

SC-952 COURSE SYLLABUS FOR AY 2016-2017

COURSE: **AEROSPACE SCIENCE (AS) 300: EXPLORING SPACE – THE HIGH FRONTIER & LEADERSHIP EDUCATION (LE) 300: LIFE SKILLS AND CAREER OPPORTUNITIES**

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CREDIT HOURS: One elective/PE credit

COURSE MATERIALS: Textbook: AS-300, Exploring Space – The High Frontier
Leadership Education 300: Life Skills and Career Opportunities
Leadership Education 100: Traditions, Wellness, Foundations of Citizenship
AF Manual 36-2203, Personnel Drill and Ceremonies
Selected video tapes/DVD
SC-952 Cadet Handbook
AFJROTC Classroom Performance System

COURSE DESCRIPTION:

1. **Exploring Space, The High Frontier (AS-300).** This science course includes the latest information available in space science and space exploration. It comprises 40% of your class time. The course begins with the study of the space environment from the earliest days of interest in astronomy and early ideas of the heavens, through the Renaissance, and on into modern astronomy. It discusses issues critical to travel in the upper atmosphere. It investigates the importance of entering space and discusses manned and unmanned space flights. Throughout the course, we will explore the lives and careers of important space explorers.

2. **Leadership Education (LE-300)** focuses on preparing students for life after high school. Topics that will be covered include aiming towards a college degree and pursuing a career. Financial planning, educating students on keeping their money safe and secure, using insurance to protect what they have, and doing what matters most for their career are also topics covered. The first week or two of the course will include the first lesson from LE-100, which covers the organization of JROTC. The main focus will be the history of the nation's junior rotc programs. Additionally, cadets will be taught the fundamentals of Drill and Ceremonies. This portion of the course concentrates on the elements of military drill, and describes individual and group precision movements, procedures for saluting, drill, ceremonies, reviews, parades, and development of the command voice. Students are provided detailed instruction on ceremonial performances and protocol for civilian and military events and have the opportunity to personally learn drill. Most of the work is to be hands-on. During the Fall semester/block, LE-300 lessons will come from Chapters 1 through 4. During the Spring semester/block, Chapters 5 through 8 will be covered.

3. **Leadership Elective 6 (Cadet Handbook).** Several hours at the beginning of the semester will focus on information and material contained in the Cadet Handbook. The Cadet Handbook is a document required by HQ AFJROTC and it contains instructions on how the AFJROTC operates at the local level.

4. **Wellness/Physical Fitness** portion incorporates the Cadet Health and Wellness Program (CHWP). The CHWP is an exercise program focused upon individual base line improvements with the goal of achieving a Presidential Physical Fitness standard calculated with age and gender. The goal of the CHWP is to motivate JROTC cadets to lead active, healthy lifestyles beyond program requirements and into their adult lives. An initial test will be administered to cadets at the beginning of semester/school to establish a baseline and goals. Quarterly tests are conducted to measure individual improvement so cadets can compare results with individual and unit goals. A final test is conducted at the end of the semester/school year to determine individual fitness levels. Physical fitness tests are comprised of the following five exercises: Mile run, curl-ups, push-ups, shuttle run, and V-sit reach. Cadets will be given the opportunity to put into practice the wellness concepts that are taught in Leadership Education I.

5. Students **WILL** wear the Air Force JROTC uniform weekly (Wednesday) and the **issued** PT uniform on Fridays.

COURSE OBJECTIVES AND TOPICS:

AS 300/Exploring Space, The High Frontier

Objectives:

1. Know the history of astronomy and the specific characteristics of the Earth, Moon, solar system, and the planets.
2. Comprehend the big picture of space exploration, including the history of spaceflight, organizations doing work in space, and the overall space environment.
3. Comprehend the importance of entering space, characteristics of manned and unmanned spaceflight, and how humans are affected during spaceflight.
4. Comprehend the key concepts for getting from the surface of the Earth into Earth orbit and to other planets and back again.
5. Comprehend how spacecraft, rockets, and launch vehicles are designed and built.
6. Comprehend the latest advances in space technology.

Topics to be covered First Semester: Units 1 and 2

Chapter 1: The History of Astronomy

- a. Lesson 1: Prehistoric and Classical Astronomy
- b. Lesson 2: Astronomy and the Renaissance
- c. Lesson 3: The Enlightenment and Modern Astronomy

Chapter 2: The Earth and Moon

- a. Lesson 1: Earth, Inside and Out
- b. Lesson 2: The Moon: Earth's Fellow Traveler

Chapter 3: The Sun and the Solar System

- a. Lesson 1: The Sun and Its Domain
- b. Lesson 2: The Terrestrial Planets
- c. Lesson 3: The Outer Planets
- d. Lesson 4: Dwarf Planets, Comets, Asteroids, and Kuiper Belt Objects

