

**UCC/UGC/ECCC**

Proposal for Plan Change or Plan Deletion

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| **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 this proposal represents changes to the intent of the plan or its integral components, review by the college dean, graduate dean (for graduate items) and/or the provost may be required prior to college curricular submission.***

***All Plans with NCATE designation, or plans seeking NCATE designation, must include an NCATE Accreditation Memo of Approval from the NAU NCATE administrator prior to college curricular submission.***

***UCC proposals must include an updated 8-term plan.***

***UGC proposals must include an updated program of study.***

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| 1. College: | **CEFNS** | | | 2. Academic Unit: | | | **Physics and Astronomy** |
|  | |  |  | |  | | |
| 3. Academic      Plan Name: | | **B.S. Physics and Astronomy (merged) (PHYASTBS)** | | 4. Emphasis: | | **N/A** | |

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| 5. Plan proposal: | | Plan Change | | Plan Deletion | |
|  | New        Emphasis | | Emphasis       Change | | Emphasis             Deletion |

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| 6. Current student learning outcomes of the plan. If structured as plan/emphasis, include for **both c**ore and emphasis.  Students successfully completing this plan will understand the theoretical basis of the content in their major as well as possess laboratory procedural competence, critical and creative thinking skills, oral communication skills, and written communication skills | Show the proposed changes in this column (if applicable). **Bold** the changes, to differentiate from what is not changing, and change font to **~~Bold Red with strikethrough~~**for what is being deleted. *(*[*Resources, Examples & Tools for Developing Effective Program Student Learning Outcomes*](http://www4.nau.edu/avpaa/Assessment/ProgramLearningOutcomesPDF_090712.pdf)*).*  **UNCHANGED** |

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| 7. Current catalog plan overview and requirements in this column. Cut and paste the *Overview* and *Details* tabs, in their entirety, from the current on-line academic catalog: (<http://catalog.nau.edu/Catalog/>) ***Physics and Astronomy; B.S.***  In addition to University Requirements:   * At least 57-58 units of major requirements * Be aware that you may not use courses with either a PHY or AST prefix to satisfy liberal studies requirements * Elective courses, if needed, to reach an overall total of at least 120 units   Please note that you may be able to use some courses to meet more than one requirement. Contact your advisor for details.   | Minimum Units for Completion | 120 | | --- | --- | | Mathematics Required | [MAT 239](http://catalog.nau.edu/Courses/course?courseId=005224&catalogYear=1314) | | Research | Optional | | University Honors Program | Optional | | Progression Plan | [View Progression Plan](http://catalog.nau.edu/ProgressionPlans/index.jsp?inst=NAU00&cat=1314#PHYASTBS) |  *Major Requirements*Take the following 57 - 58 units:AST 280, AST 391, AST 401, AST 401L (10 units)AST 390 or AST 392 (3 units)(PHY 161 or PHY 171)\*, PHY 262, PHY 262L, PHY 263, PHY 264, PHY 265, PHY 301, PHY 321, PHY 331, PHY 332, PHY 361, PHY 441, PHY 471 (38-39 units)\*PHY 171 is recommended in consultation with your advisor.PHY 333W (3 units)Select one of the following capstone options:PHY 498C (3 units)1 unit of PHY 498C and 2 units of PHY 485C (3 units)*General Electives*Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)We strongly recommend chemistry courses through CHM 152 and CHM 152L.*Additional Information*Please note that you may not count more than one grade of "D" in a physics or astronomy course toward the major requirements for this degree.MAT 136, MAT 137, MAT 238, MAT 239, and PHY 301 are not required for this degree, but are prerequisites for other courses. (You may be able to count these prerequisites toward your liberal studies or general elective credit.) Be aware that some courses may have prerequisites that you must also take. For prerequisite information click on the course or see your advisor. | Show the proposed changes in this column.  **Bold** the changes, to differentiate from what is not changing, and change font to **~~Bold Red with strikethrough~~** for what is being deleted.  ***Physics and Astronomy; B.S.***  In addition to University Requirements:   * At least 57**~~-58~~** units of major requirements * Be aware that you may not use courses with either a PHY or AST prefix to satisfy liberal studies requirements * Elective courses, if needed, to reach an overall total of at least 120 units   Please note that you may be able to use some courses to meet more than one requirement. Contact your advisor for details.   | Minimum Units for Completion | 120 | | --- | --- | | Mathematics Required | [MAT 239](http://catalog.nau.edu/Courses/course?courseId=005224&catalogYear=1314) | | Research | Optional | | University Honors Program | Optional | | Progression Plan | [View Progression Plan](http://catalog.nau.edu/ProgressionPlans/index.jsp?inst=NAU00&cat=1314#PHYASTBS) |  *Major Requirements*Take the following 57 - **~~58~~** **59** units:AST 280, AST 391, AST 401, AST 401L (10 units)AST 390 or AST 392 (3 units)(PHY 161 or PHY 171**\*) (4-5 units)****(**PHY 262/ PHY 262L **or PHY 172\*) (4-5 units)****\* PHY 171 and PHY 172 are recommended in consultation with your advisor.**PHY 263, PHY 264, PHY 265, PHY 301, PHY 321, PHY 331, PHY 332, PHY 361, PHY 441, PHY 471 (**~~38-39~~ 30** units)**~~\*PHY 171 is recommended in consultation with your advisor.~~**PHY 333W (3 units)Select one of the following capstone options:PHY 498C (3 units)1 unit of PHY 498C and 2 units of PHY 485C (3 units)*General Electives*Additional coursework is required, if, after you have met the previously described requirements, you have not yet completed a total of 120 units of credit.You may take these remaining courses from any academic areas, using these courses to pursue your specific interests and goals. We encourage you to consult with your advisor to select the courses that will be most advantageous to you. (Please note that you may also use prerequisites or transfer credits as electives if they weren't used to meet major, minor, or liberal studies requirements.)We strongly recommend chemistry courses through CHM 152 and CHM 152L.*Additional Information*Please note that you may not count more than one grade of "D" in a physics or astronomy course toward the major requirements for this degree.MAT 136, MAT 137, MAT 238, MAT 239, and PHY 301 are not required for this degree, but are prerequisites for other courses. (You may be able to count these prerequisites toward your liberal studies or general elective credit.) Be aware that some courses may have prerequisites that you must also take. For prerequisite information click on the course or see your advisor. |

