UNIVERSITY CURRICULUM COMMITTEE

Proposal for New Course

1. Is this course being proposed for Liberal Studies designation? Yes ☒ No ☐
   If yes, route completed form to Liberal Studies.

2. New course effective beginning what term and year? (ex. Spring 2008, Summer 2008) **Fall 2006**
   See effective dates schedule.

3. College **Engineering and Natural Sciences** 4. Academic Unit **Physics and Astronomy**

5. Course subject/catalog number **AST 201** 6. Units **3**

7. Co-convened with _____ 6a. Date approved by UGC _____
   (Must be approved by UGC prior to bringing to UCC. Both course syllabi must be presented)

8. Cross-listed with _____
   (Please submit a single cross-listed syllabus that will be used for all cross-listed courses.)

9. Long course title **Introduction to Indigenous Astronomy**
   (max 100 characters including spaces)

10. Short course title (max. 30 characters including spaces) **Intro to Indigenous Astronomy**

11. Catalog course description (max. 30 words, excluding requisites).

This is a course in comparative astronomy, as seen through the eyes of indigenous peoples and western astronomers, which provides an introduction to ancient and living astronomies of native cultures.

12. Grading option: Letter grade ☒ Pass/Fail ☐ or Both ☐
   (If both, the course may only be offered one way for each respective section.)

13. Is this a topics course? Yes ☐ No ☒

14. May course be repeated for *additional* units? yes ☐ no ☒
   a. If yes, maximum units allowed? _____
   b. If yes, may course be repeated for additional units in the same term? (ex. PES 100) yes ☐ no ☐
      i. If yes, max units/term _____

15. Please check **ONE** of the following that most appropriately describes the course:

   a. Lecture w/0 unit embedded lab ☐ Lecture only ☒ Lab only ☐ Clinical ☐ Research ☐

   Seminar ☐ Field Studies ☐ Independent Study ☐ Activity ☐ Supervision ☐

   b. In addition to the above, it will also be taught: Web ☒ ITV ☐ Hybrid web ☐ Hybrid ITV ☐

16. Prerequisites (must be completed ***before*** proposed course) **None**

17. Corequisites (must be completed ***with*** proposed course) **None**

18. If course has no requisites, will all sections of the course require (check one):

   instructor consent ☐ department consent ☐ no consent ☒

19. Is the course needed for a plan of study (major, minor, certificate? yes ☐ no ☒
Name of new plan? _____
Note: A new plan or plan change form must be submitted with this request.

20. Does course duplicate content of existing courses within or outside of your college? yes ☐ no ☒
If yes, list any courses this course may have duplicative material with and estimate percentage of duplication:

_____

_____

_____

_____

Please attach letters of support from each department whose course is listed above.

21. Will this course affect other academic plans, academic units, or enrollment? yes ☐ no ☒
If yes, explain in justification and provide supporting documentation from the affected departments.

22. Is a potential equivalent course offered at a community college (lower division only)? yes ☐ no ☒
If yes, does it require listing in the *Course Equivalency Guide*? yes ☐ no ☐
Please list, if known, the institution, subject/catalog number of the course. _____

23. Justification for new course, including unique features if applicable. (Attach proposed syllabus in the approved university format).

This is a web-based liberal studies course that is designed to increase cultural awareness of the indigenous peoples through their traditional view of astronomy and the universe, and how this view impacts their culture and their daily lives. It addresses both primary and secondary goals of US Ethnic Diversity as well as the goals of Cultural Understanding through a comparative study of indigenous and western astronomies. No such course exists at NAU.

24. Names of current faculty qualified to teach this course **Nancy C. Maryboy, David Begay, David Koerner**

25. If course will require additional faculty, space, or equipment, how will these requirements be satisfied? **None**

26. Will present library holdings support this course? yes ☒ no ☐

If the course being submitted for approval is NOT a LIBERAL STUDIES course, please go to step 42.

