**Gateway STEM High School**

***Learners Today, Leaders Tomorrow!***



**AFJROTC – Aerospace Science 300 – Grades 10-12**

**Room 119E**

**Course Syllabus**

**2024 - 2025**

**INSTRUCTOR: Jeff Ditlevson, Lt Col (Ret), USAF**

**PLANNING PERIOD: 1st**

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**COURSE OVERVIEW:**

* The AFJROTC curriculum includes Aerospace Science (AS) and Leadership Education (LE), and Wellness components. All students are granted academic credit applicable toward graduation requirements for the successful completion of AFJROTC courses provided by the Air Force equivalent to credit given for other academic courses per the Air Force School Agreement. Each academic course must consist of Aerospace Science, Leadership Education and Wellness components. The wellness portion is accredited as an approved PE credit towards graduation.

**COURSE CONTENT:**

* ***Aerospace Science 300: Exploring Space: The High Frontier*** is typically the second/third year science course in the high school sequence of Aerospace Science courses for the Air Force JROTC. This course has been completely rewritten to include the latest information and teaching philosophies, incorporating 21st century learning strategies. The new course provides students with the latest information on exploring space as well as an introduction to cybersecurity and technology. The associated textbook has been completely revised and includes the latest information available in space science and space exploration. The course begins with the study of the space environment from the earliest days of interest in astronomy and early ideas of the heavens, from the Greeks through the Renaissance, and on into modern astronomy. Students will be provided an in-depth view of the solar system, including Earth, the Sun, the Moon and planets. Additional time will be spent on these lessons to ensure students have a firm understanding of the basic space concepts. The course also covers the history of space travel and more modern space probes and robotics. Students will examine the effects of space on the human body. The course also investigates the history of rockets, launch vehicles, and the coordinated systems required for a successful launch into space. Finally the text/course will offer a cybersecurity chapter that outlines the importance of cybersecurity in space and in daily life. This course is aligned with the National Science Education Standards, the Math Standards and Expectations, and ISTE National Educational Technology Standards for Students.

**COURSE OBJECTIVES / LEARNING OUTCOMES:**

* This is a customized course about space and the human exploration of space. The course is specifically created for the US Air Force Junior ROTC programs. It includes the latest information available in space science and space exploration. Throughout the course, there are individual and group activities, technology enrichment, readings, review questions, and both formative and summative assessments to guide in the reinforcement of the materials.

After successfully completing ***Exploring Space: The High Frontier***, the student will be able to:

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

**COURSE OUTLINE:**

**First Semester**

* **Chapter 1: The History of Astronomy**
	+ Lesson 1 – Prehistoric and Classical Astronomy
* **Chapter 2: The Solar System**
	+ Lesson 1 – The Earth and Moon
	+ Lesson 2 – The Sun and Its Domain
	+ Lesson 3 – The Solar System
* **Chapter 3: Space Exploration**
	+ Lesson 1 – Why Explore Space?
	+ Lesson 2 – Assembling a Space Mission
* **Film Study: *The Martian***

**Second Semester**

* **Chapter 4: Space Programs**
	+ Lesson 2 – US Manned Space Program
* **Chapter 5: Space Stations and Beyond**
	+ Lesson 1 – From Salyut to the International Space Station
	+ Lesson 2 – The Future in Space
	+ Lesson 3 – Space in Your Daily Life
* **Chapter 8: Cyber Security**
	+ Lesson 1 – Foundations of Cyber Security
* **Film Study: *Apollo 13***

*Film study options will include note-takers that follow along with the film. They will be treated as graded assignments. Other film options include Gravity and Hidden Figures.*

*TENTATIVE: Students may also be assigned a research topic for a combination research paper/presentation during this course. Details will be provided prior to assigning this work.*

**REQUIRED MATERIALS:**

* Books will remain in the classroom but can be checked out in exigent circumstances
* Binders and workbooks will remain in the classroom (unless making up work)
* Cadets MUST bring paper and pen or pencil to class daily **except** on physical training (PT) days
* Cadets MUST wear the Air Force uniform once a week & PT uniform on assigned **Fridays**
* Objectives, Do Now and key vocabulary will be posted every day; make sure you read them
* It is the cadet’s responsibility to ensure missed assignments and tests/quizzes must be made up. You must make up assignments (to include missed uniforms) w/in the same grading quarter (exigent circumstances may supersede)
* Information on uniform wear/requirements, PT uniform requirements and grading are in the Cadet Handbook found in your academic binders.

