

**Transportation, Distribution and Logistics Career Cluster
Flight Operations I
Course Number 47.48800**

Course Description:

Navigation and Communication are essential to the safe operation of aircraft within the airspace system. This course provides a foundation that enables the student to apply the basics of aircraft navigation and utilize efficient communication methods for safe aircraft operations. The prerequisite for this course is Fundamentals of Aerospace.

Course Standard 1

TDL-FO1-1

The following standard is included in all CTAE courses adopted for the Career Cluster/Pathways. Teachers should incorporate the elements of this standard into lesson plans during the course. The topics listed for each element of the standard may be addressed in differentiated instruction matching the content of each course. These elements may also be addressed with specific lessons from a variety of resources. This content is not to be treated as a unit or separate body of knowledge but rather integrated into class activities as applications of the concept.

Standard: Demonstrate employability skills required by business and industry.

The following elements should be integrated throughout the content of this course.

1.1 Communicate effectively through writing, speaking, listening, reading, and interpersonal abilities.

Person-to-Person Etiquette	Telephone and Email Etiquette	Cell Phone and Internet Etiquette	Communicating At Work	Listening
Interacting with Your Boss	Telephone Conversations	Using Blogs	Improving Communication Skills	Reasons, Benefits, and Barriers
Interacting with Subordinates	Barriers to Phone conversations	Using Social Media	Effective Oral Communication	Listening Strategies
Interacting with Co-workers	Making and Returning Calls		Effective Written Communication	Ways We Filter What We Hear
Interacting with Suppliers	Making Cold Calls		Effective Nonverbal Skills	Developing a Listening Attitude
	Handling Conference Calls		Effective Word Use	Show You Are Listening
	Handling Unsolicited Calls		Giving and Receiving Feedback	Asking Questions
				Obtaining Feedback
				Getting Others to Listen

Nonverbal Communication	Written Communication	Speaking	Applications and Effective Résumés
Communicating Nonverbally	Writing Documents	Using Language Carefully	Completing a Job Application
Reading Body Language and mixed Messages	Constructive Criticism in Writing	One-on-One Conversations	Writing a Cover Letter
Matching Verbal and Nonverbal communication		Small Group Communication	Things to Include in a Résumé
Improving Nonverbal Indicators		Large Group Communication	Selling Yourself in a Résumé
Nonverbal Feedback		Making Speeches	Terms to Use in a Résumé

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Showing Confidence Nonverbally		Involving the Audience	Describing Your Job Strengths
Showing Assertiveness		Answering Questions	Organizing Your Résumé
		Visual and Media Aids	Writing an Electronic Résumé
		Errors in Presentation	Dressing Up Your Résumé

1.2 Demonstrate creativity by asking challenging questions and applying innovative procedures and methods.

Teamwork and Problem Solving	Meeting Etiquette
Thinking Creatively	Preparation and Participation in Meetings
Taking Risks	Conducting Two-Person or Large Group Meetings
Building Team Communication	Inviting and Introducing Speakers
	Facilitating Discussions and Closing
	Preparing Visual Aids
	Virtual Meetings

1.3 Exhibit critical thinking and problem solving skills to locate, analyze and apply information in career planning and employment situations.

Problem Solving	Customer Service	The Application Process	Interviewing Skills	Finding the Right Job
Transferable Job Skills	Gaining Trust and Interacting with Customers	Providing Information, Accuracy and Double Checking	Preparing for an Interview	Locating Jobs and Networking
Becoming a Problem Solver	Learning and Giving Customers What They Want	Online Application Process	Questions to Ask in an Interview	Job Shopping Online
Identifying a Problem	Keeping Customers Coming Back	Following Up After Submitting an Application	Things to Include in a Career Portfolio	Job Search Websites
Becoming a Critical Thinker	Seeing the Customer's Point	Effective Résumés:	Traits Employers are Seeking	Participation in Job Fairs
Managing	Selling Yourself and the Company	Matching Your Talents to a Job	Considerations Before Taking a Job	Searching the Classified Ads
	Handling Customer Complaints	When a Résumé Should be Used		Using Employment Agencies
	Strategies for Customer Service			Landing an Internship
				Staying Motivated to Search

1.4 Model work readiness traits required for success in the workplace including integrity, honesty, accountability, punctuality, time management, and respect for diversity.