LIBERAL STUDIES ONLY

Contact name: Barry L lutz **Contact email: Barry.Lutz@nau.edu**

Dept. Chair name: David Cornelison **Dept. Chair email: David.Cornelison@nau.edu**

College Contact name : Barry L Lutz **College Contact email: Barry.Lutz@nau.edu**

27. This course is a ☐ Single section ☒ Multi-section

28. List names of faculty who may teach this course: **Nancy C Maryboy, David Begay, David Koerner**

29. Section enrollment cap: **25**

If this course is being submitted for approval as a new LIBERAL STUDIES course, please complete questions 30-33.

OR

If this course is being submitted for approval as a new JUNIOR LEVEL WRITING course, please complete questions 37-38.

OR

If this course is being submitted for approval as a new SENIOR CAPSTONE course, please complete questions 39-41.

NEW LIBERAL STUDIES COURSE

30. Thematic Focus (check all that apply): ***If a topics course, must apply to ALL sections.***

Environmental Consciousness ☒ Technology and Its Impact ☒ Valuing the Diversity of Human Experience ☒

31. Distribution Block (check one): ***If a topics course, must apply to ALL sections.***

Aesthetic and Humanistic Inquiry ☐ Cultural Understanding ☒ Lab Science ☐

Science/Applied Science ☐ Social and Political Worlds ☐

32. Skills (check two): ***If a topics course, must apply to ALL sections.***

Creative Thinking ☐ Critical Reading ☐ Effective Oral Communication ☐ Effective Writing ☐ Critical Thinking ☒

Ethical Reasoning ☒ Quantitative/Spatial Analysis ☒ Scientific Inquiry ☒ Use of Technology ☒

33. Is this a topics course? Yes ☐ No ☒

If YES, please complete questions 34-36. If NO, please go to question 42.

TOPICS COURSE ONLY

34. Identify the Student Learning Outcomes that will be found in ALL topic syllabi offered under this course number. _____

35. Explain by what method(s) Student Learning Outcomes will be assessed in ALL topic syllabi offered under this course number.

_____

36. Please attach an example of a Topic Syllabus offered under this course number.

GO TO question 42.

NEW JUNIOR LEVEL WRITING COURSE (*refer to question 19*)

37. To which degree programs offered by your department/academic unit does this proposal apply? _____

38. Do you intend to offer ABC 300 and ABC 300W? yes ☐ no ☐
If no, please submit a course delete form for the ABC 300.

GO TO question 42

NEW SENIOR CAPSTONE COURSE (*refer to question 19*)

39. To which degree programs offered by your department/academic unit does this proposal apply? _____

40. Does this proposal replace or modify an existing course or experience? yes ☐ no ☐
If yes, which course(s)? _____

41. Do you intend to offer ABC 400 and ABC 400C? yes ☐ no ☐
If no, please submit a course delete form for the ABC 400.

42. Approvals

Department Chair (if appropriate) Date

Chair of college curriculum committee Date

Dean of college Date

For Committees use only

For Liberal Studies Committee **Date**

Action taken:
_____ Approved as submitted _____ Approved as modified

For University Curriculum Committee **Date**

Action taken:

_____ Approved as submitted _____ Approved as modified

COURSE SYLLABUS – APPROVED FORMAT

General Information:

- College of Engineering and Natural Sciences
- Department of Physics and astronomy
- AST 201: Introduction to Indigenous Astronomy
- Fall 2006
- Web Course: 3 credit hours
- Instructors: Nancy C. Maryboy and David Begay
- Email: Nancy.Maryboy@ nau.edu, dbegay@kanaka.com
- Office hours: Scheduled Online "chats" and via email

Course prerequisites: None

Course description: This is a course in comparative astronomy, as seen through the eyes of indigenous peoples and western astronomers. The course will provide an introduction to ancient and living astronomies of native peoples and a comparison with the modern space science of exploration. It will examine how indigenous cultures reference the skies and how they integrate the human into the cosmos. It will examine the importance of worldview and how it affects a person's perception of the universe. It will focus on observation-based astronomy and the use of technology in the study of indigenous astronomy. It will examine the use of cultural ethics in the study of space science and traditional native astronomy. The primary cultural focus will be on Navajo Astronomy.