**Classroom EXPECTATIONS/POLICIES:**

* Stand next to your assigned seat and be ready to work when the start bell finishes ringing
* Have your laptop, paper, pencils/pens, books and all needed supplies every day. Ensure your phones are put away or placed in the cell phone storage area located in the front of the classroom
* Keep hands, feet, books, and objects to yourself
* No profanity, rude gestures, teasing, bullying, or put downs
* Each cadet will sign and strictly adhere to the Cadet Contract (attached). Violations (tardy, fighting, profanity, etc., will be dealt with IAW SLPS policy
* Cadets will participate in classroom discussion and physical fitness training
* AFJROTC is in strict compliance with the SLPS Code of Conduct. Infractions/violations are dealt with IAW SLPS District policies. Follow directions of the Code of Conduct and all school adults unless the request is illegal, immoral, or unsafe
* I will be available for parent/teacher conferences during each scheduled session. If your parent/guardian wishes to speak/meet with me about your progress or concerns, please have them participate in those sessions

**COURSE GRADING POLICY/SCALE FOR AFJROTC:**

* ***Aerospace Science*– 40%** of overall AFJROTC grade **(Assignments will vary in value)**
	+ Each week you will receive at least **one** grade from me (participation, Do Now, etc.). Projects, quizzes and tests will be administered throughout the course to ensure comprehension of required material. Assignments must be submitted/completed on time (via TEAMS) in order to earn full credit. Assignments turned in late (without prior coordination) will be subject to a grading penalty at a rate of 50% per week delinquent. Mid-term assessments will take place near the semester break and Final Assessments will occur during Finals Week
	+ ***Physical Fitness Training – 20*%** of overall AFJROTC grade(Uniform wear: 50% of the PT grade; Participation/Conduct 50% of the PT grade). Dressing out without participation will result in a 0. Note: PT is typically held on Mondays.

***\* The remainder of your course grade is comprised of Leadership Studies: LE200 Communication, Awareness and Leadership (40% of your overall grade) and is explained in Coach Brooks’ LE200 syllabus.***

**Grading Policy:** Students will follow the grading scale issued by the district, which is as follows:

**Grade** **Grading Scale**

A 100 – 90

B 89 – 80

C 79 – 70

D 69 – 60

F 59 and below

Parents may have internet access to their student’s grades and assignments, upon Administrative approval at <https://sis.slps.org/SLPS/Default.aspx>

**ACADEMIC INTEGRITY/ PLAGIARISM:**

*All students are expected to act with civility, personal integrity, respect other students’ dignity, rights and property; and help create and maintain an environment in which all can succeed through the fruits of their own efforts. An environment of academic integrity is requisite to respect for self and others and a civil community.*

*Academic integrity includes a commitment to not engage in or tolerate acts of falsification, misrepresentation or deception. Such acts of dishonesty include cheating or copying, plagiarizing, submitting another persons’ work as one’s own, using Internet sources without citation, taking or having another student take your exam, tampering with the work of another student, facilitating other students’ acts of academic dishonesty, etc.*

*Sanctions for breaches in academic integrity may range, depending on the severity of the offense from an “F” grade on an assignment or test to an “F” in the course. Severe cases and/or repeat offenses of academic dishonesty may also result in more severe disciplinary sanctions up to and including suspension or expulsion.*

***NOTE****: This syllabus is subject to change based on schedule conflicts, unforeseen events and/or special guests.*

***Current version of Gateway AFJROTC Cadet Contract attached***



**Air Force JROTC**

**MO-851 Gateway STEM High School**

**2024 – 2025 Cadet/Guardian Contract**

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 **Print Cadet LAST Name (legibly please) FIRST Name Middle Initial (if applicable)**

1. **ENROLLMENT:** Being a member of AFJROTC is a privilege, not a right. Cadets will be removed from the program if they are not meeting the standards as outlined in the July 2019 Air Force agreement signed by the SLPS Superintendent and Air Force JROTC. Curriculum consists of 40% Aerospace Science, 40% Leadership/Life Skills (uniform wear, leadership, citizenship, and drill), and 20% Physical Education. **Wear of the AFJROTC uniform is required as directed by the SASI – which will be explained during Orientation. AS1 and AS2 cadets will have the blue uniform. AS3 and AS4 cadets will have the blue and OCP/ABU options.**

2. **OBLIGATIONS AND CONSIDERATIONS:** Participation in AFJROTC does **not** commit or obligate any student to military service, nor does it guarantee special consideration if a student chooses to enter military service. However, a cadet who successfully completes the specified number of years of AFJROTC based on the rules for that branch of service, may qualify for advanced rank upon enlistment in the military. In addition, cadets can apply for college credit based upon completion of courses in AFJROTC.

