

**DEPARTMENT OF THE AIR FORCE  
AIR UNIVERSITY (AETC)**

**Science of Flight (Fall 2019)**

CREDIT HOURS: 1 credit hour (elective course)

INSTRUCTOR'S NAME: Colonel Scott Vaughn

REQUIRED TEXTBOOK (provided): The Science of Flight: A Gateway to New Horizons

COURSE DESCRIPTION: This is an introductory and customized course that focuses on how airplanes fly, how weather conditions affect flight, flight and the human body, and flight navigation. The course is designed to complement materials taught in math, physics, and other science-related courses.

This course is Part 1 of the overall AFJROTC curriculum and constitutes 40% of your overall AFJROTC grade. Part 2 is the respective Leadership course (40% of overall grade) and Part 3 is Wellness (PT – 20% of overall grade).

COURSE OBJECTIVES: After successful completion of this course, students will be able to:

1. Analyze the elements of flight.
2. Evaluate how atmospheric conditions affect flight.
3. Evaluate how flight affects the human body.
4. Analyze flight navigation and the purpose of aerial navigation aids.

UNIFORM DAY: THURSDAY

TUTORING DAYS: Every 2nd and 4th Wednesday (8th Hour) or by appointment.

GRADING PROCEDURES: Semester grades are determined by a composite score of your performance throughout the semester. The table below describes the point breakdown of each of the areas you will be evaluated in as well as the scale used to determine your grade. Note: You must pass this class with a "C" or better for continued enrollment in AFJROTC.

| Item   | Points     | Grade Scale               |
|--|------------|---------------------------|
| Papers/Presentations                         | 30         | A = 90 - 100              |
| Weekly Class Participation & Bearing/Conduct | 20         | B = 80 - 89               |
| Exams (2 @ 15 points each)                   | 30         | C = 70 - 79               |
| Final Exam                                   | 20         | D = 60 - 69               |
|  |            | F = <59                   |
| <b>TOTAL</b>                                 | <b>100</b> | <b>F = 59 &amp; Below</b> |

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## COURSE SCHEDULE: Monday & Tuesday

| Chapter/Lesson                  | Title/Pages                                | Dates            |
|---------------------------------|--|------------------|
| N/A                             | Drill/Cadet Guide                          | 22-23 July       |
| N/A                             | Fit for Uniform                            | 29-30 July       |
| N/A                             | Unit Goals/Uniform Basics                  | 5-6 Aug          |
| Chapter 1/ Lesson 1             | Principles of Flight                       | 12-13 Aug        |
| Chapter 1/ Lesson 2             | Physics of Flight                          | 19-20 Aug        |
| Chapter 1/ Lesson 3             | The Purpose and Function of Airplane Parts | 26-27 Aug        |
| Chapter 1                       | <b>In-class Activity/Guest Speaker</b>     | 3 Sep            |
| Chapter 1/ Lesson 4             | Aircraft Motion and Control                | 9-10 Sep         |
| Chapter 1/ Lesson 5             | Flight Power                               | 16-17 Sep        |
| <b>Chapter 1 Test</b>           | Mon-Review <b>Tues-Test</b>                | <b>23-24 Sep</b> |
| Chapter 2/ Lesson 1             | The Atmosphere                             | 14-15 Oct        |
| Chapter 2/ Lesson 2             | Weather Elements                           | 21-22 Oct        |
| Chapter 2/ Lesson 3             | Aviation Weather                           | 28-29 Oct        |
| Chapter 2/ Lesson 4             | Weather Forecasting                        | 4-5 Nov          |
| Chapter 2                       | <b>In-class Activity/Guest Speaker</b>     | 12 Nov           |
| Chapter 2/ Lesson 5             | The Effects of Weather on Aircraft         | 18-19 Nov        |
| <b>Chapter 2 Test</b>           | Mon-Review <b>Tues-Test</b>                | <b>25-26 Nov</b> |
| Chapter 1-2                     | <b>Presentations</b>                       | <b>2-3 Dec</b>   |
| Chapter 1-2                     | <b>Presentations</b>                       | <b>9-10 Dec</b>  |
| <b>Final Exam (Chapter 1-2)</b> | <b>Mon-Review, Tues -Test</b>              | 16-17 Dec        |

**\*\*\*\*\*ABSENT/TARDY POLICY (NO EXCEPTIONS):** A student will be considered absent from class if they enter the classroom more than 10 minutes after the designated start time. If the student has a valid pass to be late to class, it will be excused. The absence will be considered unexcused if the student is late without being excused by the school administration or the parent signing in the child late. If parents/guardians desire attendance updates throughout the day, they have the option to sign up in ParentVUE.

The following is a breakdown of the disciplinary steps taken with regards to the Tardy Policy:

- 1st Tardy: Student Conference
- 2nd Tardy: Student Conference and Parent Phone Call + Warning re: 3<sup>rd</sup> Tardy is ASD
- 3rd Tardy: ASD
- 4th Tardy: Office Referral
- 5th Tardy: Office Referral/Consider removal from AFJROTC

**\*\*\*\*\*Behavioral Policy (NO EXCEPTIONS):** Cadets will act in accordance with the Cadet handbook. Should the Cadet fall short of expectations, the following actions will be taken:

- 1<sup>st</sup> Offense: Student Conference
- 2<sup>nd</sup> Offense: Student Conference and Parent Phone Call
- 3<sup>rd</sup> Offense: ASD and Parent Conference
- 4<sup>th</sup> Offense: Referral to Office/Removal from AFJROTC