

**Career Technical Credit Transfer (CT)<sup>2</sup>  
Air Transportation Career-Technical Assurance Guide (CTAG)  
March 4, 2015**

The following programs/courses, indicated by a Career-Technical Articulation Number (CTAN), are eligible for transfer among Ohio's Public Secondary (CT)<sup>2</sup> approved programs/courses and state institutions of higher education. The SCTAI alignment document with ODE competencies and post-secondary learning outcomes can be found on our website [https://www.ohiohighered.org/sites/ohiohighered.org/files/uploads/transfer/CT2/AirTransportation\\_SCTAI\\_Align\\_2015.pdf](https://www.ohiohighered.org/sites/ohiohighered.org/files/uploads/transfer/CT2/AirTransportation_SCTAI_Align_2015.pdf).

<b>CTAIR001 Air Transportation</b>	Credits: 3 Semester Hours
<p><b>Advising Notes:</b> In order to access post-secondary college credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program</li> <li>• Successfully complete ODE course Aviation Airport Management (177020) with a "C" or better and earn a score of 73 or higher on the end-of-course exam</li> </ul>	<p><b>CERTIFICATE OF AFFIRMATION FORM</b> can be used for course submission through CEMS. <a href="https://www.ohiohighered.org/transfer/ct2/affirmation">https://www.ohiohighered.org/transfer/ct2/affirmation</a></p>
<b>CTAIR002 Aircraft Ground Operations</b>	Credits: 3 Semester Hours
<p><b>Advising Notes:</b> In order to access post-secondary college credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program</li> <li>• Successfully complete ODE course Aviation Maintenance General (177014) with a "C" or better and earn a score of 71 or higher on the end-of-course exam</li> <li>• Sending school must be approved by the Federal Aviation Regulations with Part 147 certification to be eligible to transfer credit to a Part 147 program. Students from sending schools that are not Part 147 certified can only transfer credit to a non-Part 147 certified institution that offers this content.</li> </ul>	<p><b>CERTIFICATE OF AFFIRMATION FORM</b> can be used for course submission through CEMS. <a href="https://www.ohiohighered.org/transfer/ct2/affirmation">https://www.ohiohighered.org/transfer/ct2/affirmation</a></p>

<b>CTAIR003 Aviation Meteorology</b>	Credits: 3 Semester Hours
<p><b>Advising Notes:</b> In order to access post-secondary college credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program</li> <li>• Successfully complete ODE course Aviation Meteorology (177019) with a “C” or better and earn a score of 72 or higher on the end-of-course exam</li> </ul>	<p><b>CERTIFICATE OF AFFIRMATION FORM</b> can be used for course submission through CEMS. <a href="https://www.ohiohighered.org/transfer/ct2/affirmation">https://www.ohiohighered.org/transfer/ct2/affirmation</a></p>
<b>CTAIR004 Introduction to Aviation</b>	Credits: 3 Semester Hours
<p><b>Advising Notes:</b> In order to access post-secondary college credit for this CTAN, the student must:</p> <ul style="list-style-type: none"> <li>• Matriculate to an institution of higher education with an approved or comparable program NO LATER than 3 years after completing the approved secondary program</li> <li>• Successfully complete ODE course Aviation (177013) with a “C” or better and earn a score of 74 or higher on the end-of-course exam</li> </ul>	<p><b>CERTIFICATE OF AFFIRMATION FORM</b> can be used for course submission through CEMS. <a href="https://www.ohiohighered.org/transfer/ct2/affirmation">https://www.ohiohighered.org/transfer/ct2/affirmation</a></p>
<b>CTAIR005 Private Pilot Theory</b>	Credits: 3 Semester Hours
<p><b>Advising Notes:</b> In order to access college credit for this CTAN students must Pass of the ODE course Aviation Pilot Training (ODE Course 177021) with a “C” or better</p> <ul style="list-style-type: none"> <li>• Students must also pass the FAA Private Pilot-Airplane Certificate written exam to receive course credit.</li> </ul>	