Thematic Focus: The primary thematic focus of the course is *Valuing the Diversity of Human Experience*, since it will be examining the astronomies of different indigenous cultures. In addition the course will touch on *Environmental Consciousness*, as indigenous astronomies interconnect earth and sky, and on *Technology and its Impact* as we explore the use of technology in the past and present day study of indigenous astronomy.

Distribution Block: The course is designed to advance *Cultural Understanding* through a comparison of ancient and living astronomies of native peoples with western astronomy and modern advances in space science exploration, and of the cultural ethics of traditional native astronomy with those of modern space science.

Essential skills: This course will address several of the liberal studies essential skills. It will focus on *Critical Thinking*, *Ethical Reasoning*, *Scientific Inquiry*, and, because of its web-based delivery, the *Use of Technology*.

Student Learning Expectations/Outcomes for this Course: After successful completion of this course, you will be able to:

(a) Use critical reasoning to describe the differences between indigenous ways of knowing the sky and the astronomy of western science, in terms of worldview and application.

(b) Use knowledge gained from direct observation, critical thinking and technology-base analyses to locate the moon, planets and stars that are important to indigenous peoples and describe their phases, cycles and significance.

(c) Use internet technology to communicate with classmates, professors and guest lecturers from around the world, representing various indigenous and scientific cultures.

(d) Use cultural ethics to describe the relationship of man to the universe, valuing the diversity of the human experience

Course structure/approach: This is a web-based class. All your readings, assignments and final report will be available via WebCT. You will be expected to contribute to threads or chats on a weekly basis. You will be expected to submit a Sky Journal four times during the semester. It is expected that you will keep up with the class on a weekly basis, so as to be able to contribute to the threads and chats.

Due to the cultural nature of some materials in this course, some course content such as seasonal elements of Navajo Astronomy will be taught during the winter months only (October to March). The course outline will be flexible to allow for this protocol, providing Navajo Astronomy during the beginning or end of the course.

You can email the professors at any time and you will receive timely feedback.

Textbook and required materials: There is no specific textbook for this course. Required reading material will be provided by the course instructors and guest lecturers via WebCT. The required reading assignments and their due dates will be listed with the attached course outline. The actual readings will be accessible from the course website listed as weekly modules.

The course follows the traditional ways of knowledge transmission in this course, updated to internet communication. Consequently knowledge holders of specific native cultures as well as scientists will provide readings from their cultures. These will form the foundation for the reading assignments. It is expected that all students will keep up on the reading assignments and threads/chats as the class progresses.

Recommended optional materials/references (attach reading list): None.

Course outline:

Date	*Topic*
Week 1	Introduction to Course, Overview, Definitions, Assignments, Grading
Week 2	Worldviews, Juxtaposition of Western Science/Native Ways of Knowing
Week 3	Basic Astronomy, Know the Sky, Constellations, Direct Observation and Using the Internet
Week 4	Indigenous Astronomy, Research Protocol, Introduction to Navajo Astronomy
Week 5	Navajo Astronomy
Week 6	Navajo Astronomy
Week 7	Southwest Astronomy and Archaeoastronomy (Bates and Gchachu)
	Midterm Exam
Week 8	NASA: Exploring the Skies, Sun Earth Connection (Troy Cline, Dr. Isabel Hawkins

Week 9	Trickster in the Skies: Chaos Theory, Yakama River People (Dr. Lloyd Pinkham), Blackfoot (Amethyst First Rider), Cherokee Rabbit, Navajo Coyote
Week 10	Hawaiian Astronomy: The Great Navigators
Week 11	Polynesian Astronomy: Across the Pacific
Week 12	Southern Skies: Maya and Inca Astronomy
Week 13	Circumpolar Astronomy: Alaska and Sami
Week 14	Final Reports
Week 15	Final Reports and Conclusion of Course

Assessment of Student Learning Outcomes:

Methods of Assessment and Timeline for Assessment: We will use four different instruments to assess achievement of the course objectives listed above.

1. One midterm exam will include multiple-choice and/or short essay questions, and will address both your knowledge of basic astronomical facts and your conceptual understanding of indigenous astronomy.

2. You will keep a Sky Journal with records of assigned observations and your interpretations. The Sky Journal will be submitted four times during the semester.

