

## **NARRATIVE TEMPLATE for a (credit) Traditional Associate Degree: Associate in Arts (A.A.) and Associate in Science (A.S.)**

### **Item 1. Program Goals and Objectives**

The goal of the Flight Science program at Reedley College is to academically prepare men and women of all ages for entry into the world of commercial aviation. The focus of the program is on providing individuals interested in careers in the aviation industry with a defined path towards an Associate's Degree and the certificates and ratings required to operate single and multi-engine aircraft as professional pilots. In addition to our professional flight track, within our degree program a student has the option to concentrate on flight operations management rather than professional flight. This educational track prepares students for careers in aviation other than flying. Potential jobs include flight scheduling, dispatch, airport operations and fixed base operations support. This pathway provides students with the job skills required to realize a fulfilling career in aviation without the large financial commitment that flight training can incur. All training is conducted in accordance with Federal Aviation Administration Regulations (FAR) Part 61 and Part 141. All flight training labs are conducted in accordance with an approved FAR Part 141 syllabus.

Throughout the course of this program, students will develop the analytical and critical thinking skills necessary for completion of flight training and successful completion of federally administered written examinations for licensing as pilots. In addition, Students will develop the analytical and critical thinking skills necessary for completion of aviation ground school academic courses giving them the background knowledge necessary to enter the air transportation industry as professionals in non-flying occupations.

### **Item 2. Catalog Description**

This program of study prepares students for careers in aviation and aerospace operations. Students can tailor their curriculum based on career goals. The course of study is primarily focused on those students who wish to become professional pilots. However, the academic areas of study can also prepare students for careers in flight operations management, aircraft dispatch, aircraft scheduling and Fixed Base Operations support. The curriculum is designed to accommodate students with no previous flying experience. Courses will systematically prepare individuals academically to meet the aeronautical knowledge requirements to test for the certificates and ratings required to operate aircraft as a commercial pilot. In addition, flight lab courses are offered as suggested electives enabling the student to complete all aspects of their training under the auspices of the college and to meet aeronautical experience and flight hour requirements necessary for federal licensing as a commercial pilot. Please note that students seeking FAA certificates and ratings must participate in flight activities and meet aeronautical experience requirements as defined under Federal Aviation Regulation (FAR) Part 141 for the rating desired. In addition to meeting experience requirements, the student must perform each maneuver within the parameters established in the applicable Practical Test Standard. This may require training beyond the specified minimum number of hours for a certificate or rating.

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**Item 3. Program Requirements**

<b>Requirements</b>	<b>Dept. Name/#</b>	<b>Name</b>	<b>Units</b>	<b>CSU-GE</b>	<b>IGEETC</b>	<b>Sequence</b>
<b>Required core (24 25 units)</b>	<b>FLGHT 101</b>	<b>Private Pilot Ground School</b>	<b>4</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 102</b>	<b>Aviation History</b>	<b>2</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 103</b>	<b>Careers in Aviation</b>	<b>2</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 111</b>	<b>Instrument Pilot Ground School</b>	<b>3</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 112</b>	<b>Advanced Navigation</b>	<b>2</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 113</b>	<b>Advanced Meteorology</b>	<b>2</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 121</b>	<b>Commercial Pilot Ground School</b>	<b>3</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 122</b>	<b>Fundamentals of Air Traffic Control</b>	<b>2</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 123</b>	<b>Human Factors &amp; Crew Resource Management</b>	<b>2</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 105</b>	<b>Private Pilot Flight Lab</b>	<b>1</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 106</b>	<b>Advanced Private Pilot Flight Lab</b>	<b>1</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 115</b>	<b>Instrument Pilot Flight Lab</b>	<b>1</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 116</b>	<b>Advanced Instrument Pilot Flight Lab</b>	<b>1</b>			<b>Yr1, Fall/Spring</b>
	<b>FLGHT 125</b>	<b>Commercial Pilot Flight Lab</b>	<b>1</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 126</b>	<b>Advanced Commercial Pilot Flight Lab</b>	<b>1</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 131</b>	<b>Flight Instructor Ground School</b>	<b>3</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 132</b>	<b>Advanced Aircraft Systems &amp; Propulsion</b>	<b>2</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 133</b>	<b>Federal Aviation Regulations</b>	<b>2</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 135</b>	<b>Flight Instructor Flight Lab</b>	<b>1</b>			<b>Yr2, Fall/Spring</b>
	<b>FLGHT 145</b>	<b>Multi-Engine Pilot Flight Lab</b>	<b>1</b>			<b>Yr2, Fall/Spring</b>

