

District Career & Technical Education (CTE) Pathway Proposal: Aviation

The Career & Technical Education (CTE) Pathway proposal must be submitted to the CTE Coordinator for prior approval and must include the following information:

Name of State approved (CCCS) CTE Program:

Pathway Name: **Transportation**

Sub-Pathway Name: **Aviation**

Credit Type(s): **PRA, ELE**

Department Code: **EGR**

CIP Code: **490101**

I. GOALS

A. Provide a brief overview of the CTE Pathway.

DCSD is partnering with Metro State University to offer students a pathway in aviation where students can earn college credit through dual enrollment and work toward a Professional Flight Officer Concentration. This concentration is designed for those planning a career as a professional pilot or interested in learning more about aviation. Students will get time in professional flight simulators and can compliment course work with independent flight time with local industry partners.

B. How does this CTE Pathway fit into the overall educational program?

CTE programs significantly increase not only the high school graduation rate, but also results in a higher percentage of students going to college and persisting through graduation. Students taking both academic and technical courses have lower dropout rates and better achievement gains than other students.

C. What benefits would students receive from this CTE pathway?

This pathway will provide exposure to some of today's top professional careers and allow students to attain skills which are relevant and desired by the Aviation industry. Through the aviation pathway, Metropolitan State Denver will give discounted tuition rates and college credit for classes attended at Legacy Campus. Students will also have the knowledge to take the FAA Private Pilot written test, a requirement for the Private Pilot license. Additionally, continued education in the aviation field is available at MSU as is flight training at any of the partner schools in the local area.

I. CAREER & TECHNICAL EDUCATION (CTE) PATHWAY COURSES

A. Complete the table below indicating the course sequence students would take within the CTE program. Other courses may be added or changed within the program, based upon the need of

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students or program modifications.

New course names will be indicated in red text.

State Approved Course Name:	State Approved Description:	Credit Type	Course Number
MSU AES 1100 - Aviation Fundamentals	<p>This course presents the fundamentals of aviation for the beginning student which includes a study of the airplane and its components, aerodynamics, basic aircraft systems, the airport environment, air-traffic control procedures, Federal Aviation Regulations, the basic elements of air navigation including radio navigation, and a review of aviation weather. It prepares the student for the Federal Aviation Administration (FAA) Private Pilot Knowledge examination.</p> <p>MSU Credit 4.0</p> <p><u>Course Fee proposal: \$80</u></p>	PRA	69040201
MSU AES 1400 - Aviation Weather	<p>This course develops basic meteorological concepts that apply to aviation. The emphasis is on the use of National Weather Service reports and forecasts to evaluate flight conditions. The course also prepares students for the weather section of the FAA Private Pilot Knowledge examination.</p> <p>MSU Credit 3.0</p>	ELE	69040202
MSU-AES 1710 - Instrument Flight Simulation I	<p>The course covers basic flight instruments, radio navigation, aviation weather, aircraft performance, including weight and balance, crew coordination, and aeronautical decision-making. The fundamentals of instrument attitude flight (scanning, interpreting and controlling) are practiced in a flight training device. Radio navigation is introduced and includes both ground-based and satellite-based systems.</p> <p>MSU Credit 3.0</p> <p><u>Course Fee Proposal: \$80</u></p>	ELE	69040203
MSU-AES 2120 Instrument Fundamentals I	<p>In this course, the student studies aeronautics, regulations, meteorology, and instrument procedures in preparation for the FAA instrument</p>	ELE	69040401

