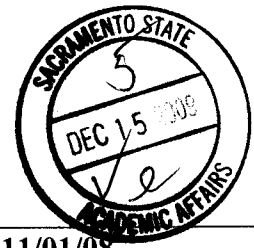




SACRAMENTO
STATE

Course Change Proposal Form A



Academic Group (College): Natural Science and Mathematics	Academic Organization (Department): Physics and Astronomy	Date: 11/01/08
Type of Course Proposal: New <input checked="" type="checkbox"/> Change <input type="checkbox"/> Deletion <input type="checkbox"/>	Department Chair: Gary Shoemaker	Submitted by: Chris Taylor
Does this course fulfill a requirement for single-subject or multiple subject credential students? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	For Catalog Copy: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> CCE (Extension): Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Semester Effective: Fall <input type="checkbox"/> Spring <input type="checkbox"/> , 2009

This course replaces experimental course **Subject Area (prefix)** and **Catalog Nbr (course number)**:

Change from:

Subject Area (prefix) & Catalog Nbr (course no.):	Title: Introduction to Astronomy	Units:
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Change to:

Subject Area (prefix) & Catalog Nbr (course no.): ASTR 4B	Title: Introduction to Stars, Galaxies and Cosmology	Units: 3
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JUSTIFICATION:

The course content for the current ASTR 4: Introduction to Astronomy course is too long to cover in a single semester. Standard practice has been to cut discussion of the Solar System and focus more on stars and stellar evolution, galaxies and cosmology. We propose to re-introduce the Solar System content by dividing ASTR 4 into two separate courses: ASTR 4A: Introduction to Planetary Science and ASTR 4B: Introduction to Stars, Galaxies and Cosmology. The latter is how the course is currently taught. This proposal, combined with our proposal for ASTR 4C: Astrobiology, will allow us to offer all major areas of contemporary astronomy. This division is already common practice at many community colleges. All three courses will be taught from an astronomical perspective and are not meant to substitute for courses offered by other departments.

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)

ASTR 4B. Introduction to Stars, Galaxies and Cosmology. Description and explanations of astronomical phenomena related to stars, galaxies and cosmology. Structure and evolution of stellar and galactic systems. Occasional observation periods. **Prerequisite:** One year of high school geometry or instructor permission. **Graded:** Graded Student. **Units:** 3.0.

Note:

Prerequisite: High school level geometry
Enforced at Registration: Yes No

Corequisite:
Enforced at Registration: Yes No

CAN (California Articulation Number): N/A

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

Course Classification (e.g., lecture, lab, seminar, discussion):
lecture C - 01 **Title for CMS (not more than 30 characters):**
Intro to Stars and Galaxies

Cross Listed? Yes No **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

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:

- 1) Understand the place of human beings in the physical Universe.
- 2) Describe the basic physical properties of objects in the Universe, e.g. stars, nebulae, galaxies, galaxy clusters.
- 3) Explain how scientists use the basic principles of physics and chemistry to understand the Universe and its components.
- 4) Discuss the process by which stars and galaxies form.
- 5) Compare the properties of the Sun with other stars and compare the properties of the Milky Way Galaxy to other galaxies.
- 6) Explain how scientific inquiry and the scientific method are used to advance our knowledge of the Universe.

****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:

Examinations using factual, conceptual, and practical questions.
 Homework based on assigned readings.
 Daily mini-quizzes in class using electronic clickers.

For whom is this course being developed?

Majors in the Dept ___ Majors of other Depts ___ Minors in the Dept x General Education x Other ___

Is this course required in a degree program (major, minor, graduate degree, certificate)? Yes x No ___

If yes, identify program(s): Astronomy Minor, Earth Science Major

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 x


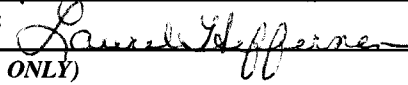
If yes, attach a description of resources needed and verify that resources are available.

Indicate which department or programs will be affected by the proposed course (if any). Department of Physics and Astronomy
 Department of Geology

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: 	11/20/08
College Dean or Associate Dean: 	12/9/08
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.