouraged the department to focus its own program more tightly around the core expertise of the faculty: sustainable resource management (with a focus on energy, water, and climate), globalization, and environmental justice. Happily, this focus aligns extremely well with Cal State East Bay's vision, mission, and goals, and the new Academic Plan, in which sustainability, globalization, and civic engagement are strongly highlighted. The changes in our handling of the options reflects our decision to support greater depth of study and specialization.
3. **Enhancing employment prospects for graduates:** Graduates seeking employment in the environmental fields have a higher chance of being offered a job, and a greater probability of succeeding in the job, not only if they have a specialized expertise within the field, but also if they have mastered useful analytical skills. This is clearly evident even for obtaining internships. For example, many students have responded to us that it was because of their recently acquired analytical skills (for example in spreadsheet analysis, mapping, or GIS) that they were offered a desirable internship. We have been increasing these skills components of the curriculum over time and continue to do so with this proposal. Adding those classes to the curriculum, while maintaining the major at a

reasonable unit limit, is another factor requiring that we further integrated interdisciplinary concepts holistically into the curriculum.

The following sections provide justification for the major changes.

Changes in Biology Requirements

Changes in the Biological Sciences curriculum are forcing us to drop the upper division biology core requirement and the Ecology/Life Sciences Option. BIOL 3310, which is currently required the upper division core for the Ecological Life Sciences Option students, now has 18-units of direct prerequisites, which themselves have prerequisites. This has proven prohibitive for our students, none of whom have elected to pursue the option in several years (indeed, since those prerequisites were imposed).

In addition, BIOL 3031, which was the course that the vast majority of our students took (the one required for all other options) is no longer being supported by the biology department. After extensive discussion with the chair of biological sciences we have been unable to find any alternative for this course. So, it is with great regret that we are forced to drop the upper division science requirement.

Because we greatly value the integration of biology concepts into the curriculum we will be accepting for transfer credit lower division courses in environmental biology (with a lab). Indeed, we would prefer that all of our students took this class, which is offered by some of our regional community colleges, but is not currently offered here. We will also continue to integrate critical biological concepts into our own curriculum including but not limited to ENVT 2000 and GEOG 3000.

Changes in Business Requirements

ECON 2310 will be dropped from the lower division curriculum and replaced with Economic and Resource Geography (GEOG 2310). There are two reasons for this: We want to integrate economic concepts into the curriculum focus (resource management, globalization, and social justice) earlier in the curriculum, to allow us to build on these concepts later, facilitating the development of greater depth and sophistication in the curriculum. Moreover, in the past 5 years, few students have opted to take the upper division Environmental Economics course, preferring to take the Environmental Ethics (the alternative course). Additionally, it is largely macroeconomic concepts that form the basis of ecological economics, a foundation for sustainable development, which is a major focus of our curriculum. Thus the proposed suite of courses actually service our sustainable resource management focus better (GEOG 2310, GEOG 3000 (Sustainable Resource Management), and optionally GEOG 4330 (Sustainable Development)). At the same time, students who are interested in expanding their economics training within the context of the major will continue to be able to do so by taking related courses in the Sustainable Resource Management Option.

Green Business (a Business Management course currently under development) will be added to the curriculum to reflect the current explosion of investment in Green Business and its very great importance in reducing the large environmental impacts of commerce.

This class will also be required for the proposed Sustainable Resource Management Certificate and it complements the departments increasing focus in Sustainable Resource Management.

Changes in Geography

The current lower division geography requirement, GEOG 2100, focuses solely on the physical environment. The focus of GEOG 2400, the Geography of World Development, (global wealth, poverty, and inequality) better complements the 4 key areas of refined departmental focus. This also complements the concepts taught in GEOG 2310, Economic and Resource Geography, reinforcing the integration of key environmental, economic, and justice concepts in the curriculum.

Consistent with our desire to build our graduates analytical skills and to focus curriculum on departmental strength, we are adding a GEOG course to the upper divisions curriculum, GEOG 3410 (Air Photo Interpretation) or GEOG 4425 (Remote Sensing). This note only generates appropriate marketable skills, but gives our graduates distinctive skills that are not often taught are part of the environmental studies curriculum.