## Requirements and Credit Conditions:

1. The receiving institution must have a comparable program, major, or courses that have been approved through submission to the Ohio Department of Higher Education (CT)<sup>2</sup> approval process for the CTANs listed in this document.
2. Credits apply to courses in the specified technical area at Ohio's Public Institutions of Higher Education, provided that the institution offers courses in the specific technical area. In the absence of an equivalent course, and when the institution offers the technical program, the receiving institution will guarantee to grant and apply an equivalent credit value of the Career-Technical Articulation Number (CTAN) toward the technical requirements of the specific degree/certificate program.
3. The applicant must provide proof to the receiving institution that she/he completed a course or program that has been approved through the (CT)<sup>2</sup> approval process and that she/he holds the appropriate credential.
4. A career-technical student seeking credit under the terms of this CTAG must enroll and submit their verification form to the college within three years of completing a career-technical course. Students may earn credit within the currency of the industry certificate or license.
5. A career-technical student who meets all eligibility criteria will receive the credit hour value for the comparable course(s) as offered at the receiving state institution of higher education.
6. The admission requirements of individual institutions and/or programs are unaffected by the implementation of (CT)<sup>2</sup> outcomes.
7. The transfer of credit through this CTAG will not exempt a student from the residency requirements at the receiving institution.

Each CTAN identifies the learning outcomes that are equivalent or common in introductory technical courses. In order for students to be able to receive credit under these agreements, the career-technical programs and the state institutions of higher education must document that their course/program content matches the learning outcomes in the CTANs. In accordance with Ohio Revised Code 3333.162, industry standards and certifications provide documentation of student learning.

### CTAIR001 – Air Transportation

**General Course Description:** An in-depth look at air transportation with an emphasis on commercial air carrier operations. Topics include history and development of air transportation, air carrier operations, and regulation and control of air carriers.

**Credits:** 3 Semester Hours

#### Learning Outcomes:

1. \*Demonstrate basic knowledge of the history, development, evolution and current and future trends of air transportation.
2. \*Demonstrate basic knowledge of the airport and NAS environment in the United States.
3. \*Demonstrate an in-depth understanding of the structure and operation of air carriers.
4. \*Demonstrate basic understanding of business aviation.
5. \*Demonstrate basic knowledge of the regulatory environment governing air carriers in the United States.

**\* Indicates Essential Learning Outcome**

## **CTAIR002 – Aircraft Ground Operations**

**General Course Description:** An introduction to aircraft maintenance ground operations and servicing. Students must demonstrate their knowledge and ability to correctly perform aircraft maintenance-related ground operations and aircraft servicing, and properly use required technical manuals, technical data, publications, and forms.

**Credits:** 3 Semester Hours

### **Learning Outcomes:**

1. \*Demonstrate, through written and oral examination, an in-depth understanding of various aircraft maintenance-related ground operations and procedures including:
  - a. \*Aircraft ground towing and movement
  - b. \*Aircraft parking and mooring
  - c. \*Aircraft marshaling
  - d. \*Ground vehicle operation
  - e. \*Engine starting
  - f. \*Engine operation
  - g. \*Aircraft jacking and hoisting
  - h. \*Aircraft servicing
  - i. \*Aircraft cleaning
  - j. \*Aircraft fuels and fueling
  - k. \*Aircraft de-icing
  - l. \*Ramp/flight line safety
  - m. \*Hanger/shop safety
  - n. \*Aircraft weight and balance assessment
  
2. \*Perform various aircraft maintenance-related tasks and procedures for the following ground operations:
  - a. \*Aircraft ground towing and movement
  - b. \*Aircraft parking and mooring
  - c. \*Aircraft marshaling
  - d. \*Ground vehicle operation
  - e. \*Engine starting
  - f. \*Engine operation
  - g. \*Aircraft jacking and hoisting
  - h. \*Aircraft servicing
  - i. \*Aircraft fueling

- j. \*Aircraft de-icing
  - k. \*Aircraft cleaning
  - l. \*Determining aircraft weight and center of gravity
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- 3. \*Demonstrate, through written and oral examination, an understanding of the use of various required maintenance forms and records.
  - 4. \*Properly prepare required maintenance forms and records.
  - 5. \*Demonstrate, through written and oral examination, an understanding of the use of maintenance manuals and publications.
  - 6. \*Properly identify and use maintenance manuals and publications.

***\* Indicates Essential Learning Outcome***

### **CTAIR003 – Aviation Meteorology**

**General Course Description:** Fundamental concepts of aviation meteorology. Topics include atmospheric properties and process, basic weather theory, weather hazards to flight, and aviation weather information and services.

**Credit:** 3 Semester Hours

#### **Learning Outcomes:**

- 1. \*Demonstrate basic knowledge of the structure and properties of the atmosphere.
- 2. \*Demonstrate an understanding of the basic causes and characteristics of aviation weather.
- 3. \*Demonstrate an understanding of aviation weather hazards and hazardous conditions.
- 4. \*Describe the different types of aviation weather resources and services.
- 5. \*Analyze and interpret different types of aviation weather forecasts, charts, and other weather reports to determine and predict flight conditions.

