

Air Force Junior Reserve Officers Training Corps (AFJROTC)

28.01 Air Force JROTC Courses

The performance standards in this course are based on the performance standards identified in the curriculum for Air Force JROTC. Successful completion of at least three units of credit in the Air Force JROTC program will qualify the student for advance placement in a college ROTC program or accelerated promotion in the military service.

Each course equals 1 Carnegie unit. All of the courses listed below include advance instruction with an emphasis on the higher levels of learning. The application level activities must be emphasized because these activities are designed to ensure that the students can use the information in new and different situations. Students will have an opportunity to apply the ideas, concepts, principles, and theories they learn to practical exercises.

Course Number	Course Title
28.01100	Aerospace Science: Frontiers of Aviation History
28.01200	Leadership Education I: Introduction to Air Force Junior ROTC and Drill and Ceremonies
28.01300	Aerospace Science: The Science of Flight
28.01400	Leadership Education II: Intercommunication Skills and Unlocking Your Potential (UYP)
28.01500	Aerospace Science: The Exploration of Space
28.01600	Leadership Education III: Life Skills and National Endowment for Financial Education (NEFE)
28.01700	Aerospace Science: Geography and Principles of Management (Optional 4 th year)
28.01800	Aerospace Science: Policy and Organization and Principles of Management (Optional 4 th year)
28.01900	Aerospace Science: Honors Ground School and Principles of Management (Optional 4 th year)

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The following individuals provided valuable service in the development of Georgia's competency-based curriculum standards.

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CORE EMPLOYABILITY SKILLS

BASIC SKILLS

1. Locates, understands, and interprets written information in a variety of formats, including such documents as manuals, graphs, reports, and schedules.
2. Communicates thoughts, ideas, information, and messages in writing and technologically, and creates documents such as letters, directions, manuals, reports, graphs, and flowcharts.
3. Performs and applies numerical concepts and calculations, and solves problems by choosing appropriately from a variety of mathematical techniques using mental, manual, and technological methods.
4. Receives, interprets, and responds to verbal and nonverbal messages in a manner appropriate to a given situation.
5. Organizes ideas and communicates orally in a clear, concise, and courteous manner.

THINKING SKILLS

6. Specifies goals, objectives, constraints, and supporting factors.
7. Identifies problems, alternative solutions, consequences of alternative solutions, and uses appropriate techniques to resolve given problems.
8. Implements a plan of action making modifications as needed to achieve stated objectives.
9. Uses effective learning techniques to acquire and apply new knowledge and skills.

PERSONAL QUALITIES

10. Assesses self accurately, sets personal goals, monitors progress, and exhibits self-control.
11. Chooses ethical courses of action.
12. Takes initiative to accomplish tasks in a timely manner.
13. Exerts a high level of effort and perseveres towards goal attainment.
14. Demonstrates adaptability, dependability, and responsibility and such social behaviors as tolerance, honesty, empathy, and courtesy.

INTERPERSONAL SKILLS

15. Participates and interacts as a team member and leader.
16. Shares knowledge and skills with others.
17. Performs effectively in various environments with people of different ages, genders, cultures, socio-economic backgrounds, attitudes, and abilities.
17. Performs effectively in various environments with people of different ages, genders, cultures, socio-economic backgrounds, attitudes, and abilities.

18. Works to satisfy customer/client expectations.
19. Uses strategies appropriate to a given situation to prevent and resolve conflicts.

RESOURCES

20. Selects goal-relevant activities, prioritizes them, manages time, and prepares and follows schedules.
21. Uses or prepares budgets, makes projections, keeps records, and makes adjustments to meet objectives.
22. Acquires, stores, allocates, and uses materials and space efficiently.

TECHNOLOGY

23. Prevents, identifies, or solves problems with technical or electronic equipment.
24. Operates and maintains technical equipment and the work environment safely following applicable industry regulations and guidelines.
25. Utilizes a variety of technologies.

BUSINESS ASPECTS

26. Demonstrates understanding of basic economic concepts and how they are applied in business functions and activities.
27. Identifies forms of business ownership.
28. Demonstrates understanding of the scope of a business, its place within an industry, and the interrelationship of its parts.
29. Demonstrates understanding of the individual's role, responsibilities, and relationships in the organizational structure of a business.
30. Maintains safety, health, and environmental standards, and addresses ergonomic concerns.

CAREER DEVELOPMENT

31. Makes potential career decisions based upon interests, abilities, and values and formulates appropriate plans to reach career goals.
32. Demonstrates understanding of the relationship between educational achievement and career planning and how career choices impact family patterns and lifestyle.
33. Demonstrates effective skills for seeking and securing employment.
34. Demonstrates understanding of education and career development as a lifelong learning process which requires preparation for change.

28.01100 – Aerospace Science: Frontiers of Aviation History

COURSE DESCRIPTION:

Aerospace Science: Frontiers of Aviation History is a course that focuses on the frontiers of aviation history. The course is designed to allow students to apply the material. Thus, it is important that the application level activities be emphasized. The course is designed to enable the student to sort through the key aspects of the historical development of flight and the role of the military in history. Students develop and illustrate ideas about attempts to fly in ancient civilizations throughout the world, the first record of scientific study, first flights, and the impact aviation had on the conduct of war. The course enables the students to distinguish the United States' position at wartime and how wars brought about the development of new weapons, new methods of warfare, new aircraft, more pilots, and the need for pilot training. The course is designed for students to examine the historical development of flight and the role of the military in history. Students explore the U.S. policy of containing the spread of communism and the role of air power during the Korean War, the Cuban Missile Crisis, and the Vietnam War. The students review the peaceful roles and missions in support of national objectives that the military is involved in, and the value of air power during the Persian Gulf War.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

Origins of Flight

- 35 Describe how early civilizations regarded flight.
- 36 Identify the methods of ancient attempts to fly.
- 37 Identify the early contributions to flight.

Early Growth of the United States

- 38 Describe events of the American Revolutionary War.
- 39 Identify progress in flight.
- 40 Identify events that occurred between wars.

The Formative Years

- 41 Identify the result of the Monroe Doctrine.
- 42 Outline the issues and events that led to the Mexican War, the Civil War, and Spanish-American War of 1898.
- 43 Distinguish the military forces used in the Mexican War from those used in the Civil War.

World Power

- 44 Describe the developments after the Spanish American War.
- 45 Describe progress in flight by male and female aviators in America.
- 46 Identify the factors and approaches that helped the Wright Brothers achieve success in their heavier-than-air flight.
- 47 Describe the European developments in aviation.

World War I

- 48 Describe the events leading to the United States' entry into World War I.
- 49 State the political objectives of the two primary nations involved in World War I.
- 50 Identify the achievements of Raoul Lufbery, Eugene Bullard, Eddie Rickenbacker, and Frank Luke during World War I.
- 51 Describe the importance of military technology as it related to land forces, aviation, and sea warfare during World War I.
- 52 Describe the United States' military aviation involvement during World War I.
- 53 Differentiate between the development of bombers and fighters by Europeans in World War I.
- 54 Identify the Ace of Aces of Germany, France, Britain, and the United States.
- 55 Describe the importance of airpower in World War I in terms of the most important lesson to be learned from the war.

The Golden Age of Aviation

- 56 Outline the first attempt to fly across the Atlantic by the United States Navy.
- 57 Identify the famous barnstormers and their contributions to flight.
- 58 Describe aviation accomplishments by Charles Lindbergh, Amelia Earhart, Charles "Chief" Anderson, William J. Powell, and Bessie Coleman.
- 59 Identify the significance of the National Air Races and their contributions to aviation.
- 60 Identify the contributions of NACA and Daniel Guggenheim to aeronautics.

Army Aviation During the Interwar Period

- 61 Describe General Billy Mitchell's efforts to gain support for Army aviators.
- 62 Identify the accomplishments in aviation of Russell Maughan and Edwin Nickles.
- 63 Describe how the Army Air Force prepared for World War II.
- 64 Explain the objectives of the Civilian Pilot Training Program.
- 65 Identify the effect civilian schools training military pilots had on aviation.

World War II

- 66 Describe the three main causes of the war.
- 67 Identify the major Axis and Allied powers that fought in the war.
- 68 Identify the events that led to the official beginning of World War II in Europe.
- 69 Identify the most serious mistake Hitler made in not invading England immediately after the fall of France.
- 70 Describe how the British military solved the problem of ferrying aircraft during the war.
- 71 Describe the strategic plans made by the Allies in preparation for the United States' possible entry into World War II.
- 72 State the Navy's primary mission in the Atlantic Ocean.
- 73 Describe the greatest technological achievement of World War II.

- 74 Identify the basic Allied strategy for winning the war in Europe and the Mediterranean and how the Army and Air Forces each planned to accomplish the strategy.
- 75 Describe the strategic bombing of Germany by the United States and Britain.
- 76 Identify the three-part concept of tactical air warfare that resulted from the U. S. tactical operations in Europe and the Mediterranean.
- 77 Describe the island-hopping campaign in the Pacific during World War II.
- 78 Describe the bombing tactic used by the United States in the bombing of Japan in 1944.
- 79 List the two roles served by the island of Iwo Jima.
- 80 State the outcome of the war in Europe and the Pacific.
- 81 Explain the final lesson that World War II taught the world.

Post-World War II Years

- 82 Identify the two major political forces at the end of World War II.
- 83 Identify the factors, which influenced the U.S. foreign policy following World War II.
- 84 Explain the status of the U.S. military forces between 1945 and the Korean War.
- 85 Explain the reason U.S. political leaders cut the size of the military forces after the end of the fighting in the Pacific.
- 86 Describe the formation, mission, and capability of the U.S. Air Force in 1947.
- 87 State the cause and outcome of the Berlin Airlift.
- 88 Identify the participants of the Berlin Airlift.
- 89 State the role of air power during the Berlin blockade.
- 90 Identify the lessons learned from the Berlin Airlift.
- 91 Give examples of the aviation research and developments made after World War II.
- 92 Give examples of lessons learned during the Korean War.
- 93 State what happened to General MacArthur's because of his military positions during the Korean War.

Korean War

- 94 Describe the events in Asia preceding the Korean War.
- 95 Describe the United States involvement in the Korean War.
- 96 Name the important technological developments during and immediately following the Korean War.
- 97 Explain the importance of air power in the Korean War.
- 98 Explain General Douglas MacArthur's positions and role during the Korean War.
- 99 Describe the political and military developments made after the Korean War.
- 100 Describe steps taken to prevent future conflicts in various wars.
- 101 Describe the conditions of Korea today.

Challenges in Cuba and Vietnam

- 102 Identify the causes of the Cuban missile crisis.
- 103 Identify the lessons learned during the crisis in Cuba.
- 104 Describe how U.S. forces were committed to fighting in Vietnam.