Changes in Geology

The lower division geology requirement is being changed to establish a better alignment with environmental studies in general and with the departments focus, in particular. The current requirement, GEOL 1000 and it alternative GEOGL1001+02 focus solely on Earth's physical environment. The proposed substitution, GEOL 2300 focuses on interactions between the human and physical environment. Additionally, 2300 includes a focus on hazards frequently precipitated by poor environmental management (for example, clear-cutting can cause landslides) and on atmospheric and water pollution, which also affect the biotic environment. The focus of environmental studies is at the nexus of the physical, biotic, and human environments, which makes 2300 a more appropriate focus for our students and more consistent with the department's concentrations on sustainable resource management, globalization, and social justice.

Changes to Options

We are eliminating the requirement option courses be distributed across three departments because the purpose of the option is now to provide a depth of focus in a specialty area. This both enhances students employments prospects and it is more educationally sound in that they have the opportunity to apply broad theoretical constructs to specific applications, reinforcing the concepts and seating them in experience.

Three options will be dropped: Ecology/Life Sciences, Environmental Health, and Human Environment. We have had no students sign up for these options in the last 3 – 5 years for various reasons. As described above, in the case of Ecology/Life Sciences the prerequisite courses have become excessively burdensome and most of the option courses are no longer being taught by the department. In the other two cases, few courses are supported and the options are only loosely structured with few courses actively

integrating the focus area. Regardless, it does not make sense to continue them given the lack of demand.

Two options will be retained or modified. Land Use Planning and Management will become Sustainable Resource Management, and it will have a suite of required courses and optional courses to be selected with approval of the Environmental Studies Major Advisor. The Physical Environment is updated to reflect new course options.

ENVIRONMENTAL STUDIES: PROPOSED MODIFICATIONS

Summary of Modifications to the Major

Lower Division Core Requirements

CURRENT

PROPOSED

LOWER DIVISION (32-33 Units)	Min	Max	LOWER DIVISION (31 Units)	Min	Max
Ecological Life Sciences Option students must take BIO 1401 (5); students in other options must take BIOL 1000, or BIOL 1001 and 1002	5	5	BIOL 1000, or BIOL 1001 and 1002 (*)	5	5
CHEM 1100 Intro to College Chemistry	5	5	CHEM 1100 (*)	5	5
ECON 2301 Microeconomics	4	4	ECON 2301 Microeconomics or GEOG 2310 Economic and Resource Geography (4)	4	4
ENVT 2000 Intro to Environmental Studies (4) or GEOG 3000 Sustainable Resource Management	4	4	same	4	4
GEOG 2100 Physical Geography or Introduction to Maps 2410	4	4	GEOG 2400 Geography of World Development	4	4
GEOL 1000 Earth Systems Science (5), or GEOL 1001 Intro to Earth Sciences and 1002 Environmental Geology Lab (6)	5	6	GEOL 1001 Intro to Earth Sciences or GEOL 2300 Natural Disasters	4	4
STAT 1000 Elements of Probability and Statistics or 2010 Statistics for Business and Economics	5	5	same	5	5
Lower Division TOTAL (Min/Max)	32	33	Lower Division TOTAL (Min/Max)	31	31

(*) College level environmental biology and environmental chemistry taken with the associated laboratory sections are a preferred alternative that will be accepted from transfer students.

Summary of Modifications (continued)

Upper Division Core Requirements

CURRENT

PROPOSED

UPPER DIVISION (43 - 46)	Min	Max	UPPER DIVISION (38 - 41)	Min	Max
BIOL 3031 Nature Study or 3110 Principles of Ecology (for those pursuing the eco	4	4	eliminate	0	0
ECON 4306 Environmental Economics or PHIL 3151 Environmental Ethics	4	4	same	4	4
ENVT 3400 Environmental Resource Analysis	4	4	same	4	4
ENVT 4100 Environmental Impact Analysis	4	4	same	4	4
ENVT 4800 Senior Seminar in Environmental Studies	3	3	same	3	3
ENVT 4910 Internship in Environmental Studies	2	4	same	2	4
GEOG 3450 Literature and Research Methods	5	5	same	5	5
GEOG 4600 Introduction to GIS	5	5	GEOG 3030 Essentials of GIS	4	4
POSC 3460 Environmental Law or 4171 Public Policy and the Environment	4	4	same	4	4
Plus any two of the following: ENVT/GEOG 3480 (4), ENVT 4300 (5), GEOG 4125 (4)	8	9	same	8	9
Upper Division TOTAL (Min/Max)	43	46	Upper Division TOTAL (Min/Max)	38	41

Summary of Modifications (continued)

Option Area Electives

Option Area Electives			Option Area Electives		
OPTION (25-26 units)	25	26	OPTION (16 units)	16	16
MAJOR Total Units Max/Min	100	105	MAJOR Total Units Max/Min	85	88

Proposed Changes to Options

CURRENT			PROPOSED
Ecology / Life Sciences			DISCONTINUE
Environmental Health			DISCONTINUE
Human Environment			DISCONTINUE
Land Use Planning and Management			Sustainable Resource Management
Physical Environment			Physical Environment
			Environment and Social Justice

Details of the proposed requirements of the three options are presented in the following pages.

