FACULTY CURRICULUM COMMITTEE
COURSE FORM

Instructions:
• Please fill out one of these forms for each course you are adding, changing, deactivating, or reactivating.
• Fill out the parts of the form specified in part B. **You must do this before your request can move forward!**
• Remember that your changes will not be implemented until the next catalog year at the earliest.
• If you have questions, start by checking the instructions on the website. Please feel free to contact the committee chairs with any remaining questions you might have.

A. CONTACT/COURSE INFORMATION.

Name: P. Chris Fragile Phone: 953-3181 Email: fragilep@cofc.edu
Department or Program: Physics & Astronomy School: SSM
Subject Acronym and Course Number: ASTR 206
Catalog Year in which changes will take effect: FALL 2014

B. TYPE OF REQUEST. Please check all that apply, then fill out the specified parts of the form.

☐ Add a New Course (complete parts C, D, F, G, H, I, J, K)
☒ Change Part of an Existing Course (complete parts C, D, E, F, G, I, J, K)
☐ Course Number
☐ Course Name
☐ Course Description
☐ Credit/Contact Hours
☒ Restrictions (prerequisites, co-requisites, junior/senior standing, etc.)
☐ Deactivate an Existing Course (complete parts C, D, E, G, I, J, K)
☐ Reactivate a Previously-Deactivated Course (complete parts C, D, E, G, I, J, K)

C. RATIONALE AND EXPLANATION. Please describe your request and explain why you are making it.

In a separate proposal, we are introducing a new Introduction to Astrophysics course (ASTR 231) as a sophomore-level bridge between our Introductory Physics courses and our upper-level astrophysics electives. Here we propose that we change the course number of ASTR 206 to ASTR 306 to reflect that it is now intended to be a junior-senior elective. We also propose making the new Introduction to Astrophysics course the pre-requisite.

D. IMPACT ON EXISTING PROGRAMS AND COURSES. Please briefly describe the impact of your request on your own programs and courses as well other programs and courses. If another program requires the course, you must submit their written acknowledgement with this proposal. Also, the affected program must describe any change in the number of credit hours they require. Include a list of similar courses in other departments and explain any overlap.

This change will have very little effect on existing programs and courses. It is simply changing the course number and prerequisite for an existing course.
E. EXISTING COURSE INFORMATION. If you are proposing a new course, just leave this blank. Otherwise, please fill out all fields.

Department: Physics & Astronomy   School: SSM   Subject Acronym: ASTR   Course Number: 206

Credit hours: _3_ lecture __ lab __ seminar __ independent study
Contact hours: _3_ lecture __ lab __ seminar __ independent study

Course title: Planetary Astronomy

Course description (maximum 50 words, exactly as it appears in the catalog):

The nature and origin, evolution, and current state of the solar system and extrasolar systems are reviewed. Celestial mechanics, planetary interiors, atmospheres and solar system debris are covered in depth.

Restrictions (pre-requisites, co-requisites, majors only, etc.):

Prerequisite: PHYS 111 (PHYS 101 and MATH 120 may substitute for PHYS 111 with permission of the instructor).

Cross-listing, if any:

Is this course repeatable? □ yes □ no   If yes, how many total credit hours may the student earn? ____

F. NEW COURSE INFORMATION. If you are deactivating a course, leave this blank. Otherwise, please fill out all fields. For changed courses, use boldface for the information that is changing.

Department: Physics & Astronomy   School: SSM   Subject Acronym: ASTR   Course Number: 306

Credit hours: _3_ lecture __ lab __ seminar __ independent study
Contact hours: _3_ lecture __ lab __ seminar __ independent study

Course title: Planetary Astronomy

Course description (maximum 50 words, exactly as it appears in the catalog):

The nature and origin, evolution, and current state of the solar system and extrasolar systems are reviewed. Celestial mechanics, planetary interiors, atmospheres and solar system debris are covered in depth.

Restrictions (pre-requisites, co-requisites, majors only, etc.):

Prerequisite: ASTR 231

If this is a newly-created course, is it intended to be the equivalent of an existing course and replace it? □ yes □ no
If so, which course? ___________

Note: You must deactivate that course by submitting an additional Course Form.

Cross-listing, if any (submit approval from relevant department):
Note: Cross-listed courses are equivalent.

Is this course repeatable? □ yes □ no   If yes, how many total credit hours may the student earn? ____

Is there an activity, lab, or other fee associated with this course? □ yes □ no   What is the fee? $____

Note: The Senate cannot approve new fees; Business Affairs will submit any such request to the Board of Trustees. The course can still be created, but the fee will not be attached until the Board has approved it.
G. COSTS. List all of the new costs or cost savings (including new faculty/staff requests, library, equipment, etc.) associated with your request.
   None.

H. STUDENT LEARNING OUTCOMES AND ASSESSMENT.

<table>
<thead>
<tr>
<th>Student Learning Outcomes</th>
<th>Assessment Method and Performance Expected</th>
</tr>
</thead>
<tbody>
<tr>
<td>What will students know and be able to do when they complete the course?</td>
<td>How will each outcome be measured? Who will be assessed, when, and how often? How well should students be able to do on the assessment?</td>
</tr>
<tr>
<td>1. Students will understand and apply principles of orbital mechanics and solve problems related to various dynamical processes that shape planetary systems.</td>
<td>All students will be assessed through homework, test, and final exam questions. Students should be able to score at least 70%.</td>
</tr>
<tr>
<td>2. Students will understand principles of planet formation. Students will be able to apply physical laws, such as the Virial Theorem, to evaluate hypothetical planet formation scenarios.</td>
<td>All students will be assessed through homework, test, and final exam questions. Students should be able to score at least 70%.</td>
</tr>
<tr>
<td>3. Students will understand the characteristics and origins of planet and moon interiors. This includes being able to apply differential equations of state to determine the interior structures of planets and moons.</td>
<td>All students will be assessed through homework, test, and final exam questions. Students should be able to score at least 70%.</td>
</tr>
<tr>
<td>4. Students will understand the characteristics and origins of planet atmospheres. This includes being able to apply differential equations of state to determine the structure and composition of planet atmospheres.</td>
<td>All students will be assessed through homework, test, and final exam questions. Students should be able to score at least 70%.</td>
</tr>
</tbody>
</table>

How does this course align with the student learning outcomes articulated for the major, program, or general education? What program-level outcome or outcomes does it support? Is the content or skill introduced, reinforced, or demonstrated in this course?

I. PROGRAM CHANGES. Will this course be added to the existing degree requirements or list of approved electives of a major, minor, or concentration? ☒ yes ☐ no

If yes, please attach a Change Minor and/or Change Major/Program Form as appropriate.
J. CHECKLIST.

☒ I have completed all relevant parts of the form.

☒ I have attached a cover letter that describes my request and lists all the documents I am submitting.

☐ (For new courses only) I have attached a syllabus.

☐ (For courses used in any way by other departments, including cross-listing) I have attached an acknowledgement from the relevant department.

☐ (For courses intended to fulfill a Gen Ed requirement) I have submitted the proposal to the Gen Ed committee.

☒ I have submitted one Signature Form that lists all of the different forms I am submitting.