ASTR 180: THROUGH SPACE AND TIME IN THE PLANETARIUM

In Workflow

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Approval Path

1. Mon, 16 Mar 2020 19:39:54 GMT
   Jerome Buerki (jerome.buerki): Rollback to Initiator
2. Tue, 01 Sep 2020 18:04:15 GMT
   Jerome Buerki (jerome.buerki): Approved for PHYS Committee Chair
3. Tue, 01 Sep 2020 18:11:47 GMT
   Chris Taylor (ctaylor): Approved for PHYS Chair
4. Wed, 02 Sep 2020 22:33:23 GMT
   Thomas Krabacher (tsk): Approved for NSM College Committee Chair
5. Wed, 02 Sep 2020 22:33:48 GMT
   Shannon Datwyler (datwyler): Approved for NSM Dean

New Course Proposal

Date Submitted: Thu, 06 Aug 2020 23:58:02 GMT

Viewing: ASTR 180 : Through Space and Time in the Planetarium

Last edit: Mon, 24 Aug 2020 16:49:19 GMT

Changes proposed by: Rodolfo Barniol Duran (219696192)

Contact(s):

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Catalog Title:
Through Space and Time in the Planetarium

Class Schedule Title:
Through Space and Time

Academic Group: (College)
NSM - Natural Sciences & Mathematics

Academic Organization: (Department)
Physics and Astronomy

Will this course be offered through the College of Continuing Education (CCE)?
No

Catalog Year Effective:
Spring 2021 (2021/2022 Catalog)

Subject Area: (prefix)
ASTR - Astronomy

Catalog Number: (course number)
180

Course ID: (For administrative use only.)
TBD

Units:
3

In what term(s) will this course typically be offered?
Fall, Spring

Does this course require a room for its final exam?
Yes, final exam requires a room

Does this course replace an existing experimental course?
No

This course complies with the credit hour policy:
Yes

Justification for course proposal:
This is an upper division general education B5 course that will provide a deeper understanding of basic astronomy using the planetarium's reproduction of naked eye observations. Perspectives from different locations on Earth, millennia ago or during modern times, can be studied to understand how observational evidence supports scientific models that describe the motion of the sun, moon, stars and planets.

Course Description: (Not to exceed 80 words and language should conform to catalog copy.)
An exploration of the heavens through space and time using the planetarium as an investigative tool. This course covers the historical, observational and theoretical principles of astronomy. Topics include the nature of science, structure of the universe, the sky view, orbital motions, precession, constellations, lunar phases and eclipses. The course will also explore the observational evidence for modern and ancient world views.

Are one or more field trips required with this course?
No

Fee Course?
No

Is this course designated as Service Learning?
No

Does this course require safety training?
No

Does this course require personal protective equipment (PPE)?
No

Does this course have prerequisites?
Yes

Prerequisite:
Completion of GE Area B1 and B4

Prerequisites Enforced at Registration?
Yes

Does this course have corequisites?
No

Graded:
Letter

Approval required for enrollment?

No Approval Required

Course Component(s) and Classification(s):

Lecture

Lecture Classification

CS#02 - Lecture/Discussion (K-factor=1WTU per unit)

Lecture Units

3

Is this a paired course?

No

Is this course crosslisted?

No

Can this course be repeated for credit?

No

Can the course be taken for credit more than once during the same term?

No

Description of the Expected Learning Outcomes: Describe outcomes using the following format: 'Students will be able to: 1), 2), etc.'

Students who successfully complete this class will be able to:
1. Cite critical naked eye observations of the sky and use these to distinguish between scientific models in astronomy.
2. Recognize evidence-based conclusions and form reasoned opinions about Earth's place in the universe.
3. Discuss the historical, cultural or philosophical perspectives on the view of the night sky and the evolution of our scientific understanding in astronomy.
4. Find the prominent features of the night sky, measure and describe the motion of the stars and planets, and find the cardinal directions from a sky view.

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.

As described in detail in the attached syllabus, students will be assessed with a combination of several methods:
• Class observations, exercises and discussions (Learning Outcomes 1,2,3,4)
• Homework sets (1,2,3,4)
• Topical essay (1,2,3)
• Exams (1,2,3,4)

For whom is this course being developed?

General Education

Is this course required in a degree program (major, minor, graduate degree, certificate?)

No

Does the proposed change or addition cause a significant increase in the use of College or University resources (lab room, computer)?

No

Will there be any departments affected by this proposed course?

No

I/we as the author(s) of this course proposal agree to provide a new or updated accessibility checklist to the Dean's office prior to the semester when this course is taught utilizing the changes proposed here.