Descriptions of Proposed Options

Sustainable Resource Management Option (16 units)

Required Courses (8 units)

- ENVT/GEOG 4320 - Energy and Society
- GEOG 4350 - Water Management

Select 8 units from the following list of courses

- ECON 4306 - Environmental Economics (4) (*)
- ENGR/MGMT 3110 - Project Management
- ENVT/GEOG 4330 - Sustainable Development (4)
- GEOG 3340 - Sustainable Cities (4)
- GEOG 3410 - Air-Photo Interpretation (4)
- GEOG 3600 - Cartographic Principles and Graphic Communication (4)
- GEOG 3605 - Computer Cartography (4)
- GEOG 4355 - Watershed Management (4)
- GEOG 4425 - Remote Sensing of Earth Environments
- GEOG 4605 Environmental Applications of GIS (5)
- MGMT6460 - Strategic Management for a Sustainable Society (4)
- POSC 4445 - Bureaucratic Politics (4)
- REC 4705 - Outdoor Adventure Recreation or - REC 3305 Outdoor Living Skills (4)

(*) if not used for Upper Division Core

Descriptions of Proposed Options, continued

Environment and Social Justice Option (16 units)

Select 16 units from the following list of courses

- ENVT/GEOG 4320 Energy and Society (4) (*)
- ENVT/GEOG 4330 - Sustainable Development (4)
- HIST 3505 - California Environmental History (4)
- HSC 2001 Environmental Factors in Health (4) or HSC 3200 - Environmental Health (4)
- INTS 3100 - Global Systems (4)
- PHIL 3151 - Environmental Ethics (4)
- PHIL 3511 - Philosophy of Human Rights and Global Justice (4)
- PHIL 3636 - Economic Justice (4)
- POSC 3120 - State and Local Politics and Government (4)
- POSC 3130 - Urban Politics (4)
- POSC 3800 - Public Policy Analysis (4)
- POSC 4147 - Public Policy and the Environment (4)
- PUAD 4800 - Public Administration and Society (4)
- REC 3700 - Community Organizations in the Urban Setting (4)
- REC 4705 - Outdoor Adventure Recreation or - REC 3305 Outdoor Living Skills (4)

(*) if not used for Upper Division Core

Physical Environment Option (16 units)

Select 16 units from the following list of courses

- BIO/GEOG 4130 - Biogeography (4)
- GEOG 2100 - Physical Geography (4)
- GEOG 2410 - Introduction to Maps (4)
- GEOG 3115 - Physical Landscape Analysis (4)
- GEOG 3120 - Climate Change (4)
- GEOG 4125 - Field Course in Physical Biotic Geography (4)
- GEOG 4425 - Remote Sensing of Earth Environments (4)
- GEOL 1201 - Introduction to Oceanography (4)
- GEOL 1202 - Oceanography Laboratory (2)
- GEOL 2000 - Introduction to the Geology of California (4)
- GEOL 2101 - Physical Geology (5)
- GEOL 3040 - Fundamentals of Meteorology (4)
- GEOL 3100 - Geology of Western Regional Parks (4)
- GEOL 3110 - Principles of Geomorphology (4)
- GEOL 3200 - Regional Field Geology (1-2)
- GEOL 3400 - General Oceanography (4)
- GEOL 4320 - Hydrogeology (4)

Summary of Modifications to the ENVT Minor

Required Courses	Units	Required Courses	Units
	12		16
ENVT 2000		ENVT 2000 Intro to Environmental Studies (4) <i>or</i> ENVT 3000 Sustainable Resource Management (4)	
ENVT 4300		ENVT 3400 (4)	
ENVT 4800		ENVT 4100 (4)	
		ENVT 4300 (4) or 3480 (5)	

