

AIR FORCE ACADEMY TOUR REQUEST



Name of person requesting tour: _____ Email: _____
Cell phone #: _____ School / Organization: _____

Visit date & desired hours for tour: _____
Number of students: _____ Number of Chaperones (1-10 ratio required): _____
Transportation to USAFA
(Bus, Van) POVs cannot come into the Cadet Area.
Grade level: _____
Purpose of visit / Academic standard supported by tour: _____

TOUR OPTIONS

**We will try to accommodate your choices. Please prioritize choices with 1,2,3,4, etc.
(See following pages for detailed descriptions of tours)**

- ✓ Aeronautics Lab _____
- ✓ Air Force CyberWorx _____
- ✓ CASTLE Applied Mechanics Lab _____
- ✓ Astronautics Lab (Space Systems Research Center) _____
- ✓ Chemistry Magic Show _____
- ✓ Chemistry Lab Hands-on Activity _____
- ✓ Chemistry Research Center Labs _____
- ✓ Computer Science NAO Robot Demonstration _____
- ✓ Human Performance Lab _____
- ✓ Life Sciences Research Center _____
- ✓ Laser Optics Research Center _____
- ✓ USAFA Observatory Sunset Tour _____
- ✓ Other _____

OTHER INFORMATION

Are all attendees US citizens? _____
Health Concerns: _____

****It is an expectation that all adults attending the tour will be active participants and assist with behavior management and location of students.**

****Comfortable closed-toe shoes are required. The tour requires much walking and climbing stairs.**

AFA STEM Outreach Tour Offerings

Aeronautics Labs

POC: Mr. Chris Seaver

christopher.seaver@usafa.edu

Location: Aeronautics Labs

Description of Tour: This lab offers a 30 minute visual tour of four different wind tunnels and an explanation of the cadet capstone design project. A 45 minute-1 hour tour allows attendees to view 7 wind tunnels, a variety of jet engines, the machine shop, cadet workshop and design classroom. This tour does not offer hands-on activities and the machines are not operational during tours. It is best suited for middle school, high school and adult audiences.

Tour Size: Large groups are broken down to groups of 15-20.

Best Time of Day for Tour: Between 9:00-11:00AM

Best Months: Any months other than April and May

Attendee Requirements: None

Supports Colorado Academic Standards for: physics, math, engineering, 21st Century Skills

Additional Information: The wind tunnels include: water, subsonic, supersonic, and a hypersonic Ludwig Tube. They are used to test various aircraft and UAV parts. Display engines were developed by Pratt Whitney, General Electric, or Rolls Royce and include the F-100 used in F-15 & 16 fighter jets, F-109, J-85 for T-38 aircraft, pulse detonation, and hybrid.

Air Force CyberWorx

POC: Maj Brandon Greene

brandon.greene@usafa.edu

Location: 2N300

Description of Tour: After viewing a model city called “Cyber-city,” participants gain understanding of a human-centered methods approach to design thinking as it pertains to Air Force challenges in cyber.

Tour Size: 15-20

Best Time of Day for Tour: Between 1:00-3:00PM

Best Months: All

Attendee Requirements: Teachers will help facilitate any activities

Supports Colorado Academic Standards for: design thinking, 21st Century Skills

Additional Information: Best suited for Middle School, High School and adults

Applied Mechanics Lab (CASTLE Research Center & Center for Aircraft Structural Life)

POC: TSgt Rocky Perez

rocky.perez@usafa.edu

Location: 2L8

Description of Tour: This lab provides a visual tour of how Newtonian physics are applied to the design, fabrication, and facility of aircraft. This lab also conducts corrosion and properties of metal research. Distinguished cadet capstone projects are displayed. Shops included in the tour are wood, metal, fabrication, and automotive.

Tour Size: 25

Best Time of Day for Tour: Any

Best Months: Any

Attendee Requirements: Notification if non US citizens are visiting

Supports Colorado Academic Standards for: physics, math, 21st Century Skills

Additional Information: Visitors may take photos.

[Chemistry Magic Shows / Hands-on Polymer Activities](#)

POC: Maj Tracy Clinton tracy.clinton@usafa.edu

Location: 2N228

Description of Tour: This tour treats elementary attendees to a 30 minute Chemistry Magic Show and a 30 minute hands-on activity.

Tour Size: up to 50

Age Group: 2nd grade - adult

Best Time of Day for Tour: Afternoons

Best Months: Any (June, July & August are least busy)

Attendee Requirements: Closed-toe shoes

Supports Colorado Academic Standards for: Chemistry

Additional Information: photos are permitted

[Chemistry Research Lab Tour](#)

POC: Dr. Scott Iacono scott.iacono@usafa.edu

Location: 2N228

Description of Tour: Middle School/High School students and adults receive a 30 minute tour of the Chemistry Labs. The research team focuses on preparing functionalized polymer and hybrid polymer composites directed toward developing next-generation, high performance materials to meet operational Air Force and Department of Defense needs.