	<p>knowledge examination. MSU Credit 3.0</p> <p><u>Course fee Proposal: \$80</u></p>		
<p>MSU-AES 2710 Instrument Flight Simulation II</p>	<p>This course covers instrument flight planning, navigation, and situational awareness during departure, enroute, and arrival phases of flight. Simulated flights include air traffic control (ATC) clearances, use of radio aids for determining position, holding patterns, and both precision and non-precision approaches. Pilot procedures during emergency and abnormal conditions are introduced and practiced.</p> <p>MSU Credit 3.0 <u>Course fee Proposal: \$80</u></p>	ELE	69040402
<p>CTE Introduction to Aviation and Aerospace (A & B)</p>	<p>This course will provide an introduction to the aviation and aerospace industry and provide an entry level examination of Aviation career opportunities. Students will explore the concepts and principles of Aviation and delve into general practices of the aerospace field. Areas of study are aviation history, pilot training, airplane structure, engines, basic aerodynamics, flight environment, airports, aviation weather, and navigation. In addition, the course exposes the student to the history of manned space flight.</p> <p>Course Fee: \$30.00 per <u>JQ-E Appendix A</u></p>	PRA	79040101S1 79040101S2
<p>CTE Aviation Weather</p>	<p>This course develops basic meteorological concepts that apply to aviation. Emphasis is on the use of national weather service reports and forecasts to evaluate flight conditions. The course also prepares students for the weather section of the FAA Private Pilot Knowledge examination.</p>	ELE	79040201
<p>CTE Aerodynamics</p>	<p>This course studies the basic principles of aerodynamics, including airfoil shapes and aerodynamic forces, airplane performance, stability and control, strength limitations, and the application of these to specific flight situations. Included in this course are flight performance with</p>	ELE	79040202

	<p>airflow in the sub-, trans-, and supersonic envelope. Federal Aviation Administration: https://www.faa.gov/regulations_policies/</p>		
CTE Principles of Flight	<p>Principles of Flight builds on the fundamental knowledge and skills learned in Introduction to Aerospace while teaching students the essential competencies needed for flight under normal conditions. Upon completion of this course, proficient students will be able to apply knowledge, skills, and procedures in a variety of simulated flight environments. Moreover, students who complete this course will have the opportunity to move on to advanced study in Advanced Flight, where they will continue to prepare for the FAA Private Pilot written exam.</p>	ELE	79040301
CTE Drone Technology	<p>Concepts in UAS and drone technology as well as expanding topics covered in Principles of Flight to an advanced level specific to drone technology. Students will be preparing to pass the Federal Aviation Administration (FAA) private pilot written exam. Successful completion of Introduction to Aviation and Aerospace is a prerequisite. (This course covers all competencies of AVT 160 and AVT 155.)</p> <p>Course Fee: \$200.00 per <u>JQ-E Appendix A</u></p>	ELE	79040302
CTE Special Industrial Applications of Drone Technology	<p>This course would be an applied applications course and could include instruction in aerial photography for commercial purposes, recording instrumentation, topics in inspection for industrial purposes, and data analytics. This course covers all competencies in AVT 256.) Credit 0.5 Course fees:</p>	ELE	79040303
CTE Advanced Flight	<p>Advanced Flight is the capstone course in the Aviation Flight program of study intended to prepare students for careers in aviation. While continuing to build upon the knowledge, skills, and competencies acquired in Introduction to</p>	ELE	79040401

	<p>Aerospace and Principles of Flight, students in Advanced Flight will receive rigorous instruction in preparation to take the Federal Aviation Administration (FAA) Private Pilot written exam. This course goes beyond the mastery of procedures under normal conditions learned in Principles of Flight and introduces students to the troubleshooting and diagnostic techniques used by pilots and other aircraft personnel to assess and correct for malfunctions, make adjustments in hazardous weather conditions, and perform other crucial emergency procedures. Continued emphasis is placed on maintaining the safety of flight and developing sound judgment (“judgment training”) throughout these conditions. In addition, students will develop a keen understanding of advanced aerodynamics and the physics of flight to aid in decision- making and technical adjustments while working under simulated abnormal procedures.</p>		
<p>CTE Advanced Flight S1 Course change form</p>	<p>Advanced Flight Semester 1 is the first of a capstone course in the Aviation Flight program of study intended to prepare students for careers in aviation. While continuing to build upon the knowledge, skills, and competencies acquired in Introduction to Aerospace and Principles of Flight, students in Advanced Flight will receive rigorous instruction in preparation to take the Federal Aviation Administration (FAA) Private Pilot written exam. This course goes beyond the mastery of procedures under normal conditions learned in Principles of Flight and introduces students to the troubleshooting and diagnostic techniques used by pilots and other aircraft personnel to assess and correct for malfunctions, make adjustments in hazardous weather conditions, and perform other crucial emergency procedures.</p>	<p>ELE</p>	<p>79040401S1</p>
<p>CTE Advanced Flight S2 Course change form</p>	<p>Advanced Flight Semester 2 is the second of a capstone course in the Aviation Flight program of study intended to prepare students for careers in aviation. Where continued emphasis is placed on</p>	<p>ELE</p>	<p>79040401S2</p>