Elective Courses select the indicated units from the following categories	24	Elective Courses select from the following courses	20
In Natural Sciences	8	BIOL 2004/05 Natural History of California (5)	
In Social Sciences	8	ENVT 3340 Sustainable Cities (4)	
Additional	8	ENVT 4320 Energy and Society (4)	
		GEOG 3120 Climate Change (4)	
		GEOG 4330 Sustainable Development (4)	
		GEOG 4350 Water Management (4)	
		GEOG 4355 Watershed Management (4)	
		HIST 3505 California Environmental History	
		HSC 3200 Environmental Health (4)	
		MGMT 6460 Strategic Management for a Sustainable Society	
		PHIL 3151 Environmental Ethics (4)	
		PHIL 3153 Biology and Ethics (4)	
		POSC 3460 Environmental Law (4)	

TOTAL UNITS	36		36
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Sustainable Resource Management Certificate

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March 3, 2008

Prerequisites for the Certificate Program

AA degree and STAT 1000 (Elements of Probability and Statistics) or equivalent.

Required Courses (12 units)¹

- GEOG 3000 Sustainable Resource Management (4: A F/W/Sp)²
- ENVT 3400 Environmental Resource Analysis (4: A W)²
- ENGR/MGMT 3110 Project Management (4: A F/W)²

(Said: 3110 requires 3100 or permission of instructor...can we get blanket exemption)

Use undergrad version of this

Selected Courses (12 units)

Select 3 courses from the following list

- ENVT 4320 Energy and Society (4)
- GEOG 4350 Water Management (4)
- ENVT 3340 Sustainable Cities (4)
- GEOG 4330 Sustainable Development (4)
- GEOG 4355 Watershed Management (4)
- MGMT 6460 Strategic Management for a Sustainable Society (4)*

¹Note that Environmental Studies Majors may not count major core courses (GEOG 3000 and ENVT 3400) for credit for certificate or the option in Environmental Studies.

²Code: The number is the units of units, and the rest indicates when the courses are taught. A = annual. F/W/Sp/Su

B. Students

Do you see the number of student majoring in your programs increasing or decreasing during the next five years?

The extensive revamping of both Geography degrees and the Environmental Studies BA is intended to: a) make these programs reflective of 21st century imperatives within the disciplines; b) make them more attractive to current and future CSUEB students. Time will tell, of course, but the faculty firmly believes the curricular modifications will result in more majors for both programs.

Through much of the 1990s, lower-division introductory survey courses in Environmental Studies and Geography each routinely enrolled 400+ students annually. From these pools of mostly undeclared students, we would draw majors for each of the programs. Our departmental motto was “we recruit by force of example,” meaning that we attracted many majors by assigning dynamic faculty to teach these courses. That was always our best opportunity to expose our subject to the masses. After all, how many high school (or even community college) students decide to major in Geography *or* Environmental Studies before they get to a university? Most need a prompt, a portal to our disciplines which is what we had in Environmental Studies 2000 and Geography 1000. Implementation of the GE cluster program for first- and second-year students in the late 1990s massively eroded enrollments in those intro courses, severely impacting our programs. The number of majors dropped precipitously, especially in Environmental Studies. (Majors in our two programs fell from 130+ to under 50, where it stabilized.)

The department made internal adjustments to the new circumstances, primarily by placing a greater emphasis on upper-division GE, including multiple offerings of survey courses on natural resources management, on California, and on regions of the world. We also got Geog 3000 (Sustainable Resource Management) included in the PACE curriculum. This strategy worked insofar as keeping our annualized FTES at respectable levels, but it did not produce an appreciable number of majors.

Elimination of the 2nd-year cluster program has been a boon to the department. Enrollments in our 2000-level courses in both Geography and Environmental Studies are robust once again, with class sizes typically 40 to 50 or more. With the recent restructuring of our undergraduate programs, the department is committed to re-crossing the 100 majors threshold for the combined programs. Our Outside Reviewer firmly believes that installation of a new/enhanced geospatial lab will double the number of majors in 4-5 years. We fully expect the number of majors and especially total enrollments (SCU or FTES) will steadily increase over the next five years with or without the lab.

Do you anticipate new programs or outreach to new student populations?

The only new program currently envisioned would be a certificate in Sustainable Resource Management but thanks to a strong prompt from our outside reviewer we are

now committed to designing a 1000-level course in Geography in an attempt to capture a portion of the increasingly large number of freshman now enrolling at CSUEB. Most likely it will be World Regional Geography, a common offering at universities across the country. Ideally, this course would serve to bring students back for other courses in the department, whether they chose to major in Geography or not.