Tour Size: up to 50

Age Group: Middle School - Adult

Best Time of Day for Tour: Afternoons

Best Months: Any (June, July & August are least busy)

Attendee Requirements: Closed-toe shoes

Supports Colorado Academic Standards for: Chemistry

Additional Information: photos are permitted

[Space Systems Research Center \(SSRC\)](#)

POC: Maj Daniel Showalter daniel.showalter@usafa.edu

Location: CETF 1M125

Description of Tour: This tour allows participants to see FalconSAT satellites and hear a brief history of the program. Other sections of the tour include: the FalconSAT simulator room, the machine shop where models and structures are created, and the clean room where spacecraft are assembled. A hybrid rocket demo is possible if time and personnel permits.

Tour Size: 40 max broken into groups of 20

Best Time of Day for Tour: 8:00AM-3:00PM

Age Group: Middle School-Adult

Best Months: Any month

Attendee Requirements: A list of all attendees is required. All attendees must be US citizens. No photography

Supports Colorado Academic Standards for: physics, electricity, chemistry, engineering, 21st Century Skills

Additional Information: This tour might be paired with physics department to see payloads.

Computer Science

POC: Dr. Steven Hadfield

steven.hadfield@usafa.edu

Location: Varies

Description: Faculty and cadets demonstrate the NAO and Pepper robots. The robots are programmed to exercise, dance, tell stories, play games and control other robots. Audience members are chosen to interact with the robots.

Time: 20 minute demos

Tour Size: 40 max

Best Time of Day for Tour: Any

Supports Colorado Academic Standards for: computer science-programming, number recognition, math drills, listening comprehension, foreign language

Attendee Requirements: Follow directions when interacting with the robots

Additional Information: Cadets from this department are available for evening events

Computer Science

POC: Mr. Dell Christman

delbert.christman@usafa.edu

Location: 2E2

Description: This visual tour offers a glimpse into the workings of a human-sized, man-machine interfaced BAXTER robot, a robot maze used in cadet competitions, the MARVEL lab where cadets build R2D2 type robots and a virtual reality zone.

Age Group: HS - Adults

Best Time of Day for Tour: Any

Supports Colorado Academic Standards for: Computer science-programming, 21st Century Skills

Attendee Requirements: None

Additional Information: Cadets from this department are available for evening events.

Physics

POC: Mr. Marty Johnson

martin.johnson@usafa.edu

Location: Physics Labs

Description: This tour offers a PowerPoint presentation of the 5 physic research centers: Astronomical Research Group and Observatory (ARGO), Laser Optics Research Center (LORC), Center for Space Situational Awareness (CSSAR), Space Physics and Atmospheric Research Center (SPARC), and the Center for Physics Education Research (CPER).

Tour Size: 20 max

Age Group: High School - Adults

Best Time of Day for Tour: Any

Supports Colorado Academic Standards for: Physics, space science

Attendee Requirements: None

Additional Information: CPER uses a flipped classroom approach to learning. CSSAR uses Falcon telescopes, mobile telescopes, and satellite glint spectral analysis. LORC performs research in laser development, laser applications and large optics for space. ARGO conducts near-Earth and deep space research. SPARC specializes in the development of miniature payloads that fly on experimental aircraft to make observations of the ionosphere.

USAFA Observatory

POC: Dr. Devin Della-Rose devin.della-rose@usafa.edu

Location: Observatory

Description: Once a month, Dr. Della-Rose and cadets from the Astronomy Club host groups for 1 to 2 hours after the sun sets. Participants use telescopes to observe constellations.

Tour Size: 10-30

Age Group: Grade 4 - Adults

Best Time of Day for Tour: At sunset once a month

Supports Colorado Academic Standards for: Earth & space sciences

Attendee Requirements: None

Additional Information: A goal within the next three years is to refurbish the planetarium and include it on the star gazing tour. Attendees would go to the planetarium to learn about the night sky and then move to the observatory for viewing.

Human Performance Lab

POC: Ms. Dyana Bullinger dyana.bullinger@usafa.edu

Location: Cadet Gymnasium

Description: The Human Performance Laboratory (HPL) applies sports science principles to improve Academy athletic teams and individual cadet performance. It also provides subject matter expertise on the Air Force Fitness program and human performance offering scientific data through research and exercise physiology principles. The AFA Human Performance Lab is one of the top exercise physiology centers in the United States.

Tour Size: 40 max

Age Group: Middle School - Adults

Best Time of Day for Tour: Mornings for large groups / afternoons for less than 20

Supports Colorado Academic Standards for: Life science

Attendee Requirements: Photos are allowed except photos of the athletes training

Additional Information: The HPL works with approximately 1,000 cadets per year. The lab features equipment for aerobic and anaerobic testing. There is a sea-level testing tent and a large vision training area. The HPL is supporting a DoD NCAA concussion study.