Workplace Ethics	Personal Characteristics	Employer Expectations	Business Etiquette	Communicating at Work
Demonstrating Good Work Ethic	Demonstrating a Good Attitude	Behaviors Employers Expect	Language and Behavior	Handling Anger
Behaving Appropriately	Gaining and Showing Respect	Objectionable Behaviors	Keeping Information Confidential	Dealing with Difficult Coworkers
Maintaining Honesty	Demonstrating Responsibility	Establishing Credibility	Avoiding Gossip	Dealing with a Difficult Boss
Playing Fair	Showing Dependability	Demonstrating Your Skills	Appropriate Work Email	Dealing with Difficult Customers
Using Ethical Language	Being Courteous	Building Work Relationships	Cell Phone Etiquette	Dealing with Conflict

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Showing Responsibility	Gaining Coworkers' Trust		Appropriate Work Texting	
Reducing Harassment	Persevering		Understanding Copyright	
Respecting Diversity	Handling Criticism		Social Networking	
Making Truthfulness a Habit	Showing Professionalism			
Leaving a Job Ethically				

1.5 Apply the appropriate skill sets to be productive in a changing, technological, diverse workplace to be able to work independently and apply team work skills.

Expected Work Traits	Teamwork	Time Management
Demonstrating Responsibility	Teamwork Skills	Managing Time
Dealing with Information Overload	Reasons Companies Use Teams	Putting First Things First
Transferable Job Skills	Decisions Teams Make	Juggling Many Priorities
Managing Change	Team Responsibilities	Overcoming Procrastination
Adopting a New Technology	Problems That Affect Teams	Organizing Workspace and Tasks
	Expressing Yourself on a Team	Staying Organized
	Giving and Receiving Constructive Criticism	Finding More Time
		Managing Projects
		Prioritizing Personal and Work Life

1.6 Present a professional image through appearance, behavior and language.

On-the-Job Etiquette	Person-to-Person Etiquette	Communication Etiquette	Presenting Yourself
Using Professional Manners	Meeting Business Acquaintances	Creating a Good Impression	Looking Professional
Introducing People	Meeting People for the First Time	Keeping Phone Calls Professional	Dressing for Success
Appropriate Dress	Showing Politeness	Proper Use of Work Email	Showing a Professional Attitude
Business Meal Functions		Proper Use of Cell Phone	Using Good Posture
Behavior at Work Parties		Proper Use in Texting	Presenting Yourself to Associates
Behavior at Conventions			Accepting Criticism
International Etiquette			Demonstrating Leadership
Cross-Cultural Etiquette			
Working in a Cubicle			

1.7 Understand that there are distinct regulatory English language eligibility requirements in Title 14 of the Code of Federal Regulations (CFR); in part 61 for pilots and flight and ground instructors; part 63 for Flight Engineers and flight navigators; and part 65 for air traffic control (ATC) tower operators, aircraft dispatchers, mechanics, repairmen, and parachute riggers. In addition, the standards found in International Civil Aviation Organization (ICAO) Annex 1 require that certain Airman Certificates have an endorsement for English language proficiency in order for those airmen to act as required crew of an aircraft internationally.

**Support of CTAE Foundation Course Standards and Georgia Standards of Excellence
L9-10RST 1-10 and L9-10WHST 1-10:**

Georgia Standards of Excellence ELA/Literacy standards have been written specifically for technical subjects and have been adopted as part of the official standards for all CTAE courses.

Course Standard 2

TDL-FO1-2

Identify and explain climate and seasonal changes of the earth's atmosphere.

- 2.1 Identify and explain the structure of the earth's layers of the atmosphere, and become knowledgeable of the history of the study of meteorology.

Course Standard 3

TDL-FO1-3

Demonstrate an understanding of the relationship between air pressure, temperature, and density.

- 3.1 Identify and explain vertical airflow and atmospheric stability.
- 3.2 Demonstrating an understanding of the effects of moisture in the atmosphere.
- 3.3 Demonstrate an understanding of the relationship between cloud development and precipitation.

Course Standard 4

TDL-FO1-4

Demonstrate knowledge of the airplane systems and components.