Will the career opportunities open to your graduates change during the next five years?

As Outside Reviewer has noted, “geospatial careers are exploding across the country. MONEY magazine has named ‘geospatial analysis and Geographic Information Systems’ one of the Top Ten careers in terms of growth in opportunities.” Add to this the recent surge in career opportunities in fields related to “green” technologies. Our proposed revamp of the Environmental Studies program is designed, in part, to better prepare our students for employment in this emerging sector of the economy.

A number of students in both the Geography and Environmental Studies programs who have taken Prof. Lee’s courses in Water Resources and Watershed Management (GEOG 4350 and GEOG 4355), with their emphasis on technical and management questions, have had notable success securing positions in the water resources field. It is common to find graduates of our programs working in or with local and state government units associated with implementation of Clean Water Act requirements. We believe career opportunities in this area will continue to increase as an aging work force turns over.

How are advising and retention a priority for the program?

Quite simply, advising and retention are a highest-order priority for this department. Having learned to live with far fewer majors than we had a decade ago, the faculty treats our majors as if they are crown jewels. Prof. Garbesi, the Environmental Studies Program Coordinator, advises all ENVT students, while Prof. Lee and Prof. Larson share advising responsibility for Geography majors. Prof. Woo initially advises all students in the MA program. Later they attach themselves to a faculty member who serves as mentor and, usually, thesis or project supervisor. Environmental Studies majors are required to perform an internship under the supervision of Prof. Lee.

Are changes needed in the program’s learning goals?

The recent revamp documents, included in the Curriculum section of this Plan, addresses the learning goals of each of the Geography programs. Learning goals for the Environmental Studies program were clearly established in the previous Plan submitted in 2005. The two most significant changes involved adding courses to enhance our students’ abilities in quantitative reasoning and problem solving (ENVT 3400: Environmental Resource Analysis) and application of techniques and methods (Geog 3480/Geog 3480: Applied Field Study). A noteworthy by-product of these new learning goals: Class projects for the applied field course in 2006 and 2007 were of a sufficient quality to be presented by Prof. Garbesi at sessions of the Energy Specialty Group at the

annual meetings of Association of American Geographers. Each of the students was identified as a co-author of the paper.

What are your specific plans in the areas of curriculum change, outreach, scheduling and retention to increase student enrollment?

Curriculum change is covered above. Outreach efforts will involve a significant upgrade in the department's website, which should be a more effective magnet for attracting new students. At present, the website only minimally satisfies our needs. It can and should be much more robust. In what will be a group effort, the faculty will develop web-page materials on career opportunities and the lifelong learning values and relevance of Geography and Environmental Studies using Association of American Geographers (AAG) and Association of Environmental Professionals (AEP) materials and other sources, including alumni data and selected alumni profiles. The Office of University Advancement (UA) and the department are working to develop an alumni database. The chair will send out a letter soliciting information from alums of our programs about their career paths after graduation. This will happen in AY 2008-09.

The chair will continue to evaluate and determine the best time-slots for all classes and the appropriate balance for courses with multiple offerings. The major advisors (Garbesi, Lee, and Woo) and the department chair will review major and minor requirements and electives in the revamped programs to establish a model sequence of multiple- and single-class offerings. Allowing our majors to progress through the curriculum with a minimum of bottlenecks remains a goal of the faculty. Idealized annual schedules for two years going forward will be developed and given to declared majors as a road map for how they can expect to proceed. Faculty will continue to offer evening classes on a systematic basis, with at least two every quarter that begin at 6 PM or later. The chair will continue to plan class schedules a full academic year in advance with classes scheduled in a manner as to prevent cannibalization. Proposed schedules will be posted on the department's website.

In recent years the Geography program has had an unusual retention issue. Students who became particularly adept at skills acquired in technical courses such as Geographical Information Systems (GIS) and Computer Cartography have been lured away by employment opportunities. They find that certain jobs in this field are skill-set based rather than degree-based, so they leave the program without first completing their degrees. For those students, there's not much the department can do to retain them, particularly if the courses they need are taught during the day when they're working.

If your program has inadequate resources to serve your students, what does the program require?

