Proposal for a New Course

NOTE: All gray text boxes must be completed (even if you just put N/A into them), otherwise the committee must consider the form incomplete.

1. Department: Honors College / Physics and Astronomy

2. Course Number and Title: HONS 160; Honors Astronomy II
   Number of Credits:  3    Total hrs/week:  3
   Lecture: ☒  Lab:  ☐  Recitation:  ☐  Seminar:  ☐

For Independent study courses:
   Research:☐  Field experience: ☐
   Clinical Practice: ☐  Internship: ☐
   Practicum: ☐  Independent Course Work: ☐

3. Semester and year when course will first be offered:
   Spring 2012

4. Catalog Description (please limit to 50 words):
   (This course is the Honors College equivalent of ASTR 130.) A continuation of HONS 159 (Honors Astronomy I)

5. Check if appropriate: Humanities: ☐  Social Science: ☐ (meets minimum degree requirements)

6. Check if appropriate: ☐
   This course will be cross listed with: N/A
   Rationale for cross listing: N/A
   Please attach letters of support from the chairs of each department indicating that the department has discussed the proposal and supports it.

7. a) Could another department or program also be a logical originator of this course (i.e. History of American Education could originate in both the Teacher Education and the History departments)? If yes, what department/program? Please contact the department chair/program director and request a note or email that they are aware of the proposed new course and include that note with the proposal. No

b) Please explain overlap with any existing courses.
   This course is the Honors College equivalent of ASTR 130. It uses a more advanced textbook than ASTR 129 and ASTR 130, considers some subjects in greater depth with separate chapters on special relativity, general relativity and the particle theory of matter, has more reading beyond the textbook, additional activities outside the classroom and more writing assignments and projects.
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8. Prerequisites (or other restrictions):
   The course assumes a working knowledge of algebra and trigonometry. HONS 159 and HONS 159L are prerequisites. HONS 160L is a co-requisite.

9. Rationale/justification for course (consider the following issues):
   a) What are the goals and objectives of the course?
   The course goals are to provide the student with:

   1. A broad understanding of the nature, scope, and evolution of the Universe, and where the Earth and Solar System fit in;
   2. An understanding of a limited number of crucial astronomical quantities, together with some knowledge of appropriate physical laws;
   3. The concept that physical laws and processes are universal;
   4. The concept that the world is knowable, and that we are coming to know it through observations, experiments, and theory;
   5. An understanding of the nature of progress in science;
   6. Exposure to the types, roles, and degrees of uncertainty in science;
   7. An understanding of the evolution of physical systems;
   8. An acquaintance with the history of astronomy and the evolution of scientific ideas and an understanding of science as a cultural process;
   9. Familiarity with the night sky and how its appearance changes with time and position on Earth;

   Additional goals for the course are to provide the student training in:

   10. The roles of observations, experiments, theory, and models in science;
   11. Analyzing evidence and hypotheses;
   12. Critical thinking, including appropriate skepticism;
   13. Hypothesis testing (experimental design and following the implications of a model);
   14. Quantitative reasoning and the ability to make reasonable estimates;
   15. The role of uncertainty and error in science;
   16. How to make and use spatial/geometrical models;

   b) How does the course support the mission statement of the department and the organizing principles of the major?
   The course provides the Honors College with a needed general education science course in a traditional area.

10. a) For courses in the major, how does the course enhance the beginning, middle, or end of the major?
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Serves as an entry level course.

b) For courses used by non-majors, how does the course support the liberal arts tradition including linkages with other disciplines:

When taught as a special topics course, special assignments were made with a linkage to other disciplines in mind. These assignments included attending art exhibits and lectures, Darwin week philosophy lectures, letter writing to publications and government agencies and other related assignments. Coincidently astronomy was one of the seven original liberal arts, one of the four quadrivium subjects.

11. Method of teaching:

Some lecture, much Socratic teaching, group research projects, individual research projects, outside readings and discussions.

12. a) Address potential enrollment pattern shifts in the department or college-wide related to the offering of this course:

None expected as this course has been offered as a special topics course.

b) Address potential shifts in staffing of the department as it relates to the offering of this course:

None expected.

c) Frequency of offering:

- each fall: 
- each spring: ☒
- every two years: 
- every three years: 
- other ☐ (Explain):  

13. Requirements for additional resources made necessary by this course:

a) Staff:

N/A

b) Budget:

N/A

c) Library:

N/A

14. Is this course to be added to the Degree Requirements of a Major, Minor, Concentration or List of Approved Electives?

a) ☐ yes  ☒ no

b) If yes, complete the Change Degree Requirements form(s) and list the name(s) of the
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major, minor, concentration and/or list of approved electives here:

15. Paste syllabus, reading lists, or any additional documentation that can help the committee evaluate this proposal (a syllabus is mandatory).

