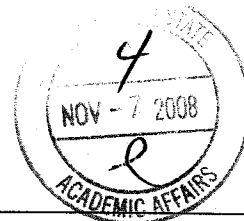




SACRAMENTO
STATE

Course Change Proposal Form A



Academic Group (College): Natural Science and Mathematics	Academic Organization (Department): Biological Sciences	Date: 10/16/08
Type of Course Proposal: New ___ Change <u>X</u> Deletion ___	Department Chair: Rose Leigh Vines	Submitted by: Thomas E. Landerholm
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes ___ No <u>X</u>	For Catalog Copy: Yes <u>X</u> No ___ CCE (Extension): Yes ___ No ___	Semester Effective: Fall <u>X</u> Spring __, 20 <u>09</u>

This course replaces experimental course Subject Area (prefix) and Catalog Nbr (course number):	
If changing an existing course, should new version be considered a repeat of the original version? If so, the same Course ID will be maintained. If not, a new Course ID will be assigned. Note: In PeopleSoft terminology, the Course ID is the unique system identifier, not the Catalog Nbr.	Yes <u>X</u> No ___

Change from:

Subject Area (prefix) & Catalog Nbr (course no.): BIO 127	Title: Vertebrate Embryology	Units: 4
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Change to:

Subject Area (prefix) & Catalog Nbr (course no.): BIO 127	Title: Developmental Biology	Units: 4
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JUSTIFICATION:

Since the time that this course was developed there has been a dynamic shift in our understanding of development to include biochemistry, genetics and molecular biology. This shift has included an expansion of our knowledge of developmental relationships among organisms and allows us to include a greater emphasis on invertebrates and simpler models. Therefore, we propose to increase the weekly lecture contact time from two fifty minute sessions to three to accomplish a shift in course content: from a purely anatomical perspective to a developmental perspective that includes the molecular, cellular and organismal activities that create the anatomical changes. We also propose to reduce the laboratory contact time from two 3-hour sessions to one to ease student scheduling, align with other Departmental offerings and to save the Department and College money. The laboratory portion of the course will also include a shift to examination of models through experimentation, in addition to the traditional study of anatomy.

NEW COURSE DESCRIPTION: (Not to exceed 80 words, and language should conform to catalog copy. See <http://www.csus.edu/umannual/acad.htm> - Guidelines for Catalog Course Description)

This course examines the progression of fertilized eggs of vertebrate organisms through embryonic development. This progression will be studied at biochemical, molecular, genetic, morphological and physiological levels, with an emphasis on the progressive changes that occur within cells, tissues and organs in the embryo. We will use a comparative approach between a variety of model organisms to understand similarities and differences among vertebrate and selected invertebrate species. Lecture three hours; laboratory three hours. Fee course. Prerequisite: BIO 002. 4 units.

Note: Prerequisites will be enforced by instructor.

Prerequisite: BIO 002
Enforced at Registration: Yes ___ No X

Corequisite:
Enforced at Registration: Yes ___ No ___

Graded: Letter X Credit/No Credit ___ **Instructor Approval Required?** Yes ___ No X

Course Classification C2, C16 **Title for CMS (not more than 30 characters)**
Developmental Biology

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? 1

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 be able to describe the major concepts and events of embryonic development:
1. Fertilization results from the union of haploid gametes and produces a new organism.
 2. Organism development is progressive and the fate of different cell types becomes determined at different times.
 3. Molecular interactions between cell types directly induce cell differentiation events.
 4. The processes of early development are cleavage, gastrulation, axis specification, and cell specification.
 5. Gene conservation allows early development to be studied in model organisms, including both invertebrates and vertebrates.
 6. At the conclusion of early development the germ layers have formed.
 7. The processes of later development involve the formation of the cell and tissue derivatives of the germ layers.
 8. The ectoderm gives rise directly to the central nervous system and the epidermis.
 9. Neural crest cells arise from the ectoderm, migrate extensively and differentiate into numerous cell types.
 10. The endoderm gives rise to the lining of the digestive and respiratory tubes and their associated organs.
 11. The mesoderm gives rise to all of the cells and tissues between the ectodermal derivatives and the endodermal derivatives.
 12. The position that a cell arises within its germ layer and relative to the other germ layers determines its cell fate potential.
 13. The mechanisms of sex determination can vary among vertebrates: involving genetic and environmental influences.

****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:

Three mid-term lecture exams and a final comprehensive exam
Four laboratory write-ups, covering 3-4 weeks of laboratory activity: Body Plans and Axis Development, Early Development from Germ Cells to Germ Layers, Development of the Products of the Ectoderm and Endoderm, and Development of the Products of the Mesoderm.

For whom is this course being developed?
Majors in the Dept 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 ___ No
If yes, identify program(s):

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 ___ 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). Biological Sciences B.A./B.S.

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: <i>Rose Leigh Vines</i>	11/1/08
College Dean or Associate Dean: <i>Laurel Deffernan</i>	11/6/08
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.