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Required Major Total	24-25 units
Completion of CSU-GE Breadth or IGETC pattern (Possible double counting: 12 units)	35-36 units
Transferable electives (as needed to reach 60 units)	
TOTAL UNITS	60 units

Proposed Sequence:

Year 1, Fall = 15 units  
Year 1, Spring = 15 units  
Year 2, Fall = 15 units  
Year 2, Spring = 15 units  
TOTAL UNITS: 60 units

**Item 4. Master Planning**

The mission of Reedley College is to provide an accessible educational environment ensuring high-quality innovative learning opportunities supported by services for student success. The College offers associate degree programs, career technical education, transfer level, and basic skills courses. Reedley College instills a passion for learning that will meet the academic, workforce, and personal goals of our diverse population.

The Flight Science program, part of the Aeronautics discipline at Reedley College was developed to help fulfill these goals of Reedley College. Aeronautics is a long standing discipline at Reedley College and incorporates the Aviation Maintenance Technology program, a signature program for the college and the district. This program is well known in the San Joaquin Valley and has a long and distinguished history. The AMT program is for individuals to train and serve as Airframe and Powerplant mechanics to repair and maintain aircraft. The Aeronautics discipline historically consisted of solely the AMT program, but has recently added a new course of study called Flight Science. This pathway will allow students to earn a Certificate of Achievement or an Associate of Science degree in flight science related subjects. The emphasis of the program is on piloting careers, but students may enter a number of other careers in flight operations, aviation management, aviation safety, and aviation education after completing this program. Students will have the opportunity, if they choose, to obtain a Private or Commercial Pilot License along with instrument and flight instructor endorsements.

The Reedley College Flight Science program is a partnership between the Reedley College, Mazzei Flying Services, and The Fresno Business Council. The Fresno Business Council was the convening agent to discuss the possibility of a public and private partnership which would fill a need in the local aviation community as well as a growing need nationwide. Meetings were called by the Fresno Business Council, with college representatives and MFS employees meeting to discuss collaboration and partnership opportunities. A search of other California Community College's flight programs was conducted to explore existing classes, pathways, and partnerships. The college worked closely with representatives from Orange Coast College in Southern California and their industry partner, Sunrise Aviation, to develop a program model. The Aeronautics program faculty also discussed the Flight Science program with the Aeronautics Advisory Committee.

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AERONAUTICS ADVISORY COMMITTEE				
NAME	TITLE	INSTITUTION/COMPANY	E-MAIL	TELEPHONE
Addis, Mark	President	Mazzei Flying Service	<a href="mailto:maddis@flymfs.com">maddis@flymfs.com</a>	(559) 251-7501
Asman, Jason	Instructor	Reedley College	<a href="mailto:jason.asman@reedleycollege.edu">jason.asman@reedleycollege.edu</a>	(559) 638-0300 Ext. 3243
Benson, George	Instructor	Reedley College	<a href="mailto:ba.flyer@hotmail.com">ba.flyer@hotmail.com</a>	(559) 303-3099
Borges, Matt	Pilot	Mazzei Flying Service	<a href="mailto:mborges@flymfs.com">mborges@flymfs.com</a>	(559) 251-7501
Card, John	Maint. Technician	Ly-Con Inc.	<a href="mailto:john@lycon.com">john@lycon.com</a>	(559) 284-2818
Meeker, Jerry	Mechanic	Rogers Helicopters	<a href="mailto:maddogosp@yahoo.com">maddogosp@yahoo.com</a>	(559) 307-2383
Pierce, Boyd	West Air	West Air	<a href="mailto:pierce@westair.net">pierce@westair.net</a>	(559) 454-7845
Rayner, Bruce	DOM	Landmark Aviation	<a href="mailto:brayner@corporate.com">brayner@corporate.com</a>	(559) 251-2674 Ext. 151
Regier, Tom	Owner	Regier Aviation	<a href="mailto:regieraviation@att.net">regieraviation@att.net</a>	(559) 859-0734
Richey, David	Instructor	Reedley College	<a href="mailto:david.richey@reedleycollege.edu">david.richey@reedleycollege.edu</a>	(559) 638-0318
Toews, Leo	Admin.	Landmark Aviation	<a href="mailto:ltoews@corpair.com">ltoews@corpair.com</a>	(559) 251-1555
Zielke, Keith	Instructor	Reedley College/VR0P	<a href="mailto:keith.zielke@reedleycollege.edu">keith.zielke@reedleycollege.edu</a>	(559) 638-0300 Ext. 3474