8. Justification for proposal:

**The new PHY 172 course is being created as the preferred alternative to PHY 262 for most majors in the Department of Physics and Astronomy. We are leaving PHY 262 as an alternative because we will definitely not be able to offer PHY 172 as often as PHY 262, e.g. every semester plus summer, and we do not want to hold students back.**

9. NCATE designation, if applicable**:**

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| Initial Plan |  | Advanced Plan | | | |  | Remove Designation | |
| 10. Effective beginning **FALL**: | | | **2014** | |  | | |
| [**See effective dates calendar**](http://www4.nau.edu/avpaa/timelines/1314Effective.xls). | | | |  | | | |

11. Will this proposal impact other plans, sub plans, or course offerings, etc.? Yes      No

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

each impacted academic unit

**Answer 12-13 for UCC/ECCC only:**

12. A major is differentiated from another major by required course commonality: 24 units of the        required credit hours of a major must be unique, (i.e. not common or not dual use as a required        element in another major), to that major. Does this plan have 24 units of unique required        credit? Yes       No

13. Minor: A planned group of courses from one or more subject matter areas consisting of at least        18 hours and no more than 24 hours. At least 12 hours of the minor must be unique to that minor        to differentiate it from other minors.

         Does this minor have 12 units of unique required credit? Yes       No

**Answer 14-15 for UGC only:**

14. If this is a non-thesis plan, does it require a minimum of 24 units of formal graded coursework?                                                                                                                                       Yes       No

       If no, explain why this proposal should be approved.

15. If this is a thesis plan, does it require a minimum of 18 units of formal graded coursework?                                                                                                                                       Yes       No

       If no, explain why this proposal should be approved.

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| **FLAGSTAFF MOUNTAIN CAMPUS** |  |
| **Scott Galland** | **10/22/2013** |
| Reviewed by Curriculum Process Associate | Date |
|  |  |
| **Approvals**: |  |
| **Stephen C. Tegler** | **10/09/2013** |
| Department Chair/Unit Head (if appropriate) | Date |
|  |  |
| Chair of college curriculum committee | Date |
|  |  |
| 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** |  |
|  |  |
| Reviewed by Curriculum Process Associate | Date |
|  |  |
| **Approvals:** |  |
|  | |
| Academic Unit Head | Date |
|  | |
| Division Curriculum Committee (Yuma, Yavapai, or Personalized Learning) | Date |
|  | |
| Division Administrator in Extended Campuses (Yuma, Yavapai, or Personalized Learning) | Date |
|  | |
| 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