Chapter 4: Deep Space

- a. Lesson 1: The Milky Way Galaxy
- b. Lesson 2: What Lies Beyond

Chapter 5: Exploring, Living, and Working in Space

- a. Lesson 1: Why Explore Space
- b. Lesson 2: Assembling a Space Mission
- c. Lesson 3: The Hazards for Spacecraft
- d. Lesson 4: Making Space People-Friendly

Topics to be covered Second Semester: Units 3 and 4

Chapter 6: Space Programs

- a. Lesson 1: The US Manned Space Program
- b. Lesson 2: The Soviet/Russian Manned Space Program
- c. Lesson 3: Space Programs Around the World

Chapter 7: The Space Shuttle

- a. Lesson 1: The Shuttle Program
- b. Lesson 2: Lessons Learned: Challenger and Columbia

Chapter 8: Space Stations and Beyond

- a. Lesson 1: From Salyut to the International Space Station
- b. Lesson 2: The Future in Space

Chapter 9: The Unmanned Missions of Space Probes

- a. Lesson 1: Missions to the Sun, Moon, Venus, and Mars
- b. Lesson 2: The Hubble Space Telescope and Missions to Comets and Outer Planets

Chapter 10: Orbits and Trajectories

- a. Lesson 1: Orbits and How They Work
- b. Lesson 2: Maneuvering and Traveling in Space

Chapter 11: Rockets and Launch Vehicles

- a. Lesson 1: It Is Rocket Science: How Rockets Work
- b. Lesson 2: Propulsion and Launch Vehicles

Chapter 12: Robotics in Space

- a. Lesson 1: Developing Robots for Space
- b. Lesson 2: The Mars Rover and Beyond

Chapter 13: Commercial Use of Space

- a. Lesson 1: Private Industry Enters Space
- b. Lesson 2: Space in Your Daily Life

LE/Leadership Education

Objectives

1. Analyze the heritage, organization, and tradition of service programs.
2. Analyze the benefits of positive personal behavior.
3. Evaluate healthy living through physical activity and good nutrition.
4. Apply safe, drug-free decisions.
5. Analyze the importance of citizenship in the United States.

Topics to be covered First Semester: LE 100, Chapter 1, Lesson 1

- Chapter 1: Introduction to JROTC Programs
- a. Lesson 1: Organization of the JROTC
 - b. Lesson 2: The Military Uniform and Appearance Standards
 - c. Lesson 3: Customs and Courtesies for Junior ROTC

Topics to be covered First Semester: LE 300

- Chapter 1: Charting Your Financial Course
- a. Lesson 1: Creating a Budget
 - b. Lesson 2: Savings and Bank Account
 - c. Lesson 3: Real-Life Issues in Buying and Selling
- Chapter 2: Managing Your Resources
- a. Lesson 1: Avoiding the Credit Trap
 - b. Lesson 2: Insurance for Protecting Your Resources
- Chapter 3: Career Opportunities
- a. Lesson 1: Researching Careers
 - b. Lesson 2: Self-Discovery
 - c. Lesson 3: Career Paths
- Chapter 4: Aiming Towards a College Degree
- a. Lesson 1: Financing for College
 - b. Lesson 2: Selecting a College
 - c. Lesson 3: Navigating the Testing Maze
 - d. Lesson 4: Essays, Interviews, and Campus Visits

Topics to be covered Second Semester: LE 300

- Chapter 5: Charting Your Course
- a. Lesson 1: Adjusting to College Life
 - b. Lesson 2: Choosing a Major
 - c. Lesson 3: Planning Your Schedule
- Chapter 6: Applying for Jobs
- a. Lesson 1: The Job Search Process
 - b. Lesson 2: Preparing Your Resume
 - c. Lesson 3: Building Interviewing Skills
- Chapter 7: Working for the Federal Government
- a. Lesson 1: Military Careers
 - b. Lesson 2: Careers in Aerospace
 - c. Lesson 3: Careers in Public Service
- Chapter 8: Developing Your Career Skills
- a. Lesson 1: Planning Your Professional Development
 - b. Lesson 2: Learning to Work With Others
 - c. Lesson 3: Seeking Feedback and Promotions
 - d. Lesson 4: Your Civic Responsibilities

Drill (First and Second Semester)

Objectives

1. Know the importance of drill and ceremonies.
2. Know basic commands and characteristics of command voice.
3. Apply and execute the concepts and principles of basic drill positions and movements.
4. Know when and how to salute.

Wellness and Physical Fitness (First and Second Semester)

Objectives

1. Motivate AFJROTC cadets to lead active, healthy lifestyles beyond program requirements and into their adult lives.
2. Create an individualized training program based on national standards by age and gender.
3. Identify areas of improvements for each cadet.
4. Incorporate a physical training program to reach goals.