A syllabus from the last time the course was taught as a special topics course is provided at the end of this form.
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14. Signature of Department Chair or Program Director:

__________________________________________

Date: _______________________

15. Signature of Dean of School:

__________________________________________

Date: _______________________

16. Signature of Provost:

__________________________________________

Date: _______________________

17. Signature of Business Affairs Official

__________________________________________

Date: _______________________

18. Signature of Curriculum Committee Chair

__________________________________________

Date: _______________________

19. Signature of Faculty Senate Secretary:

__________________________________________

Date Approved by Senate: _______________________

Completed form should be sent by the Faculty Senate Secretary to the Registrar. After implementation, information concerning the passed course and program changes will be provided by the Registrar to all faculty and staff on campus.
Instructor: T. R. Richardson

Spring 2011
Hollings Science Center, Room 126
Mondays, Wednesdays and Fridays
3:00–3:50 PM

Lecture Syllabus
Contact Information:

T. R. Richardson
Office Location: RHSC room 102
Office: (843) 953-8071;
Cell: (843) 670-7878;
email: richardsont@cofc.edu

Office Hours:
Mon, Wed, Fri 10:45–11:45 AM and 1–2:30 PM
Tue, Thu Noon–3 PM
other times by appointment including some weekends

Contacting me:
Contacting me is easy. Use email if it is not complicated or time sensitive (i.e., something that same day). Otherwise use the phone. You can try my office but it is better to use my cell phone. Because of classes and meetings it is often turned off, so follow the instructions to send a page with your phone number and I'll call you back. Alternately you could text me with your phone number or message. My cell phone for school will not take voice messages, even if it seems to, so please don't try to leave a message. I will try to call you back right away but I am never "it" when it comes to phone tag. If you have not heard back from me, try calling again.

Objectives:

This course is a two-semester survey of contemporary astronomy. As this instructor views the course, it has a number of objectives. They are to provide the student with:

1. A broad understanding of the nature, scope, and evolution of the Universe, and where the Earth and Solar System fit in.
2. An understanding of a few crucial astronomical quantities, together with some knowledge of appropriate physical laws.
3. An understanding that physical laws and processes are universal.
4. An understanding that the world is knowable, and that we are coming to know it through observations, experiments, and theory.
5. An understanding of the types, roles, and degrees of uncertainty in science
6. An understanding of the evolution of physical systems
7. Some knowledge of related subjects and a set of useful "tools" from related subjects such as mathematics
8. An acquaintance with the history of astronomy and the evolution of scientific ideas.
9. Familiarity with the night sky and how its appearance changes with time and position on Earth

One last objective is to have a reasonably good time accomplishing the previous ones.

Textbooks:

Our textbook, The Cosmic Perspective by Bennett, Donahue, Schneider and Voit, fifth edition is a good one. I know the lead author personally and he has come to the College to talk with our students. The text is highly readable and informative.

Attendance:

Roll will be taken. The wise student will attend all classes. There are ideas we explore in class that are difficult for the individual to consider outside of the classroom. Be there or be left out.

Tests:

There will be four major tests. The lowest test grade will be dropped in the computation of the final grade. If a student is absent from a test, that absence is normally treated as that student’s dropped grade depending on the circumstances.

Little Grades:

There will be a variety of small graded activities including weekly quizzes, ten-minute paragraphs, and homework assignments. These activities are assigned little grades (0 – 10) and the little grade average is used in computing the final course grade.

Writing Assignments:

There will be one major writing assignment. Information about this assignment will be provided at a later time.
Final Exam:
There will be a final exam. It will be comprehensive.

Grading:
The final course grade has four components as follows.

- Major tests 48% (16% each)
- Writing assignment 16%
- Little grade average 16%
- Final exam 20%

The grading scale for this course is listed below.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Minimum Score</th>
<th>Maximum Score</th>
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<tbody>
<tr>
<td>A</td>
<td>92.5 – 100</td>
<td>C</td>
</tr>
<tr>
<td>A-</td>
<td>89.5 – 92.4</td>
<td>C-</td>
</tr>
<tr>
<td>B+</td>
<td>87.5 – 89.4</td>
<td>D+</td>
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<tr>
<td>B</td>
<td>82.5 – 87.4</td>
<td>D</td>
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<td>B-</td>
<td>79.5 – 82.4</td>
<td>D-</td>
</tr>
<tr>
<td>C+</td>
<td>77.5 – 79.4</td>
<td>F</td>
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</tbody>
</table>

Important Dates:
If you keep a calendar, then you will want to put these dates on it now. If you don't keep a calendar, consider getting one and using it to stay organized.

