



## **AVT 1118 Weight & Balance**

### **Scot Pembleton**

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### **OFFICE HOURS**

Miami Valley CTC Wednesday and Thursday 4:30 pm to 5:00 pm, Saturday 8:00 am to 9:00am.

Also by appointment at the Sinclair Dayton campus building 13 Room 210

### **COURSE DESCRIPTION**

This course covers aviation maintenance performance calculations to include theory of aircraft weight and balance encompassing documentation, weighing the aircraft, locating the center of gravity, adverse center of gravity checks, large aircraft weight and balance computations and determination of ballast requirements. Two classroom, three lab hours per week.

### **OBJECTIVES**

- The purpose(s) of weighing or reweighing
- General preparations for weighing, with emphasis on aircraft preparation and/or weighing area considerations.
- The general location of airplane center of gravity (CG) in relation to the center of lift for most fixed main airfoils
- Definitions of any of the following: datum, arm, moment (positive or negative), or moment index
- The meaning and/or application of any terms/nomenclature associated with weight and balance other than those mentioned in element “d” above, including but not limited to any of the following: tare, ballast, and residual fuel/oil
- Procedures for finding any of the following: datum, arm, moment (positive or negative), or moment index
- Purpose and/or application of mean aerodynamic chord (MAC)
- Adverse loading considerations
- Demonstrates the ability to calculate weight and balance CG and complete aircraft weight and balance documentation
- Demonstrate the ability to perform the following—
  - a. Weighing equipment preparation and setup according to manufacturer’s instructions
  - b. Locate procedures for leveling and the leveling points for an aircraft
  - c. Locate weigh points, procedures for determining CG, and determine the weigh point arms for an aircraft



- d. Identify tare items for a specific aircraft and weighing procedure
- e. Find the datum for at least two different aircraft
- f. Determine the weight and location of required ballast after an (actual or hypothetical) equipment change

### **TEXTS and MATERIALS**

FAA-H-8083-30-(9ATB) General Aviation Maintenance Technician Handbook, Workbook and FAA-H-8083-1A Weight and Balance.

### **ASSIGNMENTS**

09/01/2012, First Day, Lab Sheets H4A, H5A, H8A, H10A, H11A, Work Book pages 3-5  
09/08/2012, Lab Sheets H13A, H14A, H16B, H8.1A, H20D, H-18A, Work Book pages 6-8  
09/15/2012, Lab Sheets H23A, H25A, H27C, Work Book pages 9 and 10  
09/22/2012, Lab Sheets H30A, H25B, H27C, Work Book pages 11 and 12  
09/29/2012, Lab Sheets C4A, C5A, Work Book pages 27 and 28  
10/06/2012, Lab Sheets C8A, C9A, C10A, Work Book page 29  
10/13/2012, Review for Mid Term Exam, Lab Sheets C11A, C13A, Work book page 30  
10/20/2012, Mid Term Exam, Lab Sheets C14A, C16B, Work Book page 31  
10/27/2012, Lab Sheets C17B, C19C, C20C, Work Book Page32  
11/03/2012, Lab Sheets C21C, C22C, C23C, Work Book Pages 33  
11/10/2012, Lab, Work Book page 34  
11/17/2012, Lab Sheet C26D  
11/24/2012, Thanks Giving Holiday  
12/01/2012, Lab Sheets C27D, C29E  
11/08/2012, All Lab Sheets Due, Work Book Due, and Review for Final Exam  
11/15/2012, Final Exam

### **ATTENDANCE POLICY**

- Class starts at 9:00am and ends at 12:30pm
- Break time will be given at 10:00am and 11:00am
- Students are expected to be on time and all time missed will have to be made up

### **CLASSROOM RULES OF CONDUCT**

- Drinks will be allowed in the classroom
- No food will be allowed in the classroom, eating will be in the shop area.
- Students will show respect for others in the classroom and will not use cell phones or other electronic media during class. In addition, a student who disrupts instruction will be asked to leave the classroom and will lose participation points for



the day/week and will have to make up the time

- Students are expected to clean up after one selves, shop area and classroom.
- No Smoking is allowed on School grounds, not even in one's car.