- 4.1 Differentiate among class and category of aircraft.
- 4.2 Demonstrate knowledge of aircraft components.

Course Standard 5

TDL-FO1-5

Operate and employ weather technology and terminology.

- 5.1 Observe and record weather data using units of measurement (i.e., degrees, knots, miles per hour, etc.).
- 5.2 Operate and employ weather tools (i.e. thermometer, barometer, and hygrometer, etc.).
- 5.3 Demonstrate an understanding of weather symbols and weather coding.
- 5.4 Describe atmospheric conditions using appropriate terminology.

Course Standard 6

TDL-FO1-6

Demonstrate an understanding of mid latitude weather patterns and systems.

- 6.1 Demonstrate an understanding of the horizontal and vertical circulation of low and high pressure systems.
- 6.2 Identify air masses and monitor daily weather phenomena.
- 6.3 Use weather tools and units of measurement.
- 6.4 Employ meteorological terminology and coding procedures.
- 6.5 Demonstrate an understanding of synoptic weather structure.
- 6.6 Demonstrate an understanding of temperature, pressure & dew point.
- 6.7 Demonstrate an understanding of frontal systems.
- 6.8 Demonstrate an understanding of weather patterns.

Course Standard 7

TDL-FO1-7

Identify and describe aviation weather hazards.

- 7.1 Identify and describe convective weather activity threats such as wind shear, thunderstorms, and heavy rain.
- 7.2 Recognize and describe the danger of instability in atmospheric conditions such as freezing levels, turbulence, and significant precipitation.
- 7.3 Examine and describe the importance of visual flight rules (VFR) ceilings and minimum visibility requirements to avoid significant atmospheric threats.

Course Standard 8

TDL-FO1-8

Demonstrate an understanding of the structure of the national airspace system.

- 8.1 Identify and describe the intended use of different airways.
- 8.2 Describe the basic Visual and Instrument Flight Rules required for safe operation of aircraft.

Course Standard 9

TDL-FO1-9

Demonstrate an understanding of the various roles of air traffic control in the airspace system.

- 9.1 Identify and explain the differences in the responsibilities and duties of Air Traffic Controllers in TRACONS (Terminal Radar Approach Control) and ARTCC (Air Route Traffic Control Centers).
- 9.2 Recognize and describe information used by air traffic controllers to track aircraft and manage traffic flows.
- 9.3 Demonstrate an understanding of airspace classification.

Course Standard 10

TDL-FO1-10

Demonstrate an understanding of basic aeronautical charts and their application to flight planning.

- 10.1 Distinguish between different types of aeronautical charts and their intended uses.
- 10.2 Demonstrate the use of symbols, colors, and scale to interpret aeronautical charts.

Course Standard 11

TDL-FO1-11

Demonstrate usage of standard aviation vocabulary, phraseology, and acronyms for communications.

- 11.1 Exhibit competence in utilizing the International Phonetic Alphabet.
- 11.2 Utilize standardized identifiers for aircraft and airports.
- 11.3 Demonstrate an understanding of standardized lighting, light signals and markings used at airports.
- 11.4 Demonstrate use of proper protocol required for radio communications.

Course Standard 12

TDL-FO1-12

Demonstrate and describe knowledge of airports.

- 12.1 Demonstrate knowledge of the difference between controlled, uncontrolled and private airports.
- 12.2 Identify and explain traffic patterns.
- 12.3 Identify and describe marking and signs in the airport environment.
- 12.4 Identify and describe airport lighting systems.

Course Standard 13

TDL-FO1-13

Explain the operation of Aircraft Power Plant & related systems and flight instruments and identify the components of the aircraft system.

- 13.1 Identify and explain the use of aircraft engine systems.
- 13.2 Identify and explain the use of aircraft fuel and oil systems.
- 13.3 Identify and explain the use of aircraft cooling systems.
- 13.4 Explain the uses of different propellers in aircraft systems.
- 13.5 Identify and explain the use of aircraft electrical systems.

Course Standard 14

TDL-FO1-14

Identify instruments and develop an understanding of their functions.

- 14.1 Identify and explain the functions of all basic flight instruments.
- 14.2 Identify and explain the purpose for each flight instrument.
- 14.3 Identify and explain flight instrument usage.