SACRAMENTO STATE

Course Change Proposal
Form A

CSU, SACRAMENTO 7 APR 19 2007 ACADEMIC AFFAIRS

Academic Group (*College*): NSM	Academic Organization (*Department*): Biological Sciences	Date: October 12, 2006
Type of Course Proposal: New _X__ Change _ __ Deletion ___	Department Chair: Nicholas Ewing	Submitted by: Dept. Bio Sci
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No __X_	For Catalog Copy: Yes __X_ No ___ CCE: Yes ___ No __X_	Semester Effective: Fall ___ Spring _X__, 20_08__

This course replaces experimental course Subject Area *(prefix)* and Catalog Number *(course number)*:	
This Catalog Number *(course number)* is being replaced:	

Change from:

Subject Area *(prefix)* & Catalog No. *(course no.)*:	Title:	Units:

Change to:

Subject Area *(prefix)* & Catalog No. *(course no.)*:	Title:	Units:
BIO 221B	Methods in Ecology, Evolution and Conservation	2

JUSTIFICATION:

The graduate methods course (BIO 220) currently addresses two major skill sets 1) oral and written presentation skills focused primarily on the advancement to candidacy and 2) hands-on scientific methodology. The amount of time devoted to discussions of methodology and hands-on learning of current biological techniques (class split up into cell/molecular and ecology/evolution groups) is 4 weeks out of the total 15 week course. This does not allow enough time to prepare our students for independent study nor appreciate the diversity of techniques and approaches in the current field. BIO 221B Methods in Ecology, Evolution and Conservation would expose students to the current research methods/techniques in ecology, evolution, and conservation biology and develop their analytical thinking skills. The goals would be to teach the core techniques, to address the scientific process (hypothesis-driven research) and analysis and interpretation of results. The course would prepare students for graduate research and future career opportunities, and reduces the burden on graduate advisors to teach basic research techniques.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy. See http://www.csus.edu/acaf/univmanual/crspsl.htm - Guidelines for Catalog Course Description

BIO 221B is an introduction to research methods in ecology, evolution and conservation biology. Students learn field and laboratory techniques with a variety of taxa in a range of local ecosystems. Students will work with several faculty conducting research projects. Topics will include developing hypotheses, experimental design, study implementation, and statistical analyses. Students will be expected to present findings in oral and written form. Two 3-hour laboratory periods. Fee course. 2 units.

Note:	
Prerequisite: BIO 167, Bio 220 (may be taken concurrently)	
Corequisite:	
CAN (California Articulation Number):	
Graded: Letter __X___ Credit/No Credit____	Instructor Approval Required? Yes__ No_X_
Course Classification *(e.g., lecture, lab, seminar, discussion)*: Laboratory C16	Title for SIS+/CMS (not more than 30 characters) Methods in Ecol Evol Conserv
Cross Listed? Yes ___ No__X__	If yes, do they meet together and fulfill the same requirement, and what is the other course.
How Many Times Can This Course be Taken for Credit? __once____ Can the course be taken for Credit more than once during the same term? Yes ___ No X_	

FOR NEW COURSE PROPOSALS OR SUBSTANTIVE CHANGES ONLY:

Description of the Expected Learning Outcomes: Describe outcomes using the following format: "Students will be able to: 1), 2), etc." See the example at http://www.csus.edu/acaf/example.htm

Students will develop understanding of current methods used to study different taxa and ecological systems
Students will be able to synthesize and critically evaluate primary scientific literature in the course disciplines
Students will be able to develop scientifically testable hypotheses in the course disciplines
Students will be able to design and conduct appropriate experiments to test hypotheses in the course disciplines
Students will learn current analytical methods used to evaluate and interpret scientific data in the course disciplines
Students will be able to evaluate and present scientific results in both written and oral form

**Attach a list of the required/recommended course readings and activities [Note: it is understood that these are updated and modified as needed by the instructor(s).] This attachment should be forwarded only to your Dean's office, not Academic Affairs.

Assessment Strategies: A description of the assessment strategies (e.g., portfolios, examinations, performances, pre-and post-tests, conferences with students, student papers) which will be used by the instructor to determine the extent to which students have achieved the learning outcomes noted above:

The course will be graded based on student papers, lab and reading assignments, paper discussions, and oral presentations.

For whom is this course being developed?
Majors in the Dept _X__ Majors of other Depts ___ Minors in the Dept ___ General Education ___ Other ___
Is this course required in a degree program (major, minor, graduate degree, certificate? Yes _X_ No ___
If yes, identify program(s): Master of Science

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer facilities, faculty, etc.)? Yes _X_ No ____
If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any). _____

The Department Chair's signature below indicates that affected programs have been sent a copy of this proposal form.

Approvals: If proposed change, new course or deletion is approved, sign and date below. If not approved, forward without signing to the next reviewing authority, and attach an explanatory memorandum to the original copy.

Signatures:	Date
Department Chair:	2/20/07
College Dean or Associate Dean:	4/19/07
CPSP *(for school personnel courses ONLY)*	
Associate Vice President and Dean for Academic Programs	

Distribution: Academic Affairs (original), Department Chair and College Dean. Dean's office to send original after approval to Academic Affairs, at mail zip 6016. An electronic copy must also be sent.