- 105 Describe the effects of the Geneva Accords of 1954.
- 106 Identify the bombing operations from 1965 to 1972.
- 107 Identify the terms of the peace treaty.
- 108 Describe the U.S. economic consequences after the Vietnam War.
- 109 Identify the technological advancements produced by the war.
- 110 Identify the lessons learned in the Vietnam War.

The Post Vietnam Era

- 111 Give examples of the challenges the military faced at the end of the Vietnam War.
- 112 Describe the social, political and economic conditions of the United States in the 1970s.
- 113 Discuss the problems in the United States during the 1960s and 1970s.
- 114 Describe the international problems during the 1970s.
- 115 Describe two new projects researched and developed after the Vietnam War.
- 116 Describe the steps the United States took to modernize its weapons and support systems.
- 117 Explain why veterans of the Vietnam Wars were treated different from veterans in other wars.

Humanitarian Airlifts

- 118 Explain humanitarian airlift.
- 119 Describe some early humanitarian airlifts.
- 120 Give examples of USAF airlifts between 1947-1993.
- 121 Identify the USAF domestic relief airlifts.
- 122 Define natural disasters.
- 123 List several natural disasters.
- 124 Describe Operation Provide Comfort, Provide Hope, Provide Promise, Provide Relief, and Sea Angel.
- 125 List the Air Force commands that worked together during some of the USAF humanitarian airlifts.
- 126 Discuss reasons that humanitarian airlifts are conducted.

Missions in Support of National Objectives

- 127 Explain how national objectives influence policy.
- 128 Identify the forces that contributed to the Iranian-American conflict.
- 129 Describe why the Iranian hostage rescue attempt failed.
- 130 Describe relations between United States and Panama over the years.
- 131 Describe the events leading to the crises in Grenada, Libya, and Panama.
- 132 Describe how the United States responded to Operations Urgent Fury, El Dorado Canyon/Libyan Strike, and Just Cause.
- 133 Justify conducting missions in support of national objectives.
- 134 Describe the lessons learned from Operations Urgent Fury, El Dorado Canyon/Libyan Strike, and Just Cause.

Desert Shield/Desert Storm

- 135 Describe the issues and events leading up to the Persian Gulf War.
- 136 Summarize the deployment of forces to the Persian Gulf.
- 137 State the military threat posed by the Iraqis.
- 138 Describe how U.S. and allied coalition forces came together during Desert Shield/Desert Storm.
- 139 State the role technology played during Desert Shield/Desert Storm.
- 140 Describe the opening attack and the main attack made by the United States against Iraq.
- 141 Describe how the United States neutralized Iraqi air power.
- 142 Describe the last 100 hours of the Persian Gulf War.
- 143 Identify the results of the Gulf War as they apply to the military objectives of the air campaign.

Application Level

- 144 Interpret the following statement: A national objective can seldom be attained without the national power to attain it.
- 145 Briefly describe the first international air meet in terms of the location, participants, and occurrences.
- 146 Report on the tragic failure of the Hindenburg on May 6, 1937.
- 147 Prepare a written report on U. S. National Guard and Reserve forces. What part do they play in today's defense plan? How are these forces used?
- 148 Compare the Korean War Vietnam conflict. Make a list of areas that show how these conflicts were similar and another list that identifies their differences.
- 149 Write a research paper on the role space technology played in the Gulf War.

28.01200 – Leadership Education I: Introduction to Air Force Junior ROTC and Drill and Ceremonies

COURSE DESCRIPTION:

In Leadership Education, the students identify the history, mission, purpose, goals, objectives, and importance of the Air Force Junior Reserve Officer Training Corps (AFJROTC). They develop an understanding of the importance of attitude, discipline, respect, and practice values and ethics that are so important for self-growth. The students demonstrate the importance of individual self-control and how an effective stress management program improves the quality of life. The Leadership Education portion of the course explains why courtesies are rendered to the United States flag and the National Anthem. The students model being good, democratic citizens and study different forms of governments. The students practice wellness techniques and encourage others to live healthy lifestyles. The students use first aid techniques to minimize injury and harm to themselves and others. The importance of staying well permeates their studies. Students begin to conduct basic individual drill and ceremonies demonstrations, and must adhere to establish grooming standards by exemplifying proper wearing of the United States Air Force uniform.

In Drill and Ceremonies students cover the basic aspects of drill. Students learn the importance, purpose, and meaning of military drill terms, the significance of the United States Flag, positions and movements required of each individual in forming elements, flights, and squadrons and the commands to execute those positions and movements. Students also learn about the drill of the flight and squadron.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

Introduction to Air Force Junior ROTC

- 35 State history of Junior ROTC.
- 36 Define the mission, goals, and objectives of AFJROTC.
- 37 Outline the chain of command and organization of the cadet corps

Military Traditions

- 38 Wear the AFJROTC uniform.
- 39 Demonstrate personal courtesies used when associating with senior officers.
- 40 Identify the correct military titles and insignia.
- 41 Identify AFJROTC insignia of grade.
- 42 State the purpose of a dining-in and dining-out.
- 43 Perform proper customs and courtesies.
- 44 Explain how, when, and who to render a salute.
- 45 Demonstrate how to properly render the hand salute.
- 46 Attend military ball, adhering to military traditions.

Personal Behavior

- 47 Define attitude, discipline, respect, and ethics.
- 48 Exhibit a positive attitude.
- 49 Outline the influences on professional ethics.
- 50 State the importance of discipline and Air Force Junior ROTC.
- 51 Explain your value system.
- 52 Model at least five of the guidelines that are the basis of human decency and well-being.
- 53 State what makes up a value system.
- 54 Display the United States Air Force core values.
- 55 State why different cultures have different rules of conduct.
- 56 Identify what affects our ethical decision-making.

Personal Responsibility

- 57 Describe the main causes of stress.
- 58 Distinguish the difference between positive stress and negative stress.
- 59 Identify factors associated with young people committing suicide.
- 60 Develop plan to help classmates avoid suicide.
- 61 Demonstrate effective time management.
- 62 Choose behaviors that decrease gang involvement.
- 63 Separate gang behaviors from non-gang behavior.

The Flag of the United States

- 64 State the history of the flag of the United States.
- 65 State when to display the flag of the United States.
- 66 Demonstrate how to display the flag of the United States.
- 67 Show the courtesies rendered to the flag of the United States.
- 68 Describe the courtesies rendered to the National Anthem.
- 69 Recite the Pledge of Allegiance and the American's Creed.

Citizenship

- 70 Explain the need for good citizens.
- 71 Describe the differences in the basic patterns of government.
- 72 Describe the main function of each branch of the United States Government.
- 73 Identify freedoms granted by the first amendment.
- 74 Describe the duties of a democratic citizen.

Keeping Yourself and Others Well

- 75 Define physical fitness and nutrition.
- 76 Explain the importance of physical fitness and weight control.
- 77 Identify key benefits for maintaining a healthy lifestyle.

- 78 Define term drug abuse.
- 79 Explain Air Force policies on alcohol and drug abuse.
- 80 Explain Air Force disciplinary actions for alcohol and drug abusers.
- 81 Describe the long-term effects of drug and alcohol abuse.
- 82 Explain what can be done to stop drug abuse.
- 83 List organizations that provide free help to families with alcohol-related problems.
- 84 State long-term effects of tobacco use on the body.
- 85 Practice good wellness and first aid techniques.
- 86 Develop a wellness plan for yourself.

Helping Others Stay Well

- 87 Describe first aid treatment for common emergencies.
- 88 Practice first aid treatments for minor injuries.
- 89 Describe first aid treatment for burns, scalds, sunburns, bites and stings.
- 90 Describe first aid treatment for injuries resulting from disasters.
- 91 Describe how to transport an injured person.
- 92 List the kind of supplies to be kept in a first aid kit for home and automobile.
- 93 Describe basic cardiopulmonary resuscitation techniques.
- 94 Role-play treatment techniques for a severe accident.

Customs and Courtesies

- 95 Define customs and courtesies.
- 96 Define salute.
- 97 Describe the correct way to properly render the hand salute.
- 98 State when to salute.
- 99 Name the correct personnel to salute.

Flag Honors

- 100 Describe how the flag is honored when you are in uniform in formation, and in uniform but not in formation.
- 101 Describe how the flag is honored if you are indoors and the National Anthem or to the Colors is played.
- 102 Describe how the flag is honored during indoor ceremonies.
- 103 Define reveille and retreat.
- 104 Describe the correct procedure to raise and lower the flag.

Introduction to Drill and Ceremonies

- 105 Define drill and ceremonies.
- 106 List the symbols that represent the leaders of the flight and squadron.
- 107 Define all the basic military drill terms.
- 108 Identify the types of commands used during the basic military drill movements.
- 109 Identify the necessary qualities of the command voice.
- 110 Define cadence.

Drill Positions and Movements

- 111 Demonstrate the position of attention.

- 112 Demonstrate parade rest.
- 113 Demonstrate Right Face, Left Face, About Face, and Half Face movements.
- 114 Execute the commands Fall In and Fall Out.
- 115 Identify the type of commands used during the basic military drill movements.
- 116 Demonstrate the command FORWARD, MARCH.
- 117 Execute the command DOUBLE TIME, MARCH.
- 118 Demonstrate the movement MARK TIME, MARCH.
- 119 Demonstrate the movement HALF STEP, MARCH.
- 120 Execute the command RIGHT AND LEFT STEP MARCH.
- 121 Demonstrate the movement CHANGE STEP, MARCH.
- 122 Execute the command MARCH TO THE REAR.
- 123 Perform flanking movements.

Drill of the Flight

- 124 Explain how a flight is formed into a marching unit.
- 125 Identify the rules for the guide and the guide position.
- 126 List the duties of flight officers and the cadets during drill activities.
- 127 List the duties of the drill instructor.
- 128 Explain the procedures involved in aligning the flight.

Marching Movements

- 129 Demonstrate close march and extend march while halted and marching.
- 130 Perform column movements.
- 131 Demonstrate how to form single and multiple files.
- 132 Demonstrate how to form a column of twos from a column of fours and reform.
- 133 Perform counter march movements.

Drill of the Squadron

- 134 Form as a squadron on the ready line.
- 135 Execute basic drill commands as a squadron.
- 136 Identify the guidon bearer's position.

Application Level Activities

- 137 Participate in a comprehensive physical fitness program.
- 138 Practice advance drill movements and marching.
- 139 Demonstrate effective communications techniques with drill.
- 140 Organize a wellness program for your unit, school, or a specific group.
- 141 Establish a unit advisory group to handle rule infractions.
- 142 Develop programs to ensure that the unit interacts with veterans of the various wars.
- 143 Conduct military ceremonies to include the American flag folding ceremony.

- 144 Organize interactive activities with other JROTC units, school groups, and the community.