3. **APPLICATION:** I, the above-named cadet, hereby apply for enrollment in the Gateway STEM HS Air Force JROTC Program.

4. **AGREEMENT:** In order to maintain high cadet standards of discipline, courtesy, personal conduct, appearance, and fitness required by the Air Force and the AFJROTC program, I understand and agree to the following:

A. **MINIMUM EXPECTATIONS:** I will abide by the MINIMUM STANDARDS listed below. **Failure to do so can result in removal from AFJROTC** **program**.

(1) I will maintain proper personal hair/grooming standards while enrolled in AFJROTC as instructed (specific requirements below).

(2) I will contact the instructor prior to doing anything to my appearance that might affect wear of the AFJROTC uniform.

(3) I will properly wear the AFJROTC uniform as instructed and wear it the entire school day unless otherwise directed. **Failure to wear the uniform as directed (or failure to wear it properly) may result in an overall grade of “F” for that quarter.**

(4) I will dry-clean my uniform pants and Service Coat on a regular basis and maintain it as necessary. I will launder my light blue shirts after each wear as necessary. If I damage my uniform by improperly cleaning it, I will be responsible for the damages.

(5) I will wear the issued Physical Training Gear (shorts or sweatpants/shirt or sweatshirt) with athletic shoes and participate in the PT activities. These two areas will determine my weekly PT grade (50% - wearing the PT Uniform, 50% - for participation).

(6) I will put full effort into learning individual and group drill movements per *Air Force Manual 36-2203, Drill and Ceremonies*.

(7) I will participate in team activities and field trips to the best of my ability.

(8) I will NOT be involved in any inappropriate or illegal behavior as defined in the District Code of Conduct.

(9) I will NOT wear any visible facial piercings (Other than earrings, authorized for **female cadets only**).

B. **MISSED UNIFORM INSPECTIONS:** If absent on uniform day, I will make up the grade the first day back to school. If I simply fail to wear the AFJROTC uniform as directed (or fail to wear it as directed after an absence), my grade will result in a zero. A makeup only counts if I wear the uniform ALL day and get inspected by my instructor or their designated cadet.

C. **COURTESY:** I understand this is a cadet-run program and I am expected to follow orders of senior ranking cadets. I will show courtesy and respect to administrators, teachers, coaches, and other adults with whom I come into contact.

D. **UNIFORM ISSUE AND RETURN:** The uniform will be issued to me clean and pressed. If I am removed from or quit AFJROTC, I will return the AFJROTC uniforms immediately, to include every item I was issued. Following each year that I complete AFJROTC, I will return all uniform items (pants, shirt, jacket, coat, hat, tie/tab, PT gear, etc.) unless otherwise instructed. Failure to return uniforms will result in school fine. PT gear must also be washed and dried before turning it in. ***NOTE: You will NOT be given your uniform until grooming standards are in compliance with paragraphs G & H below. ABU/OCP uniforms may be washed in a wash machine.***

E. **JROTC FEE:** I understand every cadet will pay the required AFJROTC **activity fee of $25 within the first 4-weeks of enrollment** in AFJROTC. This fee goes towards mass unit activities such as field day(s) meals, to reduce the cost our annual military (formal) ball, and for grooming items, body sprays, and miscellaneous items the cadets may need throughout the school year. Financial hardships must be brought to the attention of an instructor by a parent/guardian. **Note: This fee is non-refundable. Additionally, if you did not pay to get your uniform cleaned last year, you will also owe $25 for that service.**

F. **CADET GUIDE:** I will read, understand, and **comply** with the requirements and information provided in the 2024 version of the AFJROTC Cadet Guide.

G. **MALE Required Hair Style and Other Uniform Restrictions for AFJROTC:** The below list applies when the cadet is wearing the AFJROTC Uniform:

 Hair: Will not exceed 2 inches in bulk on the top of the head regardless of the length. Bulk is the distance that the hair projects from the scalp when groomed (as opposed to length of the hair). Should not be longer than ¼” at the termination point around neck/ears.