- Test #1 Fri., Jan. 28
- Test #2 Fri., Feb. 18
- Test #3 Mon., March 21
- Writing Assignment TBA
- Test #4 Fri., April 15
- Final Exam Sat., April 30 Noon – 3 PM in our regular classroom

Disabilities and SNAP:
If your situation falls under the guidelines of the programs in the SNAP office, please come to my office so we can talk about how to handle your particular situation. This class is SNAP friendly but sooner is better than later if we need to arrange accommodations.

The College Honor Code:
Every society has its rules that help that society to function. The College Honor Code contains some of the rules all of us are expected to follow for the years we are together here. Every individual has rules of their own to guide their life. Make your rules consistent with the College Honor Code and trust that I have done the same.

Online Resources:
My webpage: http://richardsont.people.cofc.edu/
Course webpage: http://richardsont.people.cofc.edu/h390/

The course web page is the source for assignments, updates and supplemental material. The semester schedule is the first item in the links and I suggest checking the schedule every weekend since I do class updates on Friday afternoon or Saturday. If you lose or forget the link, just think. The College faculty server is easy to recall (http://people.cofc.edu). Just remember there is no www. When you call up that site, the faculty web pages are listed. Go to my page where you navigate to a link to our course.
### One Page Overview

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Date</th>
<th>Read Before Class</th>
<th>Week</th>
<th>Day</th>
<th>Date</th>
<th>Read Before Class</th>
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<tbody>
<tr>
<td>1</td>
<td>Mon</td>
<td>10-Jan</td>
<td>Ch13</td>
<td>Mon</td>
<td>7-Mar</td>
<td>spring break</td>
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<td>Wed</td>
<td>12-Jan</td>
<td>Ch13</td>
<td>Wed</td>
<td>9-Mar</td>
<td>spring break</td>
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<tr>
<td></td>
<td>Fri</td>
<td>14-Jan</td>
<td>Ch S2</td>
<td>Fri</td>
<td>11-Mar</td>
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<td>9</td>
<td>Mon</td>
<td>14-Mar</td>
<td>Ch 19</td>
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<tr>
<td></td>
<td>Wed</td>
<td>19-Jan</td>
<td>Ch S2</td>
<td>Wed</td>
<td>16-Mar</td>
<td>Ch 19</td>
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<tr>
<td></td>
<td>Fri</td>
<td>21-Jan</td>
<td>Ch S2/S3</td>
<td>Fri</td>
<td>18-Mar</td>
<td>Ch 19/20</td>
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<tr>
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<td>24-Jan</td>
<td>Ch S3</td>
<td>10</td>
<td>Mon</td>
<td>21-Mar</td>
<td>Quiz #3 (Chs 16—19)</td>
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<td>Wed</td>
<td>23-Mar</td>
<td>Ch 20</td>
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<tr>
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<td>Fri</td>
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<td>Quiz #1 (Chs 13—S3)</td>
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<td>25-Mar</td>
<td>Ch 20</td>
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<td>Ch S4</td>
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<td>Fri</td>
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<td>Ch 14</td>
<td>Fri</td>
<td>1-Apr</td>
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<td>Ch 14/15</td>
<td>12</td>
<td>Mon</td>
<td>4-Apr</td>
<td>Ch 22</td>
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<td>Ch 15</td>
<td>Wed</td>
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<td>11-Feb</td>
<td>Ch 15</td>
<td>Fri</td>
<td>8-Apr</td>
<td>Ch 22/23</td>
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<td>14-Feb</td>
<td>Ch 15</td>
<td>13</td>
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<td>11-Apr</td>
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<td>16-Feb</td>
<td>Ch 15</td>
<td>Wed</td>
<td>13-Apr</td>
<td>Ch 23</td>
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<td>Fri</td>
<td>18-Feb</td>
<td>Quiz #2 (Chs S4—15)</td>
<td>Fri</td>
<td>15-Apr</td>
<td>Quiz #4 (Chs 20—23)</td>
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<td>7</td>
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<td>Ch 16</td>
<td>14</td>
<td>Mon</td>
<td>18-Apr</td>
<td>Ch 24</td>
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<td>Ch 16/17</td>
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<td>20-Apr</td>
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<td>Ch 17</td>
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<td>29-Apr</td>
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<td>Sat</td>
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<td>Sat</td>
<td>30-Apr</td>
<td>Exam is Noon-3 PM (for MWF 3 PM classes)</td>
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