

Student ID: \_\_\_\_\_

Catalog: \_\_\_\_\_

Student Name: \_\_\_\_\_

Program: Individualized Degree, B.S.

Advisor Name: \_\_\_\_\_

Minimum Credits Required: \_\_\_\_\_

## Individualized Degree Program; Aerospace Physics, B.S.

Students interested in pursuing a Bachelor of Science in the field of Aerospace Physics may do so through the Individualized Degree Program (IDP), which allows for a combination of suggested course work across multiple departments with the flexibility to meet the needs of the individual student.

### Degree/Graduation Requirements

- Ethnic Studies and Social Justice/Multicultural Course (3)

Students may fulfill this requirement by taking approved courses within one of the following categories: Arts and Humanities, Historical, or Social and Behavioral Sciences.

- Senior Experience

Work with IDP faculty advisor and IDP advisor to choose an appropriate course.

### General Requirements

#### General Study Requirements

- Written Communication: 6 credits
  - Recommended Courses: ENG 1010 Composing Arguments (3), and ENG 1020 Research & Argument Writing (3)
- Oral Communications: 3 credits
  - Recommended Course: COMM 1010 Presentational Speaking (3)
- Quantitative Literacy: 3 credits
  - Recommended Course: MTH 1110 College Algebra (4)
- Arts and Humanities: 6 credits
  - Recommended Course: PHI 1030 Ethics (3) and another approved A&H course.
- Historical: 3 credits
- Natural & Physical Sciences: 6 credits
  - Recommended Courses: CHE 1100 Principles of Chemistry (4), CHE 1150 Principles of Chemistry Lab (1) AND one additional 1-3 course
- Social and Behavioral Sciences: 6 credits
  - Recommended Courses: ECO 2010 Principles of Macroeconomics (3) & ECO 2020 Principles of Microeconomics (3)
- Global Diversity: (Can also satisfy a General Studies category, above.) 3 credits
  - Students may fulfill the global diversity requirements by taking approved courses within one of the following categories: arts and humanities; historical; natural and physical sciences; or social and behavioral sciences. (0-3)

**Total of required credits for General Studies: 33-39 credits**

#### Overview of Major Requirements

- Core classes (47 credits)
- Elective classes (43 credits)

\*See below for courses\*

## Major Requirements

### Aerospace Physics Courses

- AES 2050 Av. History & Aerospace History Dev (3)
- AES 3530 Aerodynamics (3)
- AES 3600 Space Flight Operations I (3)
- AES 4601 Space Flight Operations II (3)
- AES 4602 Aerospace Comm Ops (3)
- AES 4603 Aerospace Ops Syst Anal & Design (3)
- JMP 2610 Intro to Technical Writing (3)
- MTH 1210 Introduction to Statistics (4)
- MTH 1410 Calculus I (4)
- MTH 2410 Calculus II (4)
- MTH 2420 Calculus III (4)
- MTH 3420 Differential Equations (4)
- PHY 2311 General Physics I (4)
- PHY 2321 General Physics I Lab (1)
- PHY 2331 General Physics II (4)
- PHY 2341 General Physics II Lab (1)
- PHY 2711 Waves and Vibrations (4)
- PHY 2811 Modern Physics I (4)
- PHY 3711 Physical Lab I (2)
- PHY 3011 Modern Physics II (3)
- PHY 3211 Analytical Mechanics (4)
- PHY 4611 Computational Physics (2)
- PHY 4921 Physics Senior Seminar (1)
- PHY 4950 General Relativity (3)

### Electives

Students will need to take electives not listed here to meet the 120 credit hours and 40 upper division credits to complete the degree requirements. After completing the required courses there are 23 credit hours with 6 upper division credits that still need to be completed.

### Space Commercialization

Students completing AES 3530, 3600, 4601, 4602, and 4603 will also earn an MSU Denver certificate in Space Commercialization. This certificate will provide the student with the knowledge to seek opportunities in an important and expanding part of the Colorado and national economy, as well as expand opportunities for those currently employed in the industry.