28.01300 Aerospace Science: The Science of Flight

COURSE DESCRIPTION:

Aerospace Science: The Science of Flight is a course that focuses on the science of flight. Students explore the aerospace environment and the human requirements of flight. Students identify the basic facts and general principles of the atmosphere and the elements of weather. Learning the weather elements and a general understanding of how all these parts interact to give us the weather is critical to understanding the aerospace environment. After developing an understanding of the environment, how environment affects flight is introduced. The students study the human circulatory system, the effects of acceleration and deceleration, and protective equipment to understand their use in the aerospace environment. The course is designed to introduce the students to the principles of aircraft flight navigation, theory of flight and basic aeronautics. The students determine why the forces of lift, weight, thrust and drag are essential to successful flight. Students practice basic navigation, including map reading, course plotting, and the effects of wind.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

The Atmosphere

- 35 Define a list of terms related to the atmosphere.
- 36 Describe the roles of water and particulate matter.
- 37 Identify the primary causes of atmospheric motion.

Weather Elements

- 38 Identify types of clouds.
- 39 Identify types of air masses and fronts.
- 40 Describe terrain factors that affect weather.
- 41 Describe types of turbulence.
- 42 Identify normal weather patterns.

Weather Forecasting

- 43 Predict weather based upon given weather factors.
- 44 Identify the role of weather satellites in predicting weather.
- 45 Describe the effects of relative wind.
- 46 Describe the communication methods used to provide weather information.
- 47 Forecast weather conditions based upon specific factors.

Aviation Weather

- 48 Explain the weather hazards associated with aviation.
- 49 List the types of severe weather that affect aviation
- 50 Describe arctic and tropic weather characteristics.

Physiology of Flight:

- 51 Identify the layers of the atmosphere and the composition of each.
- 52 Describe the physiological divisions of the flight environment.
- 53 Define the physical laws of gases according to Boyle's Law, Dalton's Law, and Henry's Law.
- 54 Describe the processes for respiration and circulation.
- 55 Describe the effects of reduced pressure at altitude.
- 56 Explain the negative factors associated with spatial disorientation and motion sickness.
- 57 Describe individual stresses imposed upon a pilot during flight.

Aerospace Medicine and Human Engineering

- 58 Describe the role of a flight surgeon in taking care of a flyer's medical needs.
- 59 List examples of machines being adapted to man's needs for flight productivity.
- 60 Describe the evolving of research within the fringes of space regarding space exploration.

Protective Equipment and Simulators

- 61 Describe the protective equipment used by pilots and astronauts.
- 62 State the purpose and function of flight simulators.

Basic Aeronautics

- 63 Describe the theory of flight.
- 64 Describe airfoils and flight.
- 65 Describe the effects of relative wind.
- 66 Describe the effects of angle of attack.
- 67 Identify the four forces of flight.

Aircraft Motion and Control

- 68 Identify the axes of rotation.
- 69 Describe the effects of flaps, slats, spoilers, and drag on flight.
- 70 Describe the elements of controlled flight.

Flight Power

- 71 Identify terms related to basic engine principles.
- 72 Define *Boyle's Law* and *Charles' and Gay-Lussac's Law*.
- 73 Describe how engines evolved from the earliest version to present day.
- 74 Describe the mechanical, cooling, and ignition systems of the reciprocating engines.
- 75 Describe the role of reversers and suppressors used in jet aircraft.
- 76 State methods to eliminate specific causes of pollution.

Aerospace Power

- 77 Outline the history of rocket engines.
- 78 Describe how rocket engines operate.
- 79 Describe the types of rocket engines.
- 80 Describe advanced propulsion systems.

Aerospace Vehicles

- 81 Identify types of civilian and military aircraft.
- 82 Identify types of rockets and missiles.

From Here to There

- 83 Describe the elements of a map.
- 84 Describe how to use air navigation charts.
- 85 Explain the importance of flight planning.
- 86 Describe how to perform a preflight plan.
- 87 Describe the elements of flight.
- 88 Describe the procedures essential to perform when lost in flight.

Navigation Elements

- 89 Explain the relation between the earth's size and shape to navigation.
- 90 Explain how to determine position, direction, distance, and time.

If It Were Only Flat

- 91 Identify the problems associated with projections.
- 92 State the projection classifications.
- 93 Describe the chart projection characteristics.

Navigation Instruments

- 94 Describe the functions of the clock, airspeed indicators, altimeter, and compass.
- 95 Explain the different types of altitude.
- 96 Describe the functions of turn-and-slip and attitude indicators.

Dead Reckoning

- 97 Describe basic facts and general principles of dead reckoning.
- 98 Explain wind triangle and its applications.

Navigation Aids

- 99 Describe the uses of the ADF, VOR, TACAN, VORTAC, and ILS.
- 100 Describe the uses of Celestial navigation.

- 101 Describe the uses of Radar, LORAN, and doppler.
- 102 Describe the uses of the Inertial Navigation System.
- 103 Summarize the uses of the plotter.
- 104 Describe the uses of the dead reckoning computer.

Application Level Activities

- 105 Diagram or scale the thermal layers of the Earth's atmosphere. Colors might be used to illustrate the warm and cool regions.
- 106 Do a report on one of the first balloon flights. Include facts such a whom or what was the passenger, what information did that flight contribute to the study of flight physiology.
- 107 Plan a visit to the local airport and/or navigation aids facilities. Make an oral or written report to class.

28.01400 - Intercommunication Skills and Unlocking Your Potential (UYP)

COURSE DESCRIPTION:

In leadership education, written reports and speeches compliment the course material. The students develop communications skills and participate in cadet corps activities. Cadet corps activities include holding positions of greater responsibility in the planning and execution of corps projects. These activities emphasize the concepts of effective communication. The course work allows students to examine themselves in relation to others, and the society in which they live. The course also builds communication and interpersonal skills. The students focus on team building to improve quality and productivity. They develop an understanding of the complexity of leadership and its contribution to mission accomplishment.

Unlocking Your Potential (UYP) prepares and inspires the students to succeed in life by setting goals. It explains how setting goals and creating positive habits paves the road to success. It also helps build self-esteem and motivates the student's inner strength. It shows the students they have the potential to believe and accomplish anything they desire.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

Communication Foundations

- 35 Define the term communication.
- 36 Explain the purpose of communication.
- 37 List the elements of communication.
- 38 List the types of communication.

The Basic Checklist

- 39 List the six steps of the basic checklist.
- 40 Explain the purpose of each step of the basic checklist.
- 41 Describe the six patterns for supporting your ideas.
- 42 Explain the importance of feedback.

Effective Writing

- 43 Edit a paragraph.
- 44 Identify the most common grammatical errors in writing.
- 45 Describe how to improve the clarity of your writing.
- 46 Write sentences and paragraphs.
- 47 List the two functions of the topic sentence.
- 48 List the easiest way to find the topic of a paragraph.
- 49 Write an essay using effective writing skills.
- 50 Critique compositions.

Effective Speaking

- 51 Describe the types of speaking modes.
- 52 List the three basic purposes of a speech.
- 53 Describe the general kinds of responses desired from the audience after a speech is delivered.
- 54 Describe the verbal techniques that enhance a speaker's delivery.
- 55 List the nonverbal and verbal techniques that can give emphasis to a speech.
- 56 Give impromptu speeches using effective speaking techniques.
- 57 Develop a speech.

Listening Effectively

- 58 Define the term listening.
- 59 List the four elements of the listening process.
- 60 Describe the different types of listening.
- 61 Explain the three key factors related to informative, relationship, appreciative, and discriminative listening.
- 62 Explain how to be an effective listener.
- 63 Use effective listening techniques in daily activities.

What Does It Mean To Be Human?

- 64 Distinguish between good and bad behavior.
- 65 Distinguish between the term reasonable and unreasonable.
- 66 Summarize the statement, "we have a free will".
- 67 Summarize the statement, "all events have been predetermined".

The Individual

- 68 Define the term personality.
- 69 Identify the three major forces personality differences stem from.
- 70 Explain how heredity, environment, experiences and learning help to shape an individual.
- 71 Give examples of different roles a person fulfill everyday.
- 72 Explain how a person uses his/her personality differently when he/she fulfills different roles.
- 73 Define the term self-image.
- 74 Describe the four basic positions or out looks that determine the way a person perceives himself/ herself.
- 75 Explain how emotions affect an individual.
- 76 Describe four constructive methods of expressing strong emotions.
- 77 List the five different types of love relationships.
- 78 List the five needs established by Abraham H. Maslow.

Defense Mechanisms

- 79 Explain situations that would be appropriate for a specific defense mechanism.

- 80 Define the terms frustration and conflict.
- 81 Describe the four ways people handle frustration and conflict.
- 82 Identify the five types of “blocking” techniques.
- 83 Describe the three types of evasive or detour type of defense mechanism.
- 84 Give examples of each of the defense mechanisms.

The Value System

- 85 Define the term value system.
- 86 Explain how you interpret, recognize, and react to the attitudes of others.
- 87 Explain how attitudes are developed.
- 88 Describe how beliefs and opinions are developed.
- 89 Describe how prejudices and stereotypes are developed.
- 90 List factors that influence the development of new attitudes, beliefs, opinions, prejudices, and stereotypes.
- 91 Define the term personal ethics.
- 92 Summarize how one’s value system influences his/her behavior.

Learning To Work Together

- 93 List the most common worries associated with personal identity in a team
- 94 Describe characteristics of team members.
- 95 Explain the stages of team growth.
- 96 Describe the feelings and behaviors demonstrated during each stage of team growth.
- 97 List traits of an effective team.

Working Through Group Problems

- 98 Describe nine common group problems.
- 99 Give some examples of how to overcome group problems.
- 100 Describe how a team leader can manage the nine common group problems.

Improving Group Effectiveness

- 101 Defend the importance of group guidelines.
- 102 Describe the three operating levels of groups.
- 103 Describe the nine group maturity characteristics.

Prejudice

- 104 Define the term discrimination.
- 105 Define the types of arbitrary discrimination.
- 106 Describe the term “prejudice.”
- 107 Give examples of how prejudice is learned and not inherited.
- 108 List the four great world ideas that oppose prejudice and support better human relations.
- 109 Describe steps that can be taken to reduce the potential for prejudice.

Sexism

- 110 Define the term “sexism.”
- 111 Distinguish between conscious and unconscious sexism.
- 112 Define sexual harassment.
- 113 Explain the three types of sexual harassment.
- 114 Give examples of the three types of sexual harassment.
- 115 Describe how to file a formal or informal sexual harassment complaint.
- 116 Describe some solutions for sexism and sexual harassment.

The Leadership Concept

- 117 Define leadership.
- 118 Describe the fundamental elements of leadership.
- 119 Identify mission and people as two important factors for leadership.
- 120 Describe the leadership traits of potential leader.

Leadership Principles

- 121 Explain the leadership principles.
- 122 Give examples of the principles of leadership.

The Leadership Situation

- 123 Distinguish between the terms leadership and management.
- 124 Explain the four primary factors of the leadership situation.
- 125 Explain the tasks involved in the mission.
- 126 Describe why people are important to the leadership situation.
- 127 Identify the style of leadership that should be used in specific situations.
- 128 List the factors that prepare you for the leadership situation.
- 129 Describe the leadership styles of different leaders.

