

**UCC/UGC/ECCC**

Proposal for Course Change

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| **[x]  FAST TRACK (Select if this will** **be a fast track item. Refer to**  [***Fast Track Policy***](http://www4.nau.edu/avpaa/UCCPolicy/Agenda_FastTrack_Consent.docx) **for eligibility)** |

# *If the changes included in this proposal are significant, attach copies of original and proposed syllabi in* [*approved university format*](http://www4.nau.edu/avpaa/UCCForms/syllabus.doc)*.*

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| 1. Course subject and number: | **PHY 171** | 2. Units: | **5** |

 [**See upper and lower division undergraduate course definitions**](http://www4.nau.edu/avpaa/UCCPolicy/Uplow.doc).

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| 3. College: | CEFNS | 4. Academic Unit: | Physics and Astronomy |

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| 5. Current Student Learning Outcomes of the course.After finishing this course, students will be able to demonstrate their mastery of three basic objectives:Objective 1) Students will demonstrate an understanding of kinematics, which explains how objects move. They will be able to explain the concepts of position, velocity and acceleration, and how these concepts interact. A baseline assessment of this objective will involve the ability of the student to find the range, speed and timing of objects in motion.Objective 2) The student will understand why objects move as they do (Newton’s 3 Laws). A baseline assessment of this objective will involve the ability of the student to, for instance, analyze the forces on an object and predict its motion. The student will also be asked to find the required forces in order for an object to have a particular, desired motion. A corollary of this objective is that students understand the basic forces: Contact forces, Tension, Friction and Gravity. Electric and Magnetic forces are covered in the second semester of this course sequence.Objective 3) The student will understand the concepts of energy and momentum. A baseline assessment of this objective will involve the ability of the student to use the conservation of energy and/or momentum to predict the motion of an object. | Show the proposed changes in this column (if applicable). Bold the proposed changes in this column to differentiate from what is not changing, and Bold with strikethrough what is being deleted. *(*[*Resources & Examples for Developing Course Learning Outcomes*](http://www4.nau.edu/avpaa/Assessment/CourseLearningOutcomesPDF_090712.pdf)*)***UNCHANGED** |

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| 6. Current **title,** **description** and **units**. Cut and paste, in its entirety,from the current on-line academic catalog\* [**http://catalog.nau.edu/Catalog/**](http://catalog.nau.edu/Catalog/).PHY 171 - University Physics I For Physicists[Return to search](http://catalog.nau.edu/Courses)

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| **Description:** A calculus-based introductory physics course designed for physics majors. Classical Mechanics, Gravitation, Fluids. Credit will not be given for both PHY 161 and PHY 171. 4 hours lecture, 3 hours lab. Letter grade only.**Units:** 5 **Requirement Designation:** Lab Science **Prerequisite:** MAT 136 or MAT 136H  |

 | Show the proposed changes in this column **Bold** the proposed changes in this column to differentiate from what is not changing, and **~~Bold with strikethrough~~**what is being deleted.PHY 171 - University Physics I For Physicists[Return to search](http://catalog.nau.edu/Courses)

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| --- |
| **Description:** A calculus-based introductory physics course designed for physics majors. Classical Mechanics, Gravitation, Fluids. Credit will not be given for both PHY 161 and PHY 171. 4 hourslecture, 3 hours lab. Letter grade only.**Units:** 5 **Requirement Designation:** Lab Science**~~Prerequisite: MAT 136 or MAT 136H~~** **Co-requisite: MAT 136 or MAT 136H**  |

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\*if there has been a previously approved UCC/UGC/ECCC change since the last catalog year, please copy the approved text from the proposal form into this field.

 7. Justification for course change.

After three semesters of teaching the new course PHY 171, which meets an extra hour per week compared to the forerunner course PHY 161 for our majors, we now recognize that the extra hour allows us to present enough mathematical background so that students need MAT 136 as a co-requisite rather than as a pre-requisite. In addition, the change proposed here will allow physics and astronomy majors to begin taking classes in their major during their first semester at NAU.