 Must be able to wear the Air Force hat with no long hair sticking out the front or sides of the cap.

 Your hair must have a tapered appearance on both sides and back. A tapered appearance means that, when viewed

from any angle, the outline of the hair on the side and back will generally match the shape of the skull, curving

inward to the end point.

 Hair must be a natural color (no faddish hair styles/colors), and hair must be all one color. No designs may be cut into the hair, no Mohawks, no cornrows, no mullets, no dreadlocks, and no “fo-hawks”. No “twists/fusing” or braids.

 Shaving: All boys must be cleanly shaven in uniform. May wear a mustache cut at the corners of the mouth, and no hair hanging over the lip.

 Sideburns: You may have sideburns if they are neatly trimmed and tapered in the same manner as your haircut.

Sideburns must be straight and of even width (not flared or cut to a point) and end in a clean-shaven horizontal line.

They may not extend below the lowest part of the outer ear opening.

 Jewelry: No more than 3 rings on your 8 fingers (no thumb rings), and **no earrings on boys**. No visible necklaces. Aconservative bracelet up to ½ inch wide is allowed. No rubber cause bracelets.

H. **FEMALE Required Hair Style and Other Uniform Restrictions for JROTC**: The below items apply when the student is wearing the AFJROTC Uniform:

 Hair: Will not exceed 4.0 inches in bulk from the scalp. Bulk is the distance hair projects from the scalp when groomed (as opposed to length of the hair). Do not cut into faddish style or shave a portion of the hair. Girls have no minimum hair length. Hair must allow proper wear of the uniform flight cap. Female cadets may wear up to two braids or a single ponytail with bulk not exceeding the width of the head and length not extending below a horizontal line running between the top of each sleeve inseam at the under arm through the shoulder blades. May not be multiple colors or any single color that is not natural (born with). No designs cut into eyebrows/hair.

 Hair Bun: When hair is in a bun, the bun must be a single bun; no wider than the width of the head and all loose ends secured. Bun will be centered on the head between the collar and the back of the ears. Girls must be able to wear the Air Force Hat properly. Bun may be no more than 4.0” in diameter.

 Hair accessories: If worn, hair accessories (e.g., fabric scrunches, hairpins, combs, clips, headbands, elastic bands, barrettes, etc.) must match hair color. Black hair accessories are authorized regardless of hair color. Hair must still comply with bulk and appearance standards. Headgear must fit properly. Headbands or fabric scrunchies will not exceed one-inch in width. Ornaments are not authorized (i.e., ribbons, beads, jeweled pins).

 Makeup/Nails: Makeup should be conservative and professional looking. If painting nails, use one color and must be a conservative color or French manicure. Black, pink, white, gold, etc. are not allowed.

 Earrings: Only ONE earring in each ear, lowest part of ear lobe; can only be round or square white diamond, silver, gold, or white pearl stud. Unauthorized jewelry cannot be covered with Band-Aids/make-up. Small plastic nose ring covers are now permitted.

 Jewelry: No more than 3 rings on your 8 fingers (no thumb rings). No visible necklaces. A conservative bracelet up to ½ inch wide is allowed. No rubber cause bracelets.

**5. CADET AGREEMENT**: I understand all the instructions above and agree to follow them as long as I am enrolled in AFJROTC.

**STUDENT SIGNATURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE\_\_\_\_\_\_\_\_\_\_\_\_\_**\_\_\_\_\_\_\_\_\_\_\_

**6.** **PARENT** **AGREEMENT**:I fully understand what is expected of my cadet to be part of the Gateway STEM H.S. AFJROTC program. I understand that if my cadet fails to maintain grooming standards and/or wear the AFJROTC uniform or PT Uniform on required occasions, it will result in removal from the program. **If my student is removed from this course for any reason or drops this class, I understand that all uniform items, including PT T-Shirt, shorts, and sweatshirts will be returned to AFJROTC**

I agree to the conditions set forth in this contract.I hereby give my permission for my student to enroll in the AFJROTC program and will encourage their active participation. My student has read this contract and understands the requirements of the AFJROTC program.

**NAME OF PARENT/GUARDIAN: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**PARENT PHONE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**PARENT/GUARDIAN SIGNATURE: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**