For the most part, our students are adequately served. Computers in the department's GIS lab (described below in the section on Resources) are refreshed on a regular cycle

determined by the university's Information Technology unit. When high student demand for a GIS course this past Winter quarter exceeded the number of work stations in the lab, two additional machines were installed in a matter of days!

The most significant *requirement* for our programs going forward is the continued support by Academic Resources (Academic Affairs) for the department's annual field course (ENVT 4300: Environmental Field), required for both programs. Bus rentals for this course (nine weeks of 10-hour field trips) currently run about \$5,000. We are very grateful this cost is borne by Academic Resources. Neither the department, out of its ever-shrinking Supplies and Services budget, nor CLASS, would be able to cover the cost this course in its present form.

Are the lines of communication open between students and faculty?

We would like to think so. The chair is on campus and highly accessible five days a week throughout the academic year. Faculty office hours are rigorously maintained. Moreover, it is department custom for faculty to maintain an open-door policy whenever they are in their offices and not engaged in class preparations or confidential matters. All faculty members faithfully respond to email from students. The chair seldom is called upon to mediate an issue involving students and faculty. Those rare occasions typically involve some form of grade-related complaint.

There has been and continues to be a high level of student satisfaction with our programs. Small class sizes for advanced courses in the major make for desirable student-faculty ratios. But the nature of our curriculum is responsible as well. Multi-hour lab and field classes provide opportunities for our students to make friends, to bond, and to achieve some measure of success in group projects as well as their individual learning.

C. Faculty

What changes do you foresee for the program faculty?

The current core faculty (Profs. Garbesi, Larson, Lee, Li, Stine and Woo) has been fixed since 1999, except when Prof. Larson served as the Interim Dean of ALSS (now CLASS) during AY 2001-02 and 2002-03. Three (Larson, Li and Stine) are professors; the other three are tenured associate professors. The age spread of the group, 58 to 44, suggests that most will remain in the department for at least the next five years. One separation may be on the horizon. Our outside reviewer was informed by Prof. Stine that he anticipates retiring at the conclusion of AY 2009-10. A stable faculty has been an area of strength for this department. We expect that to continue.

Ours is an energetic faculty, engaged and productive. We have worked well as a unit. In numerous ways, we seek to raise the stature of our department and by extension the

university: Through scholarly contributions, professional consultancies, regular attendance at academic meetings and conferences, letters to the editor of newspapers, presentations to non-profit groups and schools, and other types of community and outreach work, including service in local government, the faculty makes its present felt within our disciplines and in CSUEB's service area.

Yet it has been more than five years since all six regular faculty have been on campus together for the standard academic year. Prof. Stine has an established history of seeking and securing external funding for his paleoclimate research (most recently a \$300,000 grant from the Comer Education and Scientific Foundation). His field-based research has taken him away during Fall Quarter six of the past seven years. Four other faculty members have received one- or two-quarter sabbaticals since 2003. To date, instructional gaps have been filled by a small group of outstanding part-time faculty (including one with a three-year entitlement) who mainly teach lower- and upper-division survey courses in Geography. The department also has a highly regarded Oakland-based environmental consultant teach a constantly evolving policy course (ENVT 4100: Environmental Impact Analysis) on an annual basis.

A relatively small number of majors and a tenure-track-to-lecturer teaching load (number of classes and FTES) ratio of approximately 70%-30% in recent years have been grounds for not seeking additional regular faculty. The previous CLASS Dean, noting how closely the department's ratio was to the "ideal" CSU ratio of 75%-25%, actively discouraged any tenure-track requests. The Outside Reviewer for our previous program review recommended that the department's next position be a cultural geographer with regional expertise in Latin America. This prospective position might have been broadened to a cultural geographer with interest in aspects of environmental studies. In the CLASS 5-year plan for WASC, a position in urban/cultural geography was identified as a department need.

FTES growth over the past two years (especially in AY 2007-08), with an anticipated increase in majors to follow, will justify seeking a tenure-track position.

What does the university need to do to maintain or improve the current faculty?

Our Outside Reviewer is clear in his belief that faculty members are hindered by university policies that serve as "disincentives for faculty to receive grants, since they usually cannot financially benefit from these funds." An amending of "policies that stand in the way of faculty receiving summer salary and/or supplementary compensation from external funding" is needed. Our reviewer argues that "there may be opportunities to write grant proposals that serve the teaching mission of the department by hiring graduate students to do research." The faculty supports our reviewer's recommendation and additionally recommends amending the practice that limits the amount of financial support returning to the department if a faculty member receives external funding.