I/we agree

University Learning Goals

Undergraduate Learning Goals:

Knowledge of human cultures and the physical and natural world
Integrative learning
Intellectual and practical skills

Is this course required as part of a teaching credential program, a single subject, or multiple subject waiver program (e.g., Liberal Studies, Biology) or other school personnel preparation program (e.g., School of Nursing)?

No

GE Course and GE Goal(s)

Is this a General Education (GE) course or is it being considered for GE?

Yes

In which GE area(s) does this apply?

B5. Further Studies in Physical Science, Life Forms and Quantitative Reasoning (Upper Division Only)

Which GE objective(s) does this course satisfy?

Gain a general understanding of current theory, concepts, knowledge, and scientific methods pertaining to the nature of the physical universe, ecosystems, and life on this planet.

Attach Course Syllabus with Detailed Outline of Weekly Topics:

Astro 180 Planetarium syllabus 8_18_20.docx

Syllabi must include: GE area outcomes listed verbatim; catalog description of the course; prerequisites, if any; student learning objectives; assignments; texts; reading lists; materials; grading system; exams and other methods of evaluation.

Will more than one section of this course be offered?

No

General Education Details - Area B5: Further Studies in Physical Science, Life Forms and Quantitative Reasoning

Section 1.

Indicate in written statements how the course meets the following criteria for Category B5. Relate the statements to the course syllabus and outline. Be as succinct as possible.

Course type:

Physical Science or Life Forms

For courses in physical science or life forms:

Develops an understanding of the principles underlying and interrelating natural phenomena including the foundations of our knowledge of living systems.

The course will provide a deeper understanding of basic astronomy using the planetarium's reproduction of naked eye observations.

Introduces students to one or more of the disciplines whose purpose is to acquire knowledge of the physical universe and/or living systems and life forms.

This course will cover key observations of the sky to infer the currently accepted model of the solar system and the universe.

Develops an appreciation of the methodologies of science and the limitations of scientific inquiry.

This course will cover the differences between scientific models in astronomy and use them to develop an appreciation of the methodologies of science and the limitations of scientific inquiry.

Please Note: Courses listed in this category:
1) Need not be introductory courses and need not be as broad in scope as courses included in B1, B2, B3 or B4 i.e.; they may deal with a specialized topic.
2) These courses may have prerequisites or build on or apply concepts and knowledge covered in Areas B1, B2 and B4. For math courses, there must be an intermediate algebra prerequisite.

Addresses the specific GE student learning outcomes for area B5. A student should be able to do one or more of the following:

Cite critical observations, underlying assumptions and limitations to explain and apply important ideas and models in one or more of the following: physical science, life science, mathematics, or computer science.

Students who successfully complete this class will cite critical naked eye observations of the sky and use these to distinguish between scientific models in astronomy.

Recognize evidence-based conclusions and form reasoned opinions about science-related matters of personal, public and ethical concern.

Students who successfully complete this class will recognize evidence-based conclusions and form reasoned opinions about Earth's place in the universe.

Discuss historical or philosophical perspectives pertaining to the practice of science or mathematics.

Students who successfully complete this class will discuss historical, cultural or philosophical perspectives on the view of the night sky and the evolution of our scientific understanding in astronomy.

Includes a writing component described on course syllabus

I) If course is lower division, formal and/or informal writing assignments encouraging students to think through course concepts using at least one of the following: periodic lab reports, exams which include essay questions, periodic formal writing assignments, periodic journals, reading logs, other. Writing in lower division courses need not be graded, but must, at a minimum, be evaluated for clarity and proper handling of terms, phrases, and concepts related to the course.
2) If course is upper division, a minimum of 1500 words of formal, graded writing. [Preferably there should be more than one formal writing assignment and each writing assignment (e.g. periodic lab reports, exams which include essay questions, a research/term paper etc.) should be due in stages throughout the semester to allow the writer to revise after receiving feedback from the instructor. Include an indication of how writing is to be evaluated and entered into course grade determination.]

There will be a topical essay due at the end of the 15th week of the term based on a topic that the student selects, with approval of the instructor. The topic should be on an astronomy observation, discovery or observatory and how it has influenced culture. Topics and an outline must be approved by the end of the 6th week (submit a one paragraph proposal with an outline). A complete draft of the essay is submitted by the end of the 11th week. The paper should be a short scholarly article that explains the topic at a level appropriate for amateur astronomers. The essay is expected to be no fewer than 2000 words and should include illustrations, figures, and/or tables to help explain the material. Proper citations are required. Essays will be graded on Originality of topic (10%), Astronomy Understanding (50%), Cultural Impact (20%), and Composition/Grammar (20%).

Section 2.

Reviewer Comments:

Jerome Buerki (jerome.buerki) (Mon, 16 Mar 2020 19:39:54 GMT): Rollback: Rolled back to implement modifications as discussed with author of the course proposal

Key: 14026