**Total Aerospace Physics Credits: 64 credit hours, 34 upper division**

**Total Credits: 123 credit hours, 40 upper division**

Contact the Center for Individualized Learning here: [CIL Website](#) and [CIL Contact Form](#)

## Academic Plan – Aerospace Physics

<p><b><u>Semester 1 – Fall</u></b></p> <ul style="list-style-type: none"> <li>• COMM 1010 Presentational Speaking (3) (GS)</li> <li>• ENG 1010 Composing Arguments (3) (GS)</li> <li>• MTH 1110 College Algebra (4) (GS)</li> <li>• MTH 1210 Introduction to Statistics (4)</li> </ul> <p><b>Total Credit Hours 14</b></p>	<p><b><u>Semester 2 – Spring</u></b></p> <ul style="list-style-type: none"> <li>• AES 2050 Av. History &amp; Aerospace History Dev (3)</li> <li>• CHE 1100 Principles of Chemistry (4) (GS)</li> <li>• CHE 1150 Principles of Chemistry Lab (1) (GS)</li> <li>• ENG 1020 Research &amp; Argument Writing (3) (GS)</li> <li>• MTH 1410 Calculus I (4)</li> </ul> <p><b>Total Credit Hours 14</b></p>
<p><b><u>Semester 3 – Fall</u></b></p> <ul style="list-style-type: none"> <li>• AES Space Flight Operations I (3)</li> <li>• ECO Principles of Macroeconomics (3) (GS)</li> <li>• PHY General Physics I (4)</li> <li>• PHY 2321 General Physics I Lab (1)</li> <li>• MTH 2410 Calculus II (4)</li> </ul> <p><b>Total Credit Hours 15</b></p>	<p><b><u>Semester 4 – Spring</u></b></p> <ul style="list-style-type: none"> <li>• Arts and Humanities Course (3)</li> <li>• JMP 2610 Intro to Technical Writing (3)</li> <li>• MTH 2420 Calculus III (4)</li> <li>• PHY 2331 General Physics II (4)</li> <li>• PHY General Physics II Lab (1)</li> </ul> <p><b>Total Credit Hours 15</b></p>
<p><b><u>Semester 5 – Fall</u></b></p> <ul style="list-style-type: none"> <li>• ECO 2020 Principles of Microeconomics (3) (GS)</li> <li>• MTH 3420 Differential Equations (4)</li> <li>• PHY 2711 Waves and Vibrations (4)</li> <li>• PHY Modern Physics I (4)</li> </ul> <p><b>Total Credit Hours 15</b></p>	<p><b><u>Semester 6 – Spring</u></b></p> <ul style="list-style-type: none"> <li>• AES 3530 Aerodynamics (3)</li> <li>• AES XXXX (3-4)</li> <li>• PHI 1030 Ethics (3) (GS)</li> <li>• PHY Modern Physics II (3)</li> <li>• PHY 3711 Physical Lab I (2)</li> </ul> <p><b>Total Credit Hours 14-15</b></p>
<p><b><u>Semester 7 – Fall</u></b></p> <ul style="list-style-type: none"> <li>• AES 4601 Space Flight Operations II (3)</li> <li>• AES XXXX (3)</li> <li>• History Course (3)</li> <li>• PHY 3211 Analytical Mechanics (4)</li> <li>• PHY XXXX (3)</li> </ul> <p><b>Total Credit Hours 16</b></p>	<p><b><u>Semester 8 – Spring</u></b></p> <ul style="list-style-type: none"> <li>• AES 4602 Aerospace Comm Ops (3)</li> <li>• AES 4603 Aerospace Ops Syst Anal &amp; Design (3)</li> <li>• AES XXXX (3)</li> <li>• PHY 4611 Computational Physics (2)</li> <li>• PHY 4921 Physics Senior Seminar (1)</li> <li>• PHY General Relativity (3)</li> </ul> <p><b>Total Credit Hours 15</b></p>