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| 8. Effective **BEGINNING** of what term and year? | **Fall 2014** |
| [**See effective dates calendar**](http://www4.nau.edu/avpaa/timelines/1314Effective.xls). |  |

**IN THE FOLLOWING SECTION, COMPLETE ONLY WHAT IS CHANGING**

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| **CURRENT** | **PROPOSED** |
| Current course subject and number: | Proposed course subject and number: |
| Current number of units: | Proposed number of units: |
| Current short course title: | Proposed short course title (max 30 characters): |
| Current long course title: | Proposed long course title (max 100 characters): |
| Current grading option:letter grade [ ]  pass/fail [ ]  or both [ ]  | Proposed grading option:letter grade [ ]  pass/fail [ ]  or both [ ]  |
| Current repeat for additional units: | Proposed repeat for additional units: |
| Current max number of units: | Proposed max number of units: |
| Current prerequisite: MAT 136 or MAT 136H | Proposed prerequisite (include rationale in the justification):**NON E** |
| Current co-requisite:NONE  | Proposed co-requisite (include rationale in the justification): **MAT 136 or MAT 136H** |
| Current co-convene with: | Proposed co-convene with: |
| Current cross list with: | Proposed cross list with: |

9. Is this course in any plan (major, minor, or certificate) or sub plan (emphasis)? Yes [x]  No [ ]

 If yes, describe the impact. If applicable, include evidence of notification to and/or response

 from each impacted academic unit.

This course is in the B.S. Physics, B.S. Astronomy, B.S. Physics and Astronomy (merged), and B.S. Ed. Secondary Education; Physics. The change will have no impact on any of the plans other than enabling students to begin classes in their major during their first semester at NAU.

10. Is there a related plan or sub plan change proposal being submitted? Yes [x]  No [ ]

 If no, explain.

11. Does this course include combined lecture and lab components?                  Yes [x]  No [ ]

 If yes, include the units specific to each component in the course description above.

**Answer 12-15 for UCC/ECCC only:**

12. Is this course an approved Liberal Studies or Diversity course?                    Yes [x]  No [ ]         If yes, select all that apply.   Liberal Studies [x]    Diversity [ ]    Both [ ]

13. Do you want to remove the Liberal Studies or Diversity designation?            Yes [ ]  No [x]

 If yes, select all that apply.   Liberal Studies [ ]    Diversity [ ]     Both [ ]

14. Is this course listed in the [**Course Equivalency Guide**](https://aztransmac2.asu.edu/cgi-bin/WebObjects/Admin_CEG.woa/wa/ByInst?inst=NAU)?                               Yes [x]  No [ ]

15. Is this course a [**Shared Unique Numbering**](https://aztransmac1.asu.edu/cgi-bin/WebObjects/ATASS.woa/wa/SUNList?S=X) (SUN) course?                            Yes [x]  No [ ]

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| **FLAGSTAFF MOUNTAIN CAMPUS** |  |
| **Scott Galland**  | **10/28/2013** |
| Reviewed by Curriculum Process Associate | Date |
|  |  |
| **Approvals**: |  |
| **Stephen C. Tegler** | **2013 October 11** |
| Department Chair/Unit Head (if appropriate) | Date |
|  |  |
| Chair of college curriculum committee | Date |
|  | 12/18/13 |
| Dean of college | Date |
|  |  |
| **For Committee use only:** |  |
|  |  |
| UCC/UGC Approval | Date |

Approved as submitted: Yes [ ]  No [ ]

Approved as modified: Yes [ ]  No [ ]

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| **EXTENDED CAMPUSES** |  |
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| Reviewed by Curriculum Process Associate | Date |
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| **Approvals:**  |  |
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| Academic Unit Head | Date |
|  |
| Division Curriculum Committee (Yuma, Yavapai, or Personalized Learning) | Date |
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| Division Administrator in Extended Campuses (Yuma, Yavapai, or Personalized Learning) | Date |
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| Faculty Chair of Extended Campuses Curriculum Committee (Yuma, Yavapai, or Personalized Learning) | Date |
|  |
| Chief Academic Officer; Extended Campuses (or Designee) | Date |
|  |  |

Approved as submitted: Yes [ ]  No [ ]

Approved as modified: Yes [ ]  No [ ]