Do you anticipate that you will be requesting new regular faculty members? If so, what will be the basis for these requests?

There are two program-based needs: An urban/cultural geographer with a regional specialization in Africa or Europe capable of contributing to the Environmental Studies program; and an Environmental specialist with expertise in sustainability issues. (Our Outside Reviewer recommended the position in urban/cultural geography as an immediate need and stated that “in the near future” the department should seek an environmental specialist with a focus on geospatial techniques. The latter expertise, it should be emphasized, is keyed to an expansion of the department’s geospatial lab.) Annual Reviews beginning next year will include refinements and/or adjustments of the department’s faculty needs as enrollment trends are better understood and should unanticipated changes in faculty composition occur.

A proposal for one tenure-track search in AY 08-09 was submitted to CLASS.

GEOGRAPHY & ENVIRONMENTAL STUDIES

Proposal for one 08-09 Tenure-Track Search

Position: *Urban-Cultural Geography*

Justification: Our in-progress (AY 07-08) 5-year program review underscores earlier intentions (e.g. the department’s previous 5-year Plan and the CLASS 5-year Plan for WASC) regarding our need for a cultural geographer with a world region specialty. This position comports with language in one of the *University Academic Plan’s* Programs of Distinction: Global Awareness and Understanding. The requested position directly addresses the need to enhance “fields of study involving international and global inquiry.” In conjunction with our on-going program review, the BS, BA and MA programs in Geography have been revamped to better reflect evolving interests of current faculty while moving the programs toward 21st-century imperatives within the discipline and related fields such as International Studies.

Description: We seek a broadly trained human geographer with expertise in urban-cultural geography. A regional specialization in Africa or Europe is desired to complement existing departmental strengths in Asia, Latin America and North America. A working interest in some combination of urban planning, transportation planning, inner city issues, or developing world cities is expected. Primary teaching responsibilities will include lower-division courses in *Cultural Geography* (Geog 2300; 200+ students annually) and *World Development* (Geog 2400); an upper-division course in *Urban Geography* (Geog 3330); a re-tooled field course in *Cultural-Urban Geography* (Geog 4325); and a G.E. course on a major world region, either *Africa* or *Europe*, as part of an expanded global studies curriculum. An urban specialist will bring extramural funding to the department while serving as an urban affairs expert for the University.

Departmental Demographics: Currently 6 full-time tenured faculty: 3 professors, 3 associate professors. By AY 2009-10 at least 5 of the 6 will be professors. The core group

of 6 has been fixed for nearly a decade. (The most recent addition: Karina Garbesi, in 1999.) Scott Stine informed our outside reviewer that he will retire at the conclusion of AY 2009-10, which would reduce our regular faculty to 5 members. The department presently has the services of one lecturer with a 3-year entitlement.

Is advising shared fully by the faculty?

Not fully, though definitely shared. Every member of the faculty has an advising role, but three members stand out for their contributions to advising: Prof. Garbesi is Program Coordinator and advisor for Environmental Studies; Prof. Lee advises Geography majors and serves as the advisor for the Environmental Systems and Resource Management option of the program in Environmental Science; Prof. Woo is the Graduate Advisor for Geography. Prof. Li directs the department's GIS Lab; Prof. Stine, widely connected within Bay Area environmental and scientific circles, has been instrumental in steering our students toward meaningful internships; Prof. Larson, as chair, does a little bit of all of the above. The six faculty work together well; communication with each other and coverage for each other has been a trademark of the department.

D. Resources

Will your current level of resources (staff, equipment, library resources, travel funds, etc.) be adequate to permit the maintenance or improvement of program quality during the next five years? (Identify needs based upon program priorities.)

Our previous planning document noted the following:

“According to Prof. Li, who directs the department's GIS Lab, it is imperative that the following be completed early in the next review cycle:

1. Update the computer hardware in the GIS computer lab in MI 3032 by the end of the Fall quarter 2005.
2. Upgrade GIS software from version 8.2 to 9.0 by the end of 2005 at the latest.”

Prof. Li developed a proposal to accomplish the goal of refreshing the lab. The hardware was upgraded. New computers (with more memory) along with 19” monitors were installed two years ago. The university's Information Technology unit supports our department's GIS and Cartography lab via the CLASS IT arm. The department uses its Supplies and Services funding to cover operating costs, mostly related to printing and digitizing. So far, the annual costs have been comfortably absorbed but the department's annual S&S allocation has continued to shrink. The lab, now with 17 work stations, is scheduled to be “refreshed” in AY 08-09 according to the timetable set by Information Technology.