	<p>maintaining the safety of flight and developing sound judgment (“judgment training”) throughout these conditions. In addition, students will develop a keen understanding of advanced aerodynamics and the physics of flight to aid in decision- making and technical adjustments while working under simulated abnormal procedures.</p>		
<p>Instrument Flight Simulation I</p>	<p>The course covers basic flight instruments, radio navigation, aviation weather, aircraft performance, including weight and balance, crew coordination, and aeronautical decision-making. The fundamentals of instrument attitude flight (scanning, interpreting and controlling) are practiced in a flight training device. Radio navigation is introduced and includes both ground-based and satellite-based systems.</p> <p>This course is in place of MSU-AES 2120 Instrument Fundamentals I while DCSD awaits FAA 141 Approval.</p>	<p>ELE</p>	<p>89040203</p>
<p>Instrument Fundamentals I</p>	<p>In this course, the student studies aeronautics, regulations, meteorology, and instrument procedures in preparation for the FAA instrument knowledge examination.</p> <p>This course is in place of MSU-AES 2710 Instrument Flight Simulation II while DCSD awaits FAA 141 Approval.</p>	<p>ELE</p>	<p>89040401</p>
<p>MSU AES 2220 Flight Dispatch and Load Planning</p>	<p>This course introduces students to the topics needed to prepare them to work as a flight dispatcher. Regulations required for operations are a vital area of knowledge and will be covered. This course covers the methods of decision-making, safety, and weather conditions related to dispatch decisions. Prerequisite(s): AES 1100, AES 1400</p> <p>MSU Credit 3.0</p>	<p>ELE</p>	<p>69040403</p>

CTE Aviation WBL	<p>This course is designed to prepare students to enter the workforce through on-the-job training in the form of a work-based learning experience and may be combined with class instruction. Students will build on prior knowledge and skills in the program of study aligned to their career and academic plan to further develop and apply employability and technical skills that prepare them for success in future career and postsecondary education. Students will have the opportunity to develop skills in supervised practical experience on the job or in a classroom-based job environment. A personalized learning plan is a requirement of this course.</p>	ELE	79049999S1 / 79049999S2
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Signature Page

Does the Career and Technical Education (CTE) Coordinator approve adoption of this program? <i>** Your signature below indicates your approval of the program.</i>
Signature _____ <i>Aimee Barker</i> _____

Does the Chief Assessment Officer (or designee) approve adoption of this program? <i>** Your signature below indicates your approval of the program.</i>
Signature _____ <i>Matt Reynolds</i> _____

Does the Assistant Superintendent approve adoption of this program? <i>** Your signature below indicates your approval of the program.</i>
Signature _____ <i>Danny Winsor</i> _____

Does the Board of Education approve adoption of this program?	Yes	No
Date of BOE Meeting _____		
Signature _____		

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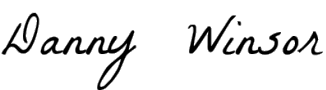
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Course Number:	
Course entered in NCAA database if applicable.	
Update Graduation Competencies course document if applicable for Math and English courses.	
VIP Code:	
CIP Code:	
Add to HEAR list, if applicable.	
Course Mapping SCED code:	
Date entered into Infinite Campus	
Credit amount:	

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