Followership

- 130 Define the term “follower.”
- 131 Describe the five types of followers.
- 132 Describe how to be an effective follower.
- 133 Demonstrate the Air Force Core Values.
- 134 Explain importance of core values.
- 135 Explain ways a follower can strengthen the supervisor-follower relationship.

Building Teamwork

- 136 Describe the leadership maxims.
- 137 Explain how the behavior of subordinates can affect organizational goals.

You've Always had the Potential

- 138 Define potential.
- 139 Explain the difference between the “I can’t” attitude and the “I haven’t learned yet” attitude.
- 140 Discuss the statement: “It is not what I have, it’s what I do with what I have that determines my performance.”
- 141 Identify areas of their lives where they believe they are allowing, “being good” to get in the way of “being great.”

You're Born to Win

- 142 Define conditioning.
- 143 Define motivation.
- 144 Identify habits that may be keeping them from trying something new or attaining success in certain areas of their lives.
- 145 Explain the “Potential V” diagram.

The Most Amazing Computer of All

- 146 Describe the thought process (how our minds store information) and how it affects our behavior.
- 147 Define attitude.
- 148 Identify habits that may be keeping them from trying something new or attaining success in certain areas of their lives.
- 149 Explain how attitudes are formed.
- 150 Discuss the statement: Words are tools that predict and perpetuate performance.

Changing from the Inside Out

- 151 Define self-image.
- 152 Explain how self-talk and self-image affect performance.
- 153 List three steps for successful change.
- 154 Define affirmative reminders.
- 155 List the conditions for writing effective affirmative reminders.
- 156 Discuss the statement: All meaningful and lasting change starts on the inside with self-image and works its way out.

You'll See it When You Believe It

- 157 Explain what *Imagination x Vividness = Reality in the Subconscious* means and how it relates to performance.
- 158 Use affirmative reminders to rehearse the desired outcome of a goal or event.
- 159 Discuss the statement: You move toward and become like the image of your world that you hold uppermost in you mind.

How to Increase Self-Confidence

- 160 Explain the “Flick back, Flick up” technique (Visual Motor Behavior Rehearsal).

- 161 Discuss the statement: I will not be remembered by how few mistakes I make, but by how many successes I have.

Know You're Good...And Wear it Well

- 162 Define self-esteem — what it is and what it isn't.
163 Explain what happens in a low self-esteem environment.
164 List seven steps for building sound self-esteem.
165 Discuss the question: Can you have too much self-esteem?

Success Is a Journey...Not a Destination

- 166 Define success.
167 Explain the difference between values and goals.
168 Identify their five uppermost values in life.
169 Make a list of personal goals.
170 List seven principles for successful goal setting.

If you Fail to Plan, You're Planning to Fail

- 171 Develop and use a plan of action.
172 Discuss the statement: Seldom do we exceed our expectations. Even if the opportunity arises, we generally fail to capitalize on it.

How to Motivate Yourself and Others

- 173 Define and give examples of three types of motivation.
174 Explain why it is important to catch people in the act of doing things right.
175 Discuss the statement: Treat people as they are and they will remain that way.

What Employers Expect of a Great Employee

- 176 Explain why attitude is the key to employment success.
177 List three ways to develop and maintain good employee attitudes.
178 Complete an employment application.
179 Discuss the statement: We hire attitudes. We train for skills.

You Never Get a Second Chance to Make a First Impression

- 180 List what percentage of our communication is verbal, nonverbal and extra-verbal.
181 Define understanding.
182 Demonstrate two techniques for improving communication skills.

Taking Responsibility for Your Life

- 183 Use words like *want to*, *can*, *choose to* and *will* to replace words such as *have to*, *can't* and *should*.
184 Discuss the statement: It's not what happens to me; it's what I do with that happens to me that counts.

Qualities of Peak Performers

- 185 List characteristics of high-performance individuals.
186 Discuss the statement: Attitude, not aptitude, will give you altitude in life.

Application Level Activities

- 187 Present a variety of short speeches.
- 188 Critique speeches of your peers.
- 189 Prepare a written report of five pages on a military topic.
- 190 Present a 3-5 minute speech on your paper.
- 191 Write an essay.
- 192 Practice basic leadership skills.
- 193 Organize a debate team.
- 194 Lead team leadership exercises.
- 195 Participate as an effective follower in leadership exercises.
- 196 Develop a communications skills notebook with a variety of prepared communication activities.
- 197 Deliver special occasion speeches.
- 198 Deliver more complex speeches like persuasive speeches and speeches to reduce conflict.
- 199 Participate in public group discussions like panels and symposiums.
- 200 Use the problem-solving format for group discussions.

28.01500 – Aerospace Science: The Exploration of Space

COURSE DESCRIPTION:

Aerospace Science: The Exploration of Space is a course that focuses on the exploration of space. This course allows the students to examine the Earth, Moon, and planets. The students survey issues critical to travel in the upper atmosphere such as orbits and trajectories, unmanned satellites, space probes, guidance and control systems. The students study the American, Soviet, and International Space Programs. The students study the latest advances in space technology and continuing challenges of space and manned space flight. The course includes manned space flight's major milestones in the endeavor to land on the Moon, and to safely orbit humans and crafts in space for temporary and prolonged periods. The students study the development of the space station, the Space Shuttle and its future, and international laws for the use of and travel in space.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

From the Sun to the Earth

- 35 Describe the characteristics of the solar system.
- 36 Describe the structure of the Sun in terms of its photosphere, atmosphere, chromosphere, corona, core, and its production of energy.
- 37 Describe the probable formation and future of the Sun.
- 38 Describe the orbit, size, and general environment of Mercury and Venus.
- 39 Describe the divisions and characteristics of earth's ionosphere in terms of ions, causes of ionization, and ionospheric behavior.
- 40 Describe the magnetosphere and solar wind.
- 41 Describe the Van Allen Radiation Belts in terms of their structure, content, cause, and radiation hazards.
- 42 Identify the effects of solar disturbances on earth.
- 43 Describe cislunar space in terms of definition, dimensions, and content.
- 44 Define meteoroid, micrometeorite, meteor, and meteorite.

Space Beyond Earth's Orbit

- 45 Identify basic facts about the Moon relating to revolution and rotation, density, gravity, atmosphere, and surface features and temperature.
- 46 State two possible origins of moon dust.
- 47 Name two basic types of moon rocks.
- 48 Describe Mars in terms of basic facts about the planet.
- 49 Define asteroids and the asteroid belt.
- 50 Name the outer planets in their order from the Sun.
- 51 List basic facts about Jupiter, Saturn, Uranus, Neptune, and Pluto.
- 52 Describe the Milky Way galaxy and comet.

Surviving and Living in Space

- 53 Identify characteristics of space that can cause problems for human beings

- traveling there.
- 54 Describe how the three stresses of space flight affect astronauts while living and working in space.
 - 55 Name the principal items of life support needed on a spacecraft and tell how these were provided on the Apollo spacecraft.
 - 56 Describe how doctors monitor the astronauts' vital signs.
 - 57 Describe measures taken to ensure the astronauts' safety.

Physiological Results of Manned Space flight

- 58 Describe the most important biomedical findings made on the Mercury flights.
- 59 Describe two ways in which the Gemini 7 astronauts' bodies were kept in good condition during their 14-day flight.
- 60 Describe how the Apollo astronauts were protected during EVAs on the Moon.
- 61 Describe living conditions on the Skylab.
- 62 List some of the biomedical experiments and their findings.
- 63 Identify some unique characteristics of the Space Shuttle.
- 64 Describe future space projects the shuttle will support.
- 65 Describe two human problems that could become serious on prolonged flights.

American Space Programs

- 66 Describe the mission of the National Aeronautics and Space Administration.
- 67 Describe working satellites.
- 68 Explain the theory of an artificial satellite.
- 69 Differentiate between the difference between an active and a passive communication satellite.
- 70 Describe how they currently are affecting our lives.
- 71 Describe the theory of obtaining worldwide communications coverage using satellites.
- 72 Describe the importance of space technology in areas of weather satellites, earth survey satellites, communications satellites, and computers.
- 73 Describe the Defense Satellite Communications System and the commercial communication satellites.
- 74 Give examples of weather satellites.
- 75 Explain how forecasters gather data from the weather satellites to predict the weather.
- 76 Describe how navigation, environmental, and cable satellites are used.
- 77 List services provided by the LANDSAT.
- 78 Explain how scientific satellites gather data.
- 79 Describe scientific discoveries made possible by Explorer I, the Vanguard Satellites, Pioneer Satellites, Discoverer Satellites, and the Biosatellites.

Soviet Space Programs

- 80 Outline Soviet initiatives in space.
- 81 Identify classes of Soviet launch vehicles.
- 82 Describe the advances of the MIR space station.

International Space Programs

- 83 List the two categories of U.S. aeronautical and space research programs.
- 84 Outline the advances of the developing countries' space programs.
- 85 Describe the planned contributions of the Canadian Space Agency to the Space Station *Freedom*.

Rocket Boosters

- 86 State the need for heavy-lift launch vehicles (HLLV).
- 87 Identify the effect a small amount of thrust will have on a vehicle in space.
- 88 State reasons why objects in space can be moved about so easily.
- 89 State the reasons a lot of force or thrust is needed to slow a spacecraft to bring it out of orbit.
- 90 Describe why low-thrust over a long period of time is good for long space flights.
- 91 Identify two sources of electricity that might be available to spacecraft.
- 92 Identify the two types of sources of electrical power for onboard space systems.
- 93 Identify examples of the static power and dynamic power sources.
- 94 Identify three ways that the direction of a rocket engine's thrust can be changed.
- 95 Identify the major characteristics of current U.S. launch vehicles.
- 96 Describe the National Aerospace Plane program and future developments of new aeronautics and space technology in the United States.

Orbits and Trajectories

- 97 Describe the process that keeps an object in earth's orbit.
- 98 Name the points in an orbit where the orbiting body is the closest to and farthest from the earth and sun.
- 99 Define orbit, guidance system, burnout, escape velocity, and total escape velocity.
- 100 Describe how a satellite is launched.
- 101 Describe a ballistic trajectory.
- 102 State the purpose of a sounding rocket.
- 103 Identify the two basic types of orbital flight paths.
- 104 Describe the change to a circular orbit if the vehicle's speed is increased.
- 105 Describe the effect of earth's rotational and orbital velocities on the launching of a satellite.
- 106 Define the Hohmann and coplanar transfer.
- 107 Describe the noncoplanar transfer procedure to place a satellite in orbit directly above the equator.
- 108 Describe a geosynchronous orbit.
- 109 Identify the appropriate orbit for satellites that need constant sunlight.
- 110 Describe how polar orbits apply to working satellites.
- 111 Name the guidance system used in spacecraft.