**Item 5. Enrollment and Completer Projections**

(A) Enrollment Data

CB01: Course Department Number	CB02: Course Title	<Year 1>		<Year 2>	
		Annual # Sections	Annual Enrollment Total	Annual # Sections	Annual Enrollment Total
FLGHT 101	Private Pilot Ground School	1	11	1	NA
FLGHT 102	Aviation History	1	12	1	NA
FLGHT 103	Careers in Aviation	1	12	1	NA

**Item 6. Place of Program in Curriculum/Similar Programs**

Before completing this section, review the college's existing program inventory in the CCC Curriculum Inventory, then address the following questions:

- a) No active inventory records need to be made inactive or changed in connection with the approval of the Flight Science program.
- b) The Flight Science program does not replace any existing program(s) on the college's inventory.
- c) Reedley College currently offers instruction in the field of Aviation Maintenance Technology. The AMT program as well as the Flight Science program are both CTE programs in the aviation industry.

**Item 7. Similar Programs at Other Colleges in Service Area**

No similar programs have been identified in the college service area represented by a circular geographic area with a 15-mile radius. This 15-mile radius encompasses the vast majority of the students who attend courses at the College.



## **Spring Joint Advisory Meeting**

### **Advisory Committee Minutes**

Date: 3/17/2015

Instructor (s) present: David Richey (Reedley College), Jason Asman, Keith Zielke (Reedley College, Valley ROP)

Advisory Members present: Bruce Rayner, Tom Regier, Leo Toews, John Card, Danielle Phillipson, Matt Silliman

Administrators, Staff, Others Present: Ronald H. Nishinaka

- I. Meeting Called to Order By Keith Zielke
  - A. Minutes reviewed and approved
  
- II. Welcome and Introductions
  - A. All members introduced themselves ; Ronald Nishinaka, SCCCD Board President, John Card, LyCon, Danielle Phillipson, Lycon, Bruce Rainer, Landmark Aviation, Leo Toews, Retired, Corporate Aircraft, Tom Regier, Retired, Reedley College and Regier Aviation, Matt Silliman, RC AMT student representative
  
- III. Industry Trends
  - A. Labor Market

Bruce talked briefly talked about the shop being busy, having 3 people leave and difficulty replacing them. John discussed Lycon being as busy as they want to be and have hired several new technicians. Many smaller engine shops have closed, leaving them the overload.
  
  - B. New Trends in Industry

Tom opened a conversation about the use of cryogenic process used on high wear/stress items and having a reduced failure rate with the crankshafts used on aerobatic aircraft. John gave a full description of the process and the possibilities in engine development. David Richey gave a summary of Northrop Grumman shopping A&P schools (including RC) for technicians in their many programs. Bruce talked about Landmark being down 50 technicians (out of 200). There was a brief discussion of the upcoming unleaded Avgas and possible effects on Aviation reciprocating engines. John said there are many unknown, but possibly will be on the market in a year or two, will be a wait and see situation.
  
  - C. Equipment and Software

RC AMT staff reported on awaiting the arrival of the AI-25 fan jet, APU engine stand projects, assembly of new Bonanza, retrieval of donated Cherokee Six from Redding area, reorganization of storage hanger and scrapping of 2 stripped Cessna 172s and Bonanza landing gear mock-up.

IV. Current or Potential Articulations (2+2)

- A. Keith reported the possibility of getting the VROP Aviation program articulated with AMT 11, AMT11L and Flight 101.

V. Combined Pathway Events

- A. Field Trips and Guest Speakers

- B. Job Shadowing/Internships

VI. Other – New Flight Science Program

- A. Jason gave a complete overview of the possible partnership with Mazzies Flight Services for a degree granting Professional Pilot Program. Basically, Matt from MFS and Jason have developed the program structure and content. Jason has started the course outlines in CurricuNet and we are waiting for MFS to complete outlines before the curriculum committee deadlines. The advisory committee approves this new pathway and confirms that the program will meet FAA (FAR 141) requirements for flight training.