<u>GRADES AND EVALUATION:</u>	Uniform wear/inspections/drill	35%
	Evaluations (Tests, quizzes, instructor evaluation)	30%
	PT uniform wear/participation	20%
	Assignments (Workbooks, briefings, projects)	15%

OVERALL GRADE BREAKDOWN IS AS FOLLOWS:

Aerospace Science (usually taught on Tuesday and Thursday):	40% of grade
Leadership Education (usually taught on Monday and Wednesday)	40% of grade
Wellness and Health (usually taught on Friday):	20% of grade

EXAMS: The exams will be based on lesson objectives and samples of behavior covered in the Aerospace Science textbooks, Air Force Junior ROTC Cadet Guide, and corresponding workbooks. These exams may be made up of multiple choice, matching, short essay type questions, and fill in the blanks type questions. Some exams may be shorter in length, while others will be longer. All exams regardless of length will weigh the same. All questions will be derived from the assigned readings and will be reinforced during classroom discussions. Therefore, it benefits the entire class if everyone completes their reading assignments and is prepared for classroom discussions. Any missed exams must be made up. Makeup exams time and location will be determined as required. **SOME TESTS WILL BE GIVEN USING THE CLASSROOM PERFORMANCE SYSTEM AND GOOGLE CLASSROOM.**

<u>GRADING SCALE:</u>	A = 90 – 100	C = 70 – 79	F = 59 or less
	B = 80 – 89	D = 60 – 69	

UNIFORM WEAR: Uniform wear is a large part of the Air Force JROTC program. All cadets are required to wear the appropriate uniform each Wednesday, from the start of the school day until released. If a cadet attends school on Wednesday and fails to wear the uniform, they will receive a “0” for the uniform grade. The cadet may make up the uniform day, but the highest grade they can receive is a 75. If absent on uniform day, the cadet must wear the uniform on the first day they return to school. **CADETS CANNOT PASS THIS CLASS WITHOUT WEARING THE UNIFORM.** Cadets missing more than 4 uniform days during the semester will automatically fail the class. Cadets are required to wear their issued Physical Fitness uniforms on Fridays unless otherwise directed. Cadets are graded on a rubric that includes bringing the appropriate clothes/uniform (shorts and shirt are provided—cadets must wear athletic shoes that they provide –NOT BOOTS, SANDALS, FLIP FLOPS OR STREET SHOES). Cadets are graded on participation in exercise and games. **THEY DO NOT HAVE TO BE A CONSUMMATE ATHLETE—JUST DO THEIR BEST.**

EVALUATION: You will be constantly evaluated in some form or another during your life. This class is no different! Your overall attitude, demonstrated enthusiasm to learn, and your constructive participation in class will affect your overall grade. Remember that the way you present yourself could push your grade to a point higher. **We expect everyone to be prepared for each class by completing reading assignments and/or other assigned tasks and contribute by participating in classroom discussions.** In addition, all assignments must be completed and turned in at the appointed time unless arranged otherwise.

PRESENTATION: You will be assigned an oral briefing to demonstrate your verbal communication skills. You will prepare and present a 2 to 3 minute extemporaneous briefing on a subject to be determined. The target time for this presentation is 3 minutes and points will be deducted for those that are outside the 3 to 5 minute range. Each cadet is

required to make a presentation each nine week grading period. Cadets will draw a topic from a hat during the first week of September, November, February, and April. The presentations/briefings will take place during the third week of these months.

WRITTEN ASSIGNMENTS: You will be required to complete a one page Talking Paper covering your presentation topic to be turned in before your presentation/briefing during the third week of September, November, February, and April. The instructor will review the Talking Paper to ensure you have put forth sufficient planning and organized your material for successful delivery of your presentation. In keeping with the school's WICOR initiative, you will be required to complete a number of writing assignments during the semester.

SAFER CHOICES (SEX EDUCATION): South Carolina legislature has mandated that all students receive 12.5 hours of instruction on safer choices as it relates to sex education. This instruction will take place two weeks before the final week of the semester and will be taught by PE instructors. Students are required to receive this instruction one time.

COMMUNITY SERVICE: All cadets are expected to participate in as many cadet activities as possible, especially Air Force JROTC sponsored community service projects. Our goal is for each cadet to participate in a minimum of 12 hours of service projects each semester. In addition, cadets are required to participate in the following four cadet corps activities: Veterans Day Parade, Christmas Parade, Military Ball, Pass-in-Review/Awards Program. A full annual listing of activities can be found on the cadet corps webpage.

CURRICULUM IN ACTION TRIPS (CIA)/FIELD TRIPS: Throughout the semester, the cadets will have opportunities to participate in school-sponsored activities that serve as an extension of the AFJROTC curriculum, field trips included, provided funds are available. Cadets must be in good academic and disciplinary standing to participate.

PARENT INVOLVEMENT: We encourage parental involvement. We can be reached at the numbers mentioned above at any time to discuss issues relating to the cadets.

WEBSITE: We have established an AFJROTC website page. You can reach it through the school's website or use the link below. The site includes pictures and information about activities that the cadet corps has participated in and contains a calendar of events for your information. The link is <http://www.emeraldafjrotc.com> or <http://www.gwd50.org/domain/102>.