Space Probes

- 112 Identify the three methods used for probing the planets.
- 113 Describe how probes of the Moon helped prepare the way for astronauts.
- 114 Identify the planets, which were probed by or landed on by each of the probes.
- 115 Identify future space probes.
- 116 Describe the purpose of using robotics in space.
- 117 Describe why gamma research is beneficial and how gamma rays are detected.
- 118 Describe the Gamma Ray, Advance X-Ray Astrophysics Facility, the Hubble Space Telescope, and the Space Infrared Telescope Facility and their purposes.

Commercial Use of the Space Program

- 119 Outline the four broad areas used for commercial purposes in space.
- 120 Describe how industries can profit from commercial opportunities in space.
- 121 Describe how NASA has expanded the nation's space capabilities.
- 122 Define the term satellite communications.
- 123 Describe how NASA is helping to expand the commercial application of remote sensing technologies.
- 124 Identify some of the advantages of earth and ocean observations.
- 125 Identify how materials research and processing will aid in the production of high-value products.
- 126 Describe how space transportation and industrial service will benefit private companies.

Journeying to the Moon

- 127 State our national goal for making a Moon landing.
- 128 Describe the method selected for making a Moon landing.
- 129 Identify the projects marking the three steps to the Moon and at least one goal of each project.
- 130 Describe how the astronauts were launched into and brought back from Earth orbit.
- 131 Describe the first Moon landing.
- 132 List three important results of the Apollo flights.
- 133 Identify the U.S. launch vehicles for Mercury, Gemini, Viking, and Voyager.

Developing Space Stations

- 134 State two ways in which the Skylab differed from an Earth laboratory.
- 135 Identify the four parts of the Skylab cluster.
- 136 Identify three kinds of experiments conducted on the Skylab.
- 137 Describe two of Skylab's scientific accomplishments.
- 138 Describe the importance of the Apollo-Soyuz linkup in promoting goodwill between the Soviets and the United States.
- 139 Describe how the standard docking module will help to make space rescue

- possible.
- 140 Describe how the Space lab will be used with the orbiter.
 - 141 Define the terms airlock, telemetry, and solar flares.
 - 142 Describe the Space Station *Freedom*.
 - 143 List some research benefit to mankind.

The Space Shuttle

- 144 Identify some unique characteristics of the Space Shuttle.
- 145 Explain how this spacecraft is used.
- 146 Describe how and why the shuttle was made reusable.
- 147 Identify three tests made with the Shuttle *Enterprise*.
- 148 Describe the sequence of events for a shuttle launch.
- 149 Describe the duties of the mission pilot, mission specialist, and payload specialist.
- 150 Describe how the shuttle reenters the atmosphere and lands.
- 151 Identify the three main divisions of the orbiter and shuttle.
- 152 Describe the first four flights of the shuttle, the *Challenger* accident, and the first four flights after the accident.
- 153 Describe the three kinds of space operations that may develop from the shuttle.
- 154 Predict future NASA projects.
- 155 Describe how Space Station *Freedom* will operate.
- 156 Describe why space colonies should be built.

Space Law

- 157 Define the term jurisdiction and sovereignty.
- 158 Identify the sources of space law.
- 159 Identify the theories of demarcation.
- 160 Identify the five major space treaties.

Application Level Activities

- 161 Make a model of the solar system.
- 162 Keep a scrapbook on the shuttle trips and developments in space made possible by the shuttle. What people are on the shuttle cruise and who are passengers?
- 163 Research and report on the number of ways telecommunications satellites are used in an average day within your home.
- 164 Start a clipping file on foreign space programs.
- 165 Organize a debate on the best future uses of space.
- 166 Research and report on a probe that is taking place at this time.
- 167 Prepare a class presentation on NASA's future plans for the shuttle.

28.01600 Life Skills and National Endowment for Financial Education (NEFE)

COURSE DESCRIPTION:

The leadership education course helps students decide which path to take after high school. The students will be able to apply for admission to college or to a vocational or technical school. The student will be able to begin a job search, decide whether or not to attend college or vocational school. Students write a résumé and prepare for a job interview. In leadership education, the students participate in activities addressing: financial planning and how to save, invest, and spend money wisely, as well as how not to get caught in the credit trap. Students examine real life issues such as understanding contracts, leases, wills, warranties, legal notices, personal bills, apartment shopping, and grocery shopping. The students practice citizen responsibilities such as registering to vote, jury duty, and draft registration.

The National Endowment for Financial Education (NEFE) is designed to illustrate the constantly changing field of financial planning and to address the changing needs and interests of students. The program has been developed to alert, inform, and education high school students about sound money management skills and the financial planning process. Students gain a working knowledge of the fundamentals and basic financial planning.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

Choosing Your Path:

- 35 List the steps a student should take to decide what to study after high school.
- 36 Identify the steps a student should take when selecting a college or vocational school.
- 37 Summarize the benefits of higher education.
- 38 Describe *The Occupational Outlook Handbook*.

Introduction to Aerospace Careers

- 39 Define the term aerospace.
- 40 List the prerequisites to entering the Air Force as an enlisted and officer member.
- 41 List examples of the types of training one can receive in the military.
- 42 List the occupational groups for enlisted and officer personnel.
- 43 Describe the four main pathways to becoming a commissioned officer.
- 44 Describe the difference between the enlisted and the officer areas of responsibility.
- 45 List various career opportunities in the aerospace industry.
- 46 Identify the education and training requirements by several career fields in aerospace.

College Choice: It's Your Decision

- 47 List the five questions that need “yes” answers when narrowing your choices of schools.
- 48 Explain nontraditional college systems.
- 49 Describe the term “distance learning.”
- 50 State the advantages of attending a community college.
- 51 Describe the Community College of the Air Force.
- 52 Describe a vocational or trade school.
- 53 Explain the purpose of on-the-job training.

Getting Ready to Apply for College

- 54 Describe entrance/placement tests and the kinds of tests given for college credit.
- 55 Explain the purpose and importance of evaluating a school.
- 56 Describe off-campus courses.
- 57 Explain the college admission process.
- 58 Describe what to expect during a college interview.
- 59 Describe what a student should look for during a campus visit.
- 60 State the two major factors to consider when selecting a major.

Funding Your Education

- 61 Give examples of places to look for financial aid.
- 62 Describe the different types of financial aid.
- 63 Fill out necessary paperwork for financial aid.
- 64 Describe the Reserve Officer Training Corps (ROTC) scholarship program.
- 65 Describe the eligibility criteria for federal student aid.

The Job Application

- 66 List five things to be concerned about when filling out a job application.
- 67 State five applications “do’s” and five application “don’ts.”
- 68 Describe the kind of information included on a job application.
- 69 List steps to follow before listing someone as a reference.

Preparing Your Résumé

- 70 Describe guidelines for preparing a résumé.
- 71 Give examples of the type questions a good résumé will answer for an employer.
- 72 Give examples of the different résumé formats.
- 73 List several guidelines for all types of résumés.
- 74 Describe four reasons for using a cover letter.
- 75 Prepare a complete résumé with a cover letter and job application.

Interviewing Techniques

- 76 List several sample interview questions.

- 77 Give examples of questions you might ask an employer.
- 78 Distinguish between proper and improper attire for the job interview.
- 79 Demonstrate several tips on how to act during an interview.

Financial Planning

- 80 Define the term financial planning.
- 81 List the six ongoing steps involved in the financial planning process.
- 82 Distinguish between needs and wants.
- 83 Explain the importance of financial planning.

Don't Get Caught in the Credit Trap

- 84 Define the term credit, loan, and debt.
- 85 Define several terms associated with credit.
- 86 List ten questions to ask before deciding to use credit.
- 87 List the different types of credit cards.
- 88 Name some of the kinds of credit people use.
- 89 Explain how to shop wisely for credit.
- 90 Explain how to use a credit card responsibly.
- 91 Outline what basic conditions must be met to obtain a loan
- 92 List the financial consequences of debt.
- 93 State the problems resulting from over extending your credit.

Banking and Spending Decisions

- 94 Explain how wages are figured.
- 95 Explain how to open a checking account.
- 96 List advantages of using a checking account.
- 97 Maintain a checkbook.
- 98 Explain how to reconcile a bank statement.
- 99 Define income and spending.
- 100 Prepare a budget.

Savings, Investments, and Insurance

- 101 Define the terms savings, investments, and insurance.
- 102 List the three factors that determine how much money will be available to meet
our specific financial goals.
- 103 Describe the two forms of investment.
- 104 List three basic investment principles.
- 105 Develop an investment program.
- 106 Identify the types of insurance.
- 107 Explain the importance of having certain types of insurance.

Real Life Issues

- 108 Explain lease and contract.
- 109 Describe a will.
- 110 Compare/contrast types of contracts.
- 111 Describe the term warranty.
- 112 Identify several terms used in legal notices.
- 113 Describe information that appears on personal bills.
- 114 Name certain citizen responsibilities.
- 115 Explain the jury selection process.
- 116 Describe responsibilities involved with owning a vehicle.
- 117 Explain helpful tips for apartment shopping.
- 118 Identify several advantages of apartment living.
- 119 List several grocery shopping tips.

Financial Planning: Your Roadmap

- 120 Identify the components in the five-step financial planning process.
- 121 Differentiate between needs and wants.
- 122 Describe how values can influence decisions.
- 123 Examine the significance of goal setting within the financial planning process.
- 124 Develop financial goals.
- 125 Collect personal financial information
- 126 Examine the impact of decision-making in the financial planning process.
- 127 Describe how delayed gratification impacts the financial planning process.
- 128 Describe how limited resources impact choices.
- 129 Identify the opportunity cost of financial decisions.
- 130 Apply a decision-making process to personal financial choices.
- 131 Discuss the importance of taking responsibility for personal financial decisions.
- 132 Examine a personal and/or financial application of the financial planning process.
- 133 Solve problems that arise in mathematics and in other contexts.
- 134 Define key words related to financial planning.

Career: Labor You Love

- 135 Observe the criteria employers look for in employees (SCANS).
- 136 Relate career factors to earning potential.
- 137 Discuss the effects of education and training on a career.
- 138 Define the characteristics of an entrepreneur.
- 139 Explain the steps to becoming an entrepreneur.
- 140 Distinguish benefits employees should consider when searching for employment
- 141 Define key words related to financial planning or careers.

Budget: Don't Go Broke

- 142 Identify the purpose of a budget.
- 143 Analyze pay stubs to determine resources available for financial objectives.
- 144 Construct a simple budget.
- 145 Relate spending and saving to resources available for each

- 146 Describe the “P.Y.F” (pay-yourself-first) philosophy.
- 147 Examine a variety of record keeping methods to be used for the budgeting process.
- 148 Define key words related to managing income.