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VII. Adjournment time: 8:30pm

VIII. Name of Person Taking/Preparing Minutes: Keith Zielke

<b>Airline Pilots, Copilots, and Flight Engineers Estimated Employment and Projected Growth</b>					
<b>Geographic Area (Estimated Year- Projected Year)</b>	<b>Estimated Employment</b>	<b>Projected Employment</b>	<b>Numeric Change</b>	<b>Percent Change</b>	<b>Additional Openings Due to Net Replacements</b>
California (2012-2022)	6,000	6,900	900	15.0	1,800
Inland Empire Area (2012-2022)	590	650	60	10.2	170
Los Angeles County (2012-2022)	2,390	2,390		.0	690
San Francisco Bay Area (2012-2022)	2,070	2,280	210	10.1	600
Solano County (2012-2022)	50	50		.0	10

Source: Employment Development Department  
 Labor Market Information Division  
<https://www.labormarketinfo.edd.ca.gov/>



<b>Commercial Pilots Estimated Employment and Projected Growth</b>					
<b>Geographic Area (Estimated Year-Projected Year)</b>	<b>Estimated Employment</b>	<b>Projected Employment</b>	<b>Numeric Change</b>	<b>Percent Change</b>	<b>Additional Openings Due to Net Replacements</b>
California (2012-2022)	3,100	3,500	400	12.9	900
Butte County (2012-2022)	30	40	10	33.3	10
East Bay Area (2012-2022)	360	450	90	25.0	100
Imperial County (2012-2022)	40	40		.0	10
Kern County (2012-2022)	100	120	20	20.0	30
Los Angeles County (2012-2022)	800	1,000	200	25.0	230
Mother Lode Region (2012-2022)	30	40	10	33.3	10
Napa County (2012-2022)	60	80	20	33.3	20
North Coast Region (2012-2022)	30	50	20	66.7	10
North Valley Region (2012-2022)	20	20		.0	
Orange County (2012-2022)	420	430	10	2.4	120
San Benito and Santa	150	130	-20	-13.3	40

Clara Counties (2012-2022)					
San Diego County (2012-2022)	240	320	80	33.3	70
San Luis Obispo County (2012-2022)	30	40	10	33.3	10
Sonoma County (2012-2022)	60	40	-20	-33.3	20
Sutter and Yuba Counties (2012-2022)	30	10	-20	-66.7	10
Ventura County (2012-2022)	50	50		.0	20

Source: Employment Development Department  
Labor Market Information Division  
<https://www.labormarketinfo.edd.ca.gov/>

# COMMERCIAL PILOTS AND AIRLINE PILOTS, COPILOTS, AND FLIGHT ENGINEERS

## CENTRAL VALLEY/MOTHERLODE REGION

AMADOR, ALPINE, CALAVERAS, FRESNO, INYO, KERN, KINGS, MADERA, MARIPOSA, MERCED, MONO, SAN JOAQUIN, STANISLAUS, TULARE AND TUOLUMNE COUNTIES



### OCCUPATIONAL PROFILE



512 Jobs (2015)

+ 9.8% Change (2016-2021)

Median Hourly Wages \$37.78

#### Related Job Titles:

- Airline Captain
- Airline Transport Pilot
- Check Airman

## Commercial Pilots & Airline Pilots, Copilots, and Flight Engineers

**Commercial Pilots** pilot and navigate the flight of fixed-winged aircraft on nonscheduled air carrier routes, or helicopters. This occupation requires a Commercial Pilot certificate. It also includes charter pilots with similar certification, air ambulance and air tour pilots.

**Airline Pilots, Copilots, and Flight Engineers** pilot and navigate the flight of fixed-wing, multi-engine aircraft, usually on scheduled air carrier routes, for the transport of passengers and cargo. This occupation requires Federal Air Transport Pilot certificate and rating for specific aircraft type used. It also includes regional, national, and international airline pilots and flight instructors of airline pilots.

Analysis of the job requirements and duties for these occupations revealed that they share many of the same components. However, there is a greater level of knowledge skills and abilities required for Airline Pilots, Copilots, and Flight Engineers than there are for Commercial Pilots.

Both occupations require a pilot certification, but there is, again, a higher level of regulation and specification for Airline Pilots, Copilots and Flight Engineers.

Knowledge	Skills	Abilities
✓ Transportation	✓ Operation and Control	✓ Control Precision
✓ Geography	✓ Operation Monitoring	✓ Response Orientation
✓ Public Safety and Security	✓ Critical Thinking	✓ Depth Perception
✓ Computer and Electronics	✓ Judgement and Decision Making	✓ Problem Sensitivity

Information and data for this report are the following public and proprietary sources: Economic Modeling Specialists (EMS), Bureau of Labor Statistics and O\*NET online. More information about the Centers of Excellence is available at [www.coecc.net](http://www.coecc.net).