December 23, 2008

From: Michael Mahoney, Provost and Vice President, Academic Affairs

To: Diedre Badejo, Dean, College of Liberal Arts and Social Sciences (CLASS)
David Larson, Chair, Geography and Environmental Studies

Subject: MOU Meeting – B.A., B.S. Geography, B.A. Environmental Studies, M.A. Geography

On December 12, 2008, I met with Diedre Badejo, Dean, CLASS; Gale Young, Interim Associate Dean, CLASS; Jim Okutsu, Associate Dean, CLASS, David Larson, Chair, Geography and Environmental Studies, Michael Lee, Professor, Geography and Environmental Studies; Aline Soules, Chair, CAPR; and Carl Bellone, AVP Academic Programs and Graduate Studies to discuss the Program Review for the B.A. and B.S. in Geography, the B.A. in Environmental Studies, and the M.A. in Geography in order to develop an MOU as required by CAPR 9.

The Department of Geography and Environmental Studies has six tenured faculty members who support both Geography and Environmental Studies. These faculty members have been together for ten years. Over 85% of the courses in the Department are taught by tenure track faculty. There is concern that the Department has not had a new tenure-track hire for a decade. A recent request for a new position was rated highly by the college but was not approved due to budget constraints.

The Department sees its undergraduate Geography and Environmental degrees as interdisciplinary areas of studies with many other departments contributing courses. The Department's degrees contribute to the university Academic Plan's focus on environmental issues and global awareness as well as to General Education.

The M.A. in Geography has traditionally been small with an enrollment of about sixteen students. The Department would like to put "Environment" in the title which would be more accurate and would potentially be more attractive to students.

The Department viewed the Program Review process as an opportunity to reinvent itself. Environmental Studies wants to reduce the number of units in the major from about 100 to the mid 80s to make it easier for students. A proposal for a modification of the B.S. in Geography is being prepared for CLASS and the Senate's CIC. The revised degrees will focus on 1) Geospatial Studies, 2) Global Studies, and 3) Sustainable Resource Management. Certificate proposals are also being developed. The B.A. in Geography will keep its liberal arts focus.

CAPR praised the Department's thorough and balanced self-review and the proposed revisions of the curriculum. The CAPR review included several recommendations which can be categorized as follows: 1) expansion and upgrading of the geospatial lab; 2) renaming the M.A. in Geography; 3) improvement of the assessment activities; and 4) continuation of alliances with other departments and programs as a way of increasing enrollment.

The results of the MOU meeting are as follows:

1. The Geospatial Lab will help the Department increase enrollment. It is good news that the number of workstations in the Geospatial Lab will be increased. The Department is encouraged to continue to work with University Advancement to seek outside funding for Lab expansion since the university budget is unable to fund expansion at this time.
2. The Department is encouraged to rename and revise its M.A. in Geography to more accurately reflect the Environmental Studies content of the degree and to make it more attractive to students. AVP Bellone can assist the Department in developing a strategy and timeline for approval at the campus and Chancellor's Office levels.
3. The Department needs to improve its assessment efforts. Assessment progress has been made but the Department is encouraged to follow the recommendations for improvement of assessment in the CAPR Review and to implement its own assessment plan for student learning outcomes utilizing rubrics in key courses (including a capstone course). The Department is encouraged to work with the CLASS Office to strengthen its capacity for good assessment.
4. The Department is encouraged to continue its alliances with other departments and programs as a way of increasing enrollment. In addition to these alliances, the Department should also explore other means of increasing enrollment such as offering some courses online (especially for professionals needing updating), expanded articulation of lower division courses with community colleges (such as the project currently underway with Ohlone College), and continued or expanded participation in the freshmen clusters program.
5. The Department is encouraged to resubmit its request for a new tenure-track position when the budget situation improves (hopefully in 2010).

AVP Carl Bellone and I sincerely appreciate the challenging and impressive work that Chair Larson and the other faculty members of the Department of Geography and Environmental Studies have done to run, update and improve their programs. We'd also like to thank the CAPR members for their time and informative report.

Cc: Gale Young
Jim Okutsu
Sue Opp
Aline Soules
Carl Bellone