Savings and Investments: Your Money at Work

- 149 Explain the relationship between saving and investing.
- 150 Describe reasons for saving and investing.
- 151 Explain the concept of the time value of money.
- 152 Describe how time, money, and rate of interest relate to meeting specific financial goals.
- 153 Use the Rule of 72.
- 154 Explain basic investment principles.
- 155 Discuss the impact of investment results when there is a delay in implementing a savings program.
- 156 Identify the relationship between risk and return.
- 157 Explain how inflation affects spending and investing.
- 158 Identify and discuss various savings and investment alternatives.
- 159 Define key words related to savings, investing, and time value of money.

Credit: Buy Now, Pay Later

- 160 Define the purpose of credit.
- 161 Explain the importance of using and managing credit wisely.
- 162 Define the various costs related to credit.
- 163 Identify sources of credit including installment loans, student loans and mortgages.
- 164 Use selection criteria for obtaining a credit card.
- 165 Discuss the factors to consider when building credit history.
- 166 Describe the advantages of using credit.
- 167 Discuss ways the use of credit can be abused.
- 168 Identify financial consequences of debt.
- 169 Describe the steps for correcting debt problems.
- 170 Identify impact of bankruptcy on credit.
- 171 Define key words related to credit and debt.

Insurance: Your Protection

- 172 Explain the use of insurance as an option for financial protection.
- 173 Describe how insurance works.
- 174 Identify ways to manage the possibility of financial loss.
- 175 Recognize the costs associated with insurance coverage.
- 176 Distinguish between the types of auto insurance coverage.
- 177 Recognize personal automobile insurance coverage.
- 178 Determine factors considered to obtain the cost of automobile insurance.
- 179 Relate insurance to your current and future personal needs.
- 180 Identify general types of insurance, including health, property, life, disability, and liability.

181 Define the key words relative to financial protection or loss.

Application Level Activities

182 Prepare an essay on the benefits of a career.

183 Complete at least two job applications for the class to critique.

184 Create a plan of action and timeline to realize career goals.

185 Participate in a physical fitness program to achieve the Presidential Physical Fitness Award.

186 Participate in public service projects that reinforce academic studies.

187 Develop a financial plan with criteria provided by the instructor.

188 Prepare an essay why high school students shouldn't have credit cards.

189 Participate in panel discussions about sound financial planning.

190 Participate in an exercise program that will move you closer to meeting the guidelines of the Presidential Physical Fitness Program.

191 Use information taught in class to plan cadet corps projects.

28.01700 Aerospace Science: Geography and Principles of Management (Optional 4th year) COURSE DESCRIPTION:

Aerospace Science: Geography and Principles of Management is a two-part course that focuses on geography and cadet leadership in action. Through the study of geography, students view their world through many different perspectives. Whether they are looking at global patterns or the finer details of neighborhood patterns they develop valuable insights about the Earth, its people, and the many different kinds of relationships between them.

In leadership education the cadets gain valuable experience managing the entire cadet corps. This hands-on experience affords the cadets the opportunity to practice using the theories of previous leadership courses. The planning, organizing, coordinating, directing, controlling, and decision-making are done by the cadets. They practice and develop their communication, decision-making, personal-interaction, managerial, and organizational skills. Students perform basic drill movements, conduct ceremonies, adhere to established grooming standards and exemplify proper wearing of the United States Air Force uniform. Students engage in practical exercises in leadership, management and directing personnel to gain experiences in working with people.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

Exploring Geography

- 35 Define the term “geography.”
- 36 Identify the five themes of geography.
- 37 Give examples of applications of the five themes.

Climate and Vegetation

- 38 Identify the main factors that influence climate.
- 39 Describe how convection affects temperature and precipitation.
- 40 Summarize the main types of climate regions.
- 41 Explain the relationship between climate and vegetation.

Population and Culture

- 42 Distinguish population size from population density.
- 43 Identify the causes of rapid population growth in the 20th century.
- 44 Describe traits that define cultures.

Resources and Land Use

- 45 Identify renewable and nonrenewable resources.
- 46 Describe the distribution of natural resources throughout the world.
- 47 Explain the importance of reliable energy sources.

Regional Atlas: The United States and Canada

- 48 Locate the United States and Canada and their major cities and physical features on a map.
- 49 Compare and contrast the population size, density, and distribution of the United States and Canada.
- 50 Locate major natural vegetation regions.
- 51 Compare and contrast the economic activities and resources of the United States and Canada.

A Profile of the United States

- 52 Identify the natural resources, technology, and values that have contributed to the political and economic successes of the United States.
- 53 Explain the relationship between transportation and communication and the growth of American industries.

Regions of the United States

- 54 Explain how bodies of water contributed to the region's growth.
- 55 Identify resources that are needed for industrialization.
- 56 Describe challenges associated with urbanization and high population density.

Canada

- 57 Identify the five regions of Canada and describe unique features of each.
- 58 Explain how landscape and climate have affected life in Canada.
- 59 Explain why Quebec and Ontario are Canada's heartland.

Regional Atlas: Latin America

- 60 Locate the countries of Latin America, their major cities, and physical features on a map.
- 61 Identify the major cultural influences on Latin America.
- 62 Describe the effects of elevation and nearness to oceans on climate and vegetation.

Mexico

- 63 Describe how mountains dominate Mexico's landforms.
- 64 Describe the characteristics of the five physical regions of Mexico.

Central America and the Caribbean

- 65 Describe the landforms and climate regions of Central America.
- 66 Explain how economic problems are related to political conflicts.

Brazil

- 67 Describe the four regions of Brazil.
- 68 Identify Brazil's resources.
- 69 Explain the location of Brasilia.

Countries of South America

- 70 Compare the ethnic backgrounds of the Guianas.
- 71 Describe the process of economic development in Venezuela.
- 72 Explain the problems of one-crop agriculture in Colombia.

Western and Central Western Europe

- 73 Locate Western and Central Western Europe's countries, major cities, and physical features.
- 74 Describe the cultural characteristics of Western Europe's population.
- 75 Explain the relationship between natural resources and population distribution in Western Europe.
- 76 Identify economic and physical differences among regions of France.
- 77 Explain how history, language, and culture contributed to French unity.

The British Isles and Nordic Nations

- 78 Name the countries of the United Kingdom.
- 79 Describe how England's location affected its development.
- 80 Explain why the Industrial Revolution began in England.
- 81 List key factors about Nordic Nations.

Mediterranean Europe

- 82 Identify the physical characteristics of the Iberian Peninsula.
- 83 Compare the history and economy of Spain and Portugal.

Regional Atlas: Eastern Europe

- 84 Locate Eastern Europe's countries, major cities, and physical features.
- 85 Identify the major ethnic groups of Eastern Europe.
- 86 Outline political changes in Eastern Europe.

Countries of Eastern Europe

- 87 Explain how geography and history have influenced Poland today.
- 88 Describe the role of the Roman Catholic Church and Solidarity in Poland's democracy movement.
- 89 Identify Poland's economic goals and challenges.
- 90 Explain the impact on most Eastern European nations that are comprised of

- different ethnic groups and languages.
- 91 Analyze the economic turmoil experienced by nations changing from communism to capitalism.
 - 92 Locate countries, major cities, and natural resources in Eastern Europe.
 - 93 Describe the influences the moderate-to-harsh climates have had on Eastern Europe.

Regional Atlas: Northern Eurasia

- 94 Locate Northern Eurasia's countries, major cities, and physical features on a map.
- 95 Describe the pattern of population distribution in Northern Eurasia.
- 96 Identify the major cultural, climate, and vegetation regions of Northern Eurasia.

Russia and the Independent Republics

- 97 Explain the influence of Europe and Russia on the Baltic nations, Ukraine, Belarus, and Moldova.
- 98 Outline the variety of languages and ethnic groups of the Caucasus region.
- 99 Describe the role of Islam in Azerbaijan and the central Asian nations.

Regional Atlas: Southwest Asia

- 100 Locate Southwest Asia's countries, major cities, and physical features on a map.
- 101 Compare and contrast the historical roots of Judaism, Christianity, and Islam.
- 102 Explain why water and oil are the two most important resources in Southwest Asia.

The Countries of Southwest Asia

- 103 Describe how the fall of Ottoman Empire affected Southwest Asia
- 104 State that Southwest Asia and the region called the Middle East are the same.
- 105 Analyze the conflict between Arabs and Jews.
- 106 Explain why the Palestinians were left without a homeland after 1948.

Africa

- 107 Locate Africa's countries, major cities, and physical features on a map.
- 108 Examine some of the characteristics of Africa's diverse population.
- 109 Describe the climate and vegetation zones of the region.

North Africa

- 110 Describe the pattern of population distribution in Egypt.
- 111 Identify the effects of urbanization and modernization on Egypt.
- 112 Discuss Egypt's economic strengths and obstacles to development.
- 113 Identify at least two unique aspects of North Africa.

West and Central Africa

- 114 Describe the location, climate, and vegetation of at least one West and Central Africa country.
- 115 Explain the process and effects of desertification in the Sahel.
- 116 Outline the economic goals and strategies of the nations in the Sahel.

East and Southern Africa

- 117 Describe changes brought by the British.
- 118 Explain the harambee effect on Kenya's economy.
- 119 Discuss the challenges Kenya faces.

South Asia

- 120 Locate South Asia's countries, major cities, and physical features on a map.
- 121 Describe the pattern of population distribution South Asia.
- 122 Describe the effects of the monsoons on South Asia's climate and agricultural activity.

The Countries of South Asia

- 123 Explain how Mohandas Gandhi helped India win independence from Great Britain.
- 124 Trace the events that led to the creation of Pakistan and Bangladesh.

East Asia and the Pacific World

- 125 Locate the countries, major cities, and physical features of East Asia and the Pacific world on a map.
- 126 Describe the cultural characteristics of the population of East Asia.
- 127 Identify the region's chief economic activities.

China

- 128 Outline Mao's programs for building a Communist state in China.
- 129 Identify the Four Modernizations and their effects on China's economy.
- 130 Describe the Chinese government's response to the 1989 democracy protests.

Japan and the Koreas

- 131 Describe Japan's physical geography.
- 132 Explain the effect of population density on the Japanese way of life.
- 133 Identify reasons for the strong sense of national unity of the Japanese.

Southeast Asia

- 134 Describe the different groups of people that settled in Southeast Asia.
- 135 Explain the influence of religion in this region.
- 136 Discuss the changes in Southeast Asia brought about by European.

The Pacific World and Antarctica

- 137 Explain why Australia has a small population.
- 138 Identify the eight major cities of Australia and their locations.
- 139 Describe the economy of Australia.

Problem Solving

- 140 Describe the six steps of the problem-solving process.
- 141 Describe the four barriers to creativity.
- 142 Define the term brainstorming.
- 143 Explain the four rules of brainstorming.
- 144 Solve specific problems using the six steps problem-solving process.

Decision Making

- 145 State the purpose of decision-making, problem solving, and contingency planning.
- 146 State the importance of creativity.
- 147 Describe the three elements of decision-making.
- 148 Describe the effective decision making techniques.
- 149 Make a decision on a given situation using effective decision-making techniques.