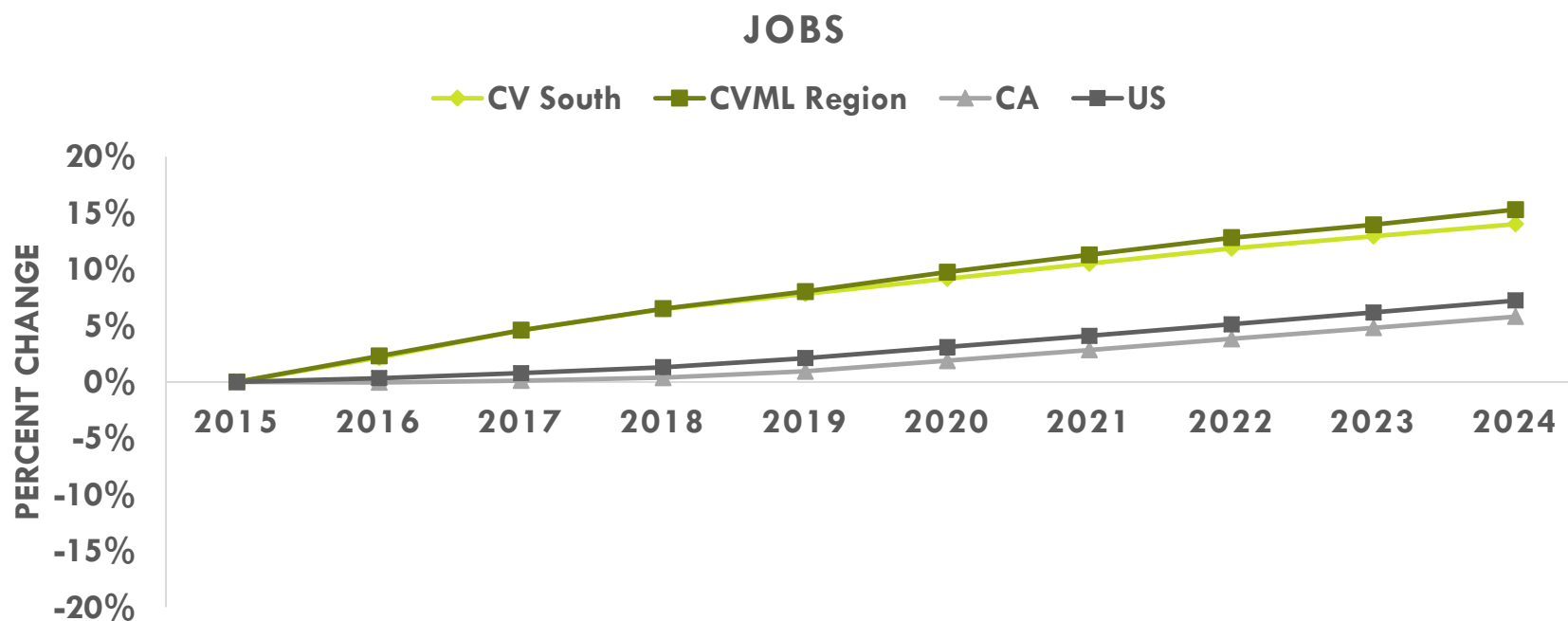
#### Important Disclaimer

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. Efforts have been made to qualify and validate the accuracy of the data and the reported findings; however, neither the Centers of Excellence, COE host District, nor California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipient community colleges or their representatives based upon components or recommendations contained in this study.

Occupation	2016 Jobs	2021 Jobs	2016 - 2021 % Change	Annual Openings	Median Hourly Wages
Airline Pilots, Copilots, and Flight Engineers	111	112	1%	4	\$ 48.56
Commercial Pilots	413	462	12%	24	\$ 34.79

There were zero pilot programs identified in the Central Valley/Motherlode Region.

### Sub-Region, Region, State and National Job Trends



Information and data for this report are the following public and proprietary sources: Economic Modeling Specialists (EMS), Bureau of Labor Statistics and O\*NET online. More information about the Centers of Excellence is available at [www.coecc.net](http://www.coecc.net).

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