Student ID: _____	**Catalog: _____**
Student Name: _____	**Program: Individualized Degree, B.S.**
Advisor Name: Sara Jackson Shumate, Ph.D.	**Minimum Credits Required: 60**

Individualized Degree Program: Aerospace Engineering Technician B.S.

The Aerospace Engineering Technician (AET) IDP will provide students with a wide spectrum of topics, forming a strong foundation to enter the aerospace workforce in a technician role. This IDP degree provides knowledge and skills for understanding aerospace operations from a wide range of technical perspectives. The flexibility of an IDP will allow students to tailor elective courses by either completing a set of recommended electives, or pursuing an engineering technician niche (e.g., mechanical, electrical, cybersecurity, etc.). Given the growth of aerospace organizations both within Colorado, and in other states, there continues to be the need for technicians to perform fulfilling work, whether on a flight line or in a laboratory. In addition to commercial aerospace opportunities, the military sector also has a strong demand for aerospace technicians. Technician roles in the military domain provide the opportunity for work on military installations both within the United States and abroad.

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 (3)

  AES 4603: Aerospace Operations Systems Analysis & Design (3)

General Requirements

General Study Requirements

- Written Communication (6)

Recommended Courses: ENG 1010: Composing Arguments (3), ENG 1020: Research & Argument Writing (3)

- Oral Communications (3)
- Quantitative Literacy (3)

Recommended: MTH 1110: College Algebra for Calculus (4)

- Arts and Humanities (6)
- Historical (3)
- Natural and Physical Sciences (6)
- Social and Behavioral Sciences (6)
- Global Diversity (3)

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

Total of required credits for General Studies: 33

Overview of Major Requirements

- Core classes (34)
- Elective classes (50+)

****See below for courses****

Major Requirements

Core Courses

- AES 190B: Aerospace Industry Exploration & Analysis (3)
- AES 190C: Basic Aviation & Aerospace Analysis I (1)
- AES 190D: Basic Aviation & Aerospace Analysis II (1)
- AES 190E: Basic Aviation & Aerospace Analysis III (1)
- AES 1050: Introduction to Space (3)
- AES 1110: Aviation Fundamentals (4)
- AES 2607: Introduction to Aerospace System Simulation (3)
- AES 3000: Aircraft Systems & Propulsion (3)
- AES 3600: Space Flight Operations I (3)
- AES 3607: Orbital Mechanics & Aerospace System Simulation (3)
- AES 3620: Aerospace Systems Project & Mission Scheduling (3)
- AES 4601: Space Flight Operations II (3)
- AES 4602: Aerospace Commercialized Operations (3)

Total Core Credits: 34 credit hours, 18 upper division

Major Elective Courses

The following are strongly recommended elective courses that are also outlined in the recommended degree plan:

- AES 2050: Aviation History & Development (3)
- MET 1010: Manufacturing Processes (3)
- MET 3000: Manufacturing Analysis (4)
- MET 4000: Project Engineering (3)
- IND 1100: Materials I (3)
- IND 1300: Materials II (3)
- IND 2830: Manufacturing Materials & Processes (3)
- IND 3000: Design Thinking (3)
- CS 1030: Computer Science Principles (4)
- EET 1001: Electronics: An Introduction (3)
- CET 1215: Engineering Graphics (3)
- CSS 2751: Principles of Cybersecurity (3)
- JMP 2610: Introduction to Technical Writing (3)
- AMS 3010: Additive Manufacturing Stratasys Prep (3)

Total Major Credits: 60 credit hours, 30 upper division

Total Credits to graduate: 120+ credit hours, 40 upper division

Additional Elective courses

Should a student desire to explore additional elective options, the following list contains further alternatives. Students may also explore another technician niche of their choice (e.g., electrical, etc.) and discuss further options than those listed here with an advisor.

- AES 3610: Elements of Spacecraft Design I (3)
- AES 4620: Elements of Spacecraft Design II (3)
- MET 1000: Introduction to Mechanical Engineering Technology (3)
- MET 1040: Introduction to Engineering (3)
- MET 1200: Technical Drawing I (3)
- MET 1210: 3D Modeling (3)
- MET 1310: Principles of Quality Assurance (3)
- MET 2010: CNC Machining and Inspection (3)
- MET 2200: Materials of Engineering (3)
- MET 3070: Machine Design (3)
- MET 3215: Composites Manufacturing (3)
- MET 3250: Tool Design & Product Tooling (3)
- MET 3410: Geometric Dimensioning & Tolerance (3)
- MET 4070: Computer Aided Design (3)
- AMS 1010: Survey of Advanced Manufacturing & Workplace Preparation (3)
- CIS 2010: Foundation of Information Systems (3)
- CIS 2110: Structured Problem Solving (3)
- CIS 3050: Fundamentals of System Analysis and Design (3)
- CIS 3230: Telecommunication Systems and Networking (3)
- CIS 3500: Information System Security (3)
- SSE 1040: Life Cycle & Systems Engineering (3)
- SSE 2000: Engineering Safety & Quality Assurance (3)

Optional Academic Plan: Aerospace Engineering Technician B.S.

Semester 1 – Fall • ENG 1010 (GS): Composing Arguments (3) • Any General Studies (3) (*recommend MTH 1110 prereqs if needed*) • Any General Studies (3) • AES 1050: Introduction to Space (3) • AES 190C-190E: Basic Aviation & Aerospace Analysis I-III (3) **Total Credit Hours (15)**	**Semester 2 – Spring** • MTH 1110 (GS): College Algebra for Calculus (4) • ENG 1020 (GS): Research & Argument Writing • Any General Studies (3) (*recommend Oral Communications*) • Any General Studies (3) • AES 190B: Aerospace Industry Exploration & Analysis (3) **Total Credit Hours (17)**
Semester 3 – Fall • IND 2830: Manufacturing Materials & Processes (3) • AES 1100: Aviation Fundamentals (4) • Any General Studies (3) • Any General Studies (3) • MET 1010: Manufacturing Processes (3) **Total Credit Hours (16)**	**Semester 4 – Spring** • CS 1030: Computer Science Principles (4) • Any General Studies (3) • CET 1215: Engineering Graphics (3) • AES 2050: Aviation History & Development (3) • IND 1100: Materials I (3) **Total Credit Hours (17)**
Semester 5 – Fall • AES 3600: Space Flight Operations I (3) • AES 2607: Introduction to Aerospace System Simulation (3) • IND 3660: Computer Aided Modeling (3) • Any General Studies (3) • IND 1300: Materials II (3) **Total Credit Hours (15)**	**Semester 6 – Spring** • AES 4601: Space Flight Operations II (3) • AES 3607: Orbital Mechanics & Aerospace Systems Simulation (3) • AES 3620: Aerospace Systems Project & Mission Scheduling (3) • AES 3000: Aircraft Systems & Propulsion (3) • Any General Studies or elective (3) **Total Credit Hours (15)**
Semester 7 – Fall • EET 1001: Electronics: An Introduction (3) • AES 4602: Aerospace Commercialized Operations (3) • AES 4603: Aerospace Operations Systems Analysis & Design (3) • MET 3000: Manufacturing Analysis (4) • CSS 2751: Principles of Cybersecurity (3) **Total Credit Hours (15)**	**Semester 8 – Spring** • MET 4000: Project Engineering (3) • IND 2810 (GS): Technology and Design: Global Perspectives (3) • JMP 2610: Introduction to Technical Writing (3) • AMS 3010: Additive Manufacturing Stratasys Prep (3) **Total Credit Hours (15)**