Negotiation

- 150 Define what is meant by the term negotiate.
- 151 Explain the key to successful negotiation.
- 152 Describe the styles of negotiation.
- 153 Describe the key negotiating principles.
- 154 Describe the five phases of a negotiation.
- 155 Explain the importance of negotiation.

Mentoring

- 156 Define the term mentoring.
- 157 Describe four types of mentoring.
- 158 List the ten rules for maintaining a mentoring relationship.
- 159 List the five attributes of a good mentor.
- 160 State the importance of mentoring.

Managing Your Time

- 161 Define time as a resource.
- 162 Explain the importance of setting objectives.
- 163 Give examples of key task areas.
- 164 Explain why planning systems are important.
- 165 Explain the importance of logging time used.
- 166 Define what is meant by the term procrastination.
- 167 List four causes of procrastination.
- 168 Discuss the six most important personal time wasters and ways of resolving them.
- 169 Describe the five styles of managing.
- 170 Construct a personal time management plan.
- 171 Describe some visual reminders that encourage good time use.

Managing Information

- 172 Define what is meant by the term information.
- 173 Describe how to set up a system for managing information.
- 174 Define information technology in the broadest sense of the term.
- 175 Describe computer-based technology of today.
- 176 Identify some of the many uses of the computer.

People Skills

- 177 Define what are people skills.
- 178 List four advantages of improved people skills.
- 179 Explain fundamental people skills.
- 180 Describe how to analyze situations.
- 181 Define what is meant by the term objective.
- 182 Describe how to shape other people's behavior.
- 183 Describe the assertive, submissive, and aggressive behaviors.

Management of Cadet Corps

- 184 Use the theories and techniques learned in previous leadership courses.
- 185 Demonstrate how to develop leadership and management competency through participation.
- 186 Practice strengthened organizational skills through active incorporation.
- 187 Demonstrate decision-making skills.
- 188 Display Air Force standards, discipline, and conduct.
- 189 Practice effective communication skills techniques.
- 190 Organize the cadet corps for effectiveness and efficiency.

A Study of Management

- 191 State the importance of studying management.
- 192 Define management.
- 193 Demonstrate the responsibilities of a manager.
- 194 Practice using important resources in an organization.

Principles of Management

- 195 Show how effectiveness and efficiency are important aspects of management.
- 196 Practice principles of management.
- 197 Identify the characteristics of management.

Functions of Management

- 198 Describe the opportunities available in management.
- 199 Describe the changes taking place in management.
- 200 Practice the five functions of management.
- 201 Develop a plan using the elements of planning.
- 202 Perform the four primary steps of organizing.
- 203 Explain the principles of organizing.
- 204 Practice directing and controlling techniques.

Conflict Management

- 205 Define conflict and conviction.
- 206 Distinguish between the terms empowerment and recognition.
- 207 Describe the nine antecedents to conflict.
- 208 Demonstrate the five personal conflict management styles.
- 209 Practice goal negotiations techniques in conflict situations.
- 210 Resolve conflicts by using conflict management techniques.
- 211 Choose behaviors to avoid conflicts.
- 212 Explain conflict resolution.

Personal Coping Mechanisms for Conflicts in Values

- 213 Identify the common defense mechanisms.
- 214 Describe key characteristics of defense mechanisms.
- 215 Show how defense mechanisms can negatively affect relationships.

Management: Skills, Roles, and Performance

- 216 Define what is meant by the term performance and productivity.
- 217 Practice the qualities of successful management.
- 218 Describe the management system.
- 219 Perform the crucial management skills that must be applied if an organization is to
; be successful.

Delegation Skills

- 220 State the roles of the manager in the delegation process.

- 221 Describe the external environment that impacts an organization.
- 222 Define what is meant by the term delegation.
- 223 State why delegation is important.
- 224 Show how a manager uses delegation effectively.
- 225 Practice effective delegation steps.
- 226 Identify problems in delegation.

Application Level Activities

- 227 Apply leadership and management principles to complex leadership and managerial situations.
- 228 Manage the entire cadet corps.
- 229 Adhere to military standards of behavior.
- 230 Provide guidance to lower class students to ensure that they practice adhering to military standards.
- 231 Use the functions of management with practical exercises to handle daily tasks.
- 232 Develop a career path for use after graduating from high school
- 233 Participate in interviews to get a job, join the military, or attend an institution of higher learning.
- 234 Present your plan for reaching your career goals to the class.
- 235 Improve career plans of your peers by providing constructive feedback on their career plans.
- 236 Write an essay about how your experiences in AFJROTC will help you succeed in life.

28.01800 Aerospace Science: Policy and Organization and Principles of Management (Optional 4th year)

COURSE DESCRIPTION:

This course establishes the foundation for understanding the policies of the United States and the organization of the United States Air Force. The students explore the United States' National Security Strategy and a brief history of the military. The Nixon, Ford, Carter, Reagan, Bush, Clinton, and the current George W. Bush, Jr., administrations are examined. Attention is focused on the connection between the military operations, national security strategy, the tools of the national security strategy and the national security environment. The relationship between the military and vital national interest is detailed. Throughout their studies the students relate current event issues to the topic being studied. The students distinguish between various elements of the defense structure of the United States to include, but not limited to, the objectives, mission, and organization of the Army, Navy, Marines, and the Coast Guard. Also, the students differentiate between the organization, mission and operations of the United States Air Force. They examine information on Joint Vision 2020 and the four operational concepts from it. The intent of Joint Vision 2020 is related to missions and tasks of the armed forces. Students discuss Congress, how it exercises its powers, and influence the defense structure of the United States. The students review how the Air Force is organized and how it prepares for war. The different echelons of commands are covered ranging from the secretary of the Air Force through the field level. Lastly, the students investigate Air Force current operational and personnel issues

In leadership education the cadets gain experience managing the entire cadet corps. This hands-on experience affords the cadets the opportunity to practice using the theories of previous leadership courses. The planning, organizing, coordinating, directing, controlling, and decision-making are done by the cadets. They practice and develop their communication, decision-making, personal-interaction, managerial, and organizational skills. Students engage in practical exercises in leadership, management and directing personnel to gain experiences in working with people.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

National Security Strategy

- 35 Describe the United States' interests in each area of the world.
- 36 Identify the three tools of our national security strategy.
- 37 Identify the threats to U.S. security.
- 38 Describe the United States' National Security Strategy.
- 39 Give examples of National Security environment situations.
- 40 Identify the dangers posed by the flow of potentially dangerous technologies.
- 41 Explain the relationship between the United States vital interests, the military, and overall stability and security.
- 42 Describe how the military helps to deter aggression and maintain peace.
- 43 Describe the United States strategic nuclear capabilities and how it can be used to maintain peace.
- 44 Identify examples of where smaller-scale contingency operations have helped to resolve crises.

- 45 State how the United States use of jointly trained and interoperable forces help win

- major theater wars.
- 46 Outline the role of the Department of Defense (DOD) ensure the United States is prepared to handle hostilities.

Military Historical Perspective

- 47 Describe the development of national militaries.
- 48 Outline the history of the U.S. military.
- 49 Describe the Nixon, Ford, Carter, Reagan, Bush, and Clinton, years.
- 50 Outline the challenges for the new millennium.
- 51 Identify specific programs and policies of George W. Bush, Jr., administration.
- 52 Identify the essential elements necessary for Global Reach – Global Power into the 21st century to work.
- 53 State the importance of the Air Reserve Component (ARC) to helping to keep the United States a free nation.
- 54 Explain current issues in the media that give emphasis to military issues.
- 55 State some key factors associated with the breakdown of the Soviet Union.
- 56 Identify how an integration of airlift and tanker support helped the United States.

Defense Structure of the United States

- 57 Outline the reforms in the Department of Defense.
- 58 Describe the organization of the Department of Defense.
- 59 Differentiate between the missions and organizations of the Army, Navy, Marines and Coast Guard.

United States Air Force

- 60 Outline the structure of the United States Air Force.
- 61 Identify the major commands of the USAF.
- 62 Distinguish between the missions of the USAF's field operating agencies and direct reporting units.

Air Force Issues

- 63 Compose a list of key Air Force issues.
- 64 Separate Air Force operational issues from Air Force personnel issues.

Problem Solving

- 65 Describe the six steps of the problem-solving process.
- 66 Describe the four barriers to creativity.
- 67 Define the term brainstorming.
- 68 Explain the four rules of brainstorming.
- 69 Solve specific problems using the six steps problem-solving process.

Decision Making

- 70 State the purpose of decision-making, problem solving, and contingency planning.
- 71 State the importance of creativity.
- 72 Describe the three elements of decision-making.
- 73 Describe the effective decision making techniques.
- 74 Make a decision on a given situation using effective decision-making techniques.

Negotiation

- 75 Define what is meant by the term negotiate.
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- 78 Describe the key negotiating principles.
- 79 Describe the five phases of a negotiation.
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- 81 Define the term mentoring.
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- 84 List the five attributes of a good mentor.
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- 89 Explain why planning systems are important.
- 90 Explain the importance of logging time used.
- 91 Define what is meant by the term procrastination.
- 92 List four causes of procrastination.
- 93 Discuss the six most important personal time wasters and ways of resolving them.
- 94 Describe the five styles of managing.
- 95 Construct a personal time management plan.
- 96 Describe some visual reminders that encourage good time use.

Managing Information

- 97 Define what is meant by the term information.
- 98 Describe how to set up a system for managing information.
- 99 Define information technology in the broadest sense of the term.

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- 100 Define what are people skills.
- 101 List four advantages of improved people skills.
- 102 Explain fundamental people skills.
- 103 Describe how to analyze situations.
- 104 Define what is meant by the term objective.
- 105 Describe how to shape other people's behavior.
- 106 Describe the assertive, submissive, and aggressive behaviors.

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- 107 State the importance of studying management.
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- 109 Demonstrate the responsibilities of a manager.
- 110 Practice using important resources in an organization.

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- 111 Show how effectiveness and efficiency are important aspects of management.
- 112 Practice principles of management.
- 113 Identify the characteristics of management.

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- 114 Describe the opportunities available in management.
- 115 Describe the changes taking place in management.
- 116 Practice the five functions of management.
- 117 Develop a plan using the elements of planning.
- 118 Perform the four primary steps of organizing.
- 119 Explain the principles of organizing.
- 120 Practice directing and controlling techniques.

Conflict Management

- 121 Define conflict and conviction.
- 122 Distinguish between the terms empowerment and recognition.
- 123 Describe the nine antecedents to conflict.
- 124 Demonstrate the five personal conflict management styles.
- 125 Practice goal negotiations techniques in conflict situations.
- 126 Use listening skills to resolve conflict.
- 127 Resolve conflicts by using conflict management techniques.
- 128 Practice ways to avoid conflicts.
- 129 Choose behaviors to avoid conflicts.
- 130 Explain conflict resolution.