3. You will communicate with students and professors on a timely basis through submissions of comments in threads or chats.

4. You will submit a final project report by the end of the semester. This project will be on a subject of your own choosing, based on one indigenous astronomy and approved by the instructor. You will submit a report on the development of the project by mid term.

Homework Assignments: Assignments will be reading, observation, Sky Journals and final project report.

Sky Journal Assignments: You will be expected to keep a Sky Journal with reports of direct observation in accordance with specific assignments. Your journal may be a reference for your contributions to the threads/chats. The assignments will be listed with the weekly modules of reading materials. The Sky Journal will be submitted four times during the semester, as listed in the course outline.

Threads/Chats: Because this is a web-based course there are no traditional face to face lectures. In order to maintain communication among students and professors, participation in threads or chat rooms will be required. At the beginning of the semester each student will briefly introduce themselves in the first week's thread.

Each week will begin a new thread related to the weekly module topic. Students will be expected to contribute at least two threads to the discussions. The professors will also contribute to the discussions.

Grading System: The grades will be determined by the following weighting of the grade components:

Sky Journal	20%
Midterm Exam	20%
Threads/Chats	30%
Final Project	30%

Final grades will be assigned according to the following rubric:

90 – 100%	A
80 – 89%	B
70 – 79%	C
60 – 69%	D
< 60%	F

The instructor reserves the right to curve the grades.

Course Policy:

Retests/makeup tests: Due dates for all tests and assignments will specified upon distribution by the instructors. Late submissions will not be accepted.

Attendance: Because this is a web-based course there are no traditional face to face lectures and attendance is not taken. However, to maintain communication among students and professors, participation in threads or chat rooms will be required. Each week will begin a new thread related to the weekly module topic. Students will be expected to contribute at least two threads to each discussion. The professors will also contribute to the discussions.

Statement on plagiarism and cheating: No form of academic dishonesty will be tolerated. Please see the Student Code of Conduct for definition of academic dishonesty and the sanctions that may be imposed by the instructors if you are guilty of any of them.

If you wish to drop the class, you must do it before the Drop Deadline. ***The College and the Department will not approve dropping any class after the deadline, unless there are verifiable reasons beyond the student's control, such as medical emergencies.*** You should read the College/Department Drop Policy and recognize that it is enforced.

Other Departmental, College and University Policies: Please read the policies posted at http://www.physics.nau.edu/COURSES/POLICY/policy.html

DIVERSITY COURSE/PROGRAM SUBMISSION FORM

Indicate for which Diversity Area the course/program is being submitted:

U.S. Ethnic Diversity XXXXXX Global Diversity Awareness _____

Course Prefix and Number AST 201

Course Title Introduction to Indigenous Astronomy

Justification: **This is a web-based liberal studies course that is designed to increase cultural awareness of the indigenous peoples through their traditional view of astronomy and the universe, and how this view impacts their culture and their daily lives. The course specifically studies the ways that Native American people perceive the skies and how their perspectives are similar to and/or different from those expressed in the science of western astronomy.**

It directly addresses the primary goal and all the secondary goals of a US Ethnic Diversity course, as well as the goals of Cultural Understanding through a comparative study of indigenous and western astronomies. Although it emphasizes the astronomy of southwestern American Indians, it includes modules on native American cultures from the Plains, from Alaska, and from the Pacific Islands (Hawaii and Polynesia). It also includes ancient cultures such as Mayan and Incan.

No such course currently exists at NAU (or in the state of Arizona).

Please attach support documentation, including the catalogue description and course syllabus. If a program is being submitted, please attach support documentation. New courses must first have College Curriculum Committee approval. ***(all documentation must be submitted electronically and hard copy).***

Check one: new course: XXXX modified course: _____ existing course: _____

Department Contact Information:

Name: Barry L Lutz

Phone Number 928-523-9117

Email Address Barry.Lutz@nau.edu

Campus Box Number 6010

Date of submission October 24, 2005

_____ _____

Signature of Department Chair Signature of Dean

Submit electronic and hard copy original to Associate Provost for Academic Administration, Ronald.Pitt@nau.edu, Box 6052.

Approved by UCC: 5/04/04