***\* Indicates Essential Learning Outcome***

## **CTAIR004 – Introduction to Aviation**

**General Course Description:** An overview of the history, development, and evolution of aeronautics and aviation. Course also explains the national aviation system in the United States, describes different sectors of the aviation industry, and explores various opportunities and career paths in aviation.

**Credit:** 3 Semester Hours

### **Learning Outcomes:**

1. \*Demonstrate basic knowledge of the history, development, and evolution of aviation.
2. \*Demonstrate basic knowledge of different sectors of the air transportation industry.
3. \*Demonstrate basic knowledge of the airport environment in the United States.
4. \*Demonstrate basic knowledge of the NAS and the air traffic control system in the United States.
5. \*Demonstrate basic knowledge of aviation industry career specialties, opportunities, and trade/professional organizations.
6. \*Demonstrate basic knowledge of the manufacturing and maintenance industries for military, commercial, and general aviation aircraft.

**\* Indicates Essential Learning Outcome**

## **CTAIR005 – Private Pilot Theory**

**General Course Description:** An in-depth study of all areas covered by the FAA Private Pilot Certificate written examination. Includes ground instruction, covering the following: navigation; flight planning; airspace and airports; aviation and flight information publications; FAA flight rules and regulations; aerodynamics and aircraft flight performance; radio communications; basic aircraft instruments, aircraft systems, and flight control; weight and balance; aviation weather; basic flight physiology; and basic human factors and aviation decision making.

**Credit:** 3 Semester Hours

### **Learning Outcomes:**

1. \*Demonstrate basic knowledge of the Federal Aviation Regulations that relate to private pilot privileges, limitations, and flight operations.
2. \*Demonstrate basic knowledge of the accident reporting requirements of the National Transportation Safety Board.
3. \*Demonstrate basic knowledge of the use of the Aeronautical Information Manual (AIM) and FAA advisory circulars.
4. \*Demonstrate basic knowledge of VFR navigation using pilotage, dead reckoning, and navigation systems.
5. \*Demonstrate basic knowledge of radio communication, including proper radio phraseology, the phonetic alphabet, and air traffic control radio communications procedures.
6. \*Demonstrate an understanding of weather theory, critical weather situations, wind shear avoidance, the procurement and use of aeronautical weather charts, reports, and forecasts.

7. \*Demonstrate basic knowledge of the safe and efficient operation of aircraft with special emphasis on areas of aircraft operations considered critical to flight safety.
8. \*Demonstrate basic knowledge of the effects of density altitude on takeoff and climb performance.
9. \*Be able to perform weight and balance computations.
10. \*Demonstrate basic knowledge of the principles of aerodynamics.
11. \*Demonstrate basic knowledge of the principles of power plants and aircraft systems.
12. \*Demonstrate basic knowledge of the principles of operation and sources of error associated with various flight instruments and indicators.
13. \*Demonstrate an understanding of stall awareness, stall recovery techniques, spin entry, spins, and spin recovery techniques for the airplane and glider category ratings.
14. \*Demonstrate basic knowledge of the principles of aeronautical decision making and judgment.
15. \*Demonstrate basic knowledge of aviation physiology.
16. \*Demonstrate an understanding of VFR flight planning.
17. \*Demonstrate an understanding of flight within a controlled and uncontrolled airspace with respect to airspace classifications, airports, and air traffic control.

***\* Indicates Essential Learning Outcome***

**Air Transportation Panel Participants Fall  
2014**

Dr. John Duncan	Kent State University	SCTAI Panel Lead Expert
Dr. Royce Ann Martin	Bowling Green State University	SCTAI Panel Expert
Mark Reed	Columbus State Community College	SCTAI Panel Expert
James Schmid	Cincinnati State Technical and Community College	SCTAI Panel Expert
Kent Wingate	Sinclair Community College	SCTAI Panel Expert
Jeff Gruber	Columbus State Community College	Item Writer
Don Stark	Sinclair Community College	Item Writer
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Brad Early	The Ohio State University	Item Writer
Dale Gelter	The Ohio State University	Item Writer
Doug Hammon	The Ohio State University	Item Writer
Jim Opperman	The Ohio State University	Item Writer
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Jessi Spencer	Ohio Department of Higher Education	Administrative Coordinator of SCTAI