Personal Coping Mechanisms for Conflicts in Values

- 131 Identify the common defense mechanisms.
- 132 Describe key characteristics of defense mechanisms.
- 133 Show how defense mechanisms can negatively affect relationships.

Management: Skills, Roles, and Performance

- 134 Define what is meant by the term performance and productivity.
- 135 Practice the qualities of successful management.
- 136 Describe the management system.
- 137 Perform the crucial management skills that must be applied if an organization is to be successful.

Delegation Skills

- 138 State the roles of the manager in the delegation process.
- 139 Describe the external environment that impacts an organization.
- 140 Define what is meant by the term delegation.
- 141 State why delegation is important.
- 142 Show how a manager uses delegation effectively.
- 143 Practice effective delegation steps.
- 144 Identify problems in delegation.

Application Level Activities

- 145 Apply leadership and management principles to complex leadership and managerial situations.
- 146 Manage the entire cadet corps.
- 147 Adhere to military standards of behavior.
- 148 Provide guidance to lower class students to ensure that they practice adhering to military standards.
- 149 Use the functions of management with practical exercises to handle daily tasks.
- 150 Develop a career path for use after graduating from high school
- 151 Participate in interviews to get a job, join the military, or attend an institution of higher learning.
- 152 Present your plan for reaching your career goals to the class.
- 153 Improve career plans of your peers by providing constructive feedback on their career plans.
- 154 Write and essay about how your experiences in AFJROTC will help you succeed in life.

28.01900 Aerospace Science: Honors Ground School Program and Principles of Management (Optional 4th year)

COURSE DESCRIPTION:

Aerospace Science: Honors Ground School Program and Principles of Management is the honors program. This course is the ground school basic course. The material covered is an advanced, more in-depth study of the previous aerospace topics. The students will learn the principles of instrument flight, including the operation use, and limitations of flight instruments and instrument navigation systems. This course is the foundation for receiving a private pilot license. The students' knowledge of VFR cross-country and night operations will broaden. The students practice skills necessary to operate an airplane in the night environment and during extended cross-country flights. Students study how the air traffic control system functions and use instrument flight charts for IFR planning and flight. Emphasis will be placed on advanced human and physiological factors directly related to instrument flight. The students prepare to take and pass the Federal Aviation Administration (FAA) written examination after completion of the course.

In leadership education the cadets gain valuable experience managing the entire cadet corps. This hands-on experience affords the cadets the opportunity to practice using the theories of previous leadership courses. The planning, organizing, coordinating, directing, controlling, and decision-making are done by the cadets. They practice and develop their communication, decision-making, personal-interaction, managerial, and organizational skills. Students perform basic drill movements, conduct ceremonies, adhere to established grooming standards and exemplify proper wearing of the United States Air Force uniform. Students engage in practical exercises in leadership, management and directing personnel to gain experiences in working with people.

The performance standards in this course are based on the performance standards identified in the curriculum for the United States Air Force Junior Reserve Officer Training Corps (AFJROTC). Successful completion of at least 3 units of credit of the AFJROTC programs will qualify the students for advanced placement in a college ROTC program or accelerated promotion in the military service.

Discovering Aviation

- 35 Summarize key factors associated with pilot training, aviation opportunities, and human factors in aviation.
- 36 Explain basics of the school's pilot training program.
- 37 Describe the role of the FAA.
- 38 Identify the eligibility requirement for pilot training.
- 39 Describes the types of training available for pilots.
- 40 Describe the phases of pilot training.
- 41 List careers in aviation.
- 42 Explain key aspects of private pilot privileges.
- 43 Give examples of advanced pilot training and opportunities.

Airplane Systems

- 44 Identify the main airplane components and systems.
- 45 Differentiate flight instrument functions and operating characteristics, including errors and common malfunctions.
- 46 Identify the limitations and common errors of the flight instrument systems and

- components.
- 47 Demonstrate understanding of IFR instrument requirements, flight systems, and instrument operations during oral quizzing.
 - 48 Describe the power plant and related systems.

Aerodynamic Principles

- 49 Describe the four forces of flight.
- 50 Describe the aerodynamic principles of stability, maneuvering flight, and load factor.
- 51 Explain stall/spin characteristics as they relate to training airplanes.

The Flight Environment

- 52 Identify important safety considerations, including collision avoidance precautions, right-of-way rules, and minimum safe altitudes.
- 53 Identify airport marking and lighting, aeronautical charts, and types of airspace.
- 54 List ways to avoid collisions.

Communication and Flight Information

- 55 Name FAA radar equipment and services for VFR aircraft.
- 56 Use the radio for communication.
- 57 List sources of flight information, particularly the *Aeronautical Information Manual* and FAA advisory circulars.

Meteorology for Pilots

- 58 Identify the causes of various weather conditions, frontal systems, and hazardous weather phenomena.
- 59 Identify critical weather situations from the ground and during flight, including hazards associated with thunderstorms.
- 60 State how to recognize and avoid wind shear and wake turbulence.

Interpreting Weather Data Ground

- 61 Interpret weather reports, formats, and graphic charts.
- 62 List the sources of weather information during preflight planning and while in flight.
- 63 Identify critical weather situations described by weather reports and forecasts.

Attitude Instrument Flying

- 64 Identify the basic principles of attitude instrument flying, including the fundamental procedures related to instrument crosscheck, instrument interpretation, and aircraft control.
- 65 Demonstrate understanding of basic attitude instrument flight during oral

- quizzing.
- 66 Summarize important factors of partial panel instrument flight procedures.

Instrument Navigation

- 67 Describe the function, use, and limitations of VOR, DME, and ADF radio equipment for navigation.
- 68 Name some of the instrument navigation to include RNAV and GPS.
- 69 Identify VORTAC-Based Area Navigation, Inertial Navigation System (INS), Long Range Navigation (LORAN), and Global Positioning System (GPS).
- 70 Demonstrate understanding of the use of navigation systems during oral quizzing.

Airports, Airspace, and Flight Information

- 71 Demonstrate understanding of the airport environment and lighting, as well as airspace usage and sources of flight information during oral quizzing.
- 72 Describe the airport environment.
- 73 Distinguish between A, B, C, D, and E airspace.
- 74 Define the acronym ADIZ.

Air Traffic Control System

- 75 List the types of services provided by the air traffic control system.
- 76 Demonstrate understanding of en route and terminal ATC services during oral quizzing.

ATC Clearances

- 77 List ATC clearance procedures.
- 78 Demonstrate understanding of pilot responsibilities and clearance procedures during oral quizzing.

Airplane Performance

- 79 Compute takeoff and landing distances and fuel requirements.
- 80 Compute and control the weight and balance condition of a typical training airplane.
- 81 Use basic functions of aviation computers.
- 82 Identify the effects of density altitude on takeoff and climb performance.
- 83 List factors that affect the aircraft performance.

Navigation

- 84 Use pilotage, dead reckoning, and aircraft navigation systems with the concept of VFR navigation.
- 85 Follow the guidelines and recommended procedures related to flight planning, use of an FAA Flight Plan, VFR cruising altitudes, and lost procedures.

Applying Human Factor Principles

- 86 Identify important aviation physiological factors as they relate to private pilot operations.
- 87 Practice accepted procedures and concepts pertaining to aeronautical decision making and judgment, including cockpit resource management and human factors training.

Flying Cross-Country

- 88 Develop a sound understanding of the planning process for a cross-country flight.
- 89 Plan for alternatives and diversions for successful flight completion.

Dual – Cross-Country

- 90 Preparation for solo cross-country flights by reviewing VFR cross-country skills including the demonstration of simulated emergency procedures.
- 91 Practice planning and conducting all phases of the IFR cross-country flight in preparation for the Stage III exam.
- 92 Perform the appropriate emergency procedures as well as resource management and decision making practices for en route IFR operations.
- 93 Demonstrate instrument pilot knowledge and proficiency, as outlined in the current FAA Instrument Rating Practical Test Standards.
- 94 Demonstrate complete understanding of IFR cross-country procedures.
- 95 Perform all IFR and pertinent simulated emergency procedures at the instrument pilot proficiency level, as outlined in the current FAA instrument rating practical test standards.

Problem Solving

- 96 Describe the six steps of the problem-solving process.
- 97 Describe the four barriers to creativity.
- 98 Define the term brainstorming.
- 99 Explain the four rules of brainstorming.
- 100 Solve specific problems using the six steps problem-solving process.

Decision Making

- 101 State the purpose of decision-making, problem solving, and contingency planning.
- 102 State the importance of creativity.
- 103 Describe the three elements of decision-making.
- 104 Describe the effective decision making techniques.
- 105 Make a decision on a given situation using effective decision-making techniques.

Negotiation

- 106 Define what is meant by the term negotiate.
- 107 Explain the key to successful negotiation.

- 108 Describe the styles of negotiation.
- 109 Describe the key negotiating principles.
- 110 Describe the five phases of a negotiation.
- 111 Explain the importance of negotiation.

Mentoring

- 112 Define the term mentoring.
- 113 Describe four types of mentoring.
- 114 List the ten rules for maintaining a mentoring relationship.
- 115 List the five attributes of a good mentor.
- 116 State the importance of mentoring.

Managing Your Time

- 117 Define time as a resource.
- 118 Explain the importance of setting objectives.
- 119 Give examples of key task areas.
- 120 Explain why planning systems are important.
- 121 Explain the importance of logging time used.
- 122 Define what is meant by the term procrastination.
- 123 List four causes of procrastination.
- 124 Discuss the six most important personal time wasters and ways of resolving them.
- 125 Describe the five styles of managing.
- 126 Construct a personal time management plan.
- 127 Describe some visual reminders that encourage good time use.

Managing Information

- 128 Define what is meant by the term information.
- 129 Describe how to set up a system for managing information.
- 130 Define information technology in the broadest sense of the term.
- 131 Describe computer-based technology of today.
- 132 Identify some of the many uses of the computer.

People Skills

- 133 Define what are people skills.
- 134 List four advantages of improved people skills.
- 135 Explain fundamental people skills.
- 136 Describe how to analyze situations.
- 137 Define what is meant by the term objective.
- 138 Describe how to shape other people's behavior.
- 139 Describe the assertive, submissive, and aggressive behaviors.

A Study of Management

- 140 State the importance of studying management.
- 141 Define management.
- 142 Demonstrate the responsibilities of a manager.
- 143 Practice using important resources in an organization.

Principles of Management

- 144 Show how effectiveness and efficiency are important aspects of management.
- 145 Practice principles of management.
- 146 Identify the characteristics of management.

Functions of Management

- 147 Describe the opportunities available in management.
- 148 Describe the changes taking place in management.
- 149 Practice the five functions of management.
- 150 Develop a plan using the elements of planning.
- 151 Perform the four primary steps of organizing.
- 152 Explain the principles of organizing.
- 153 Practice directing and controlling techniques.

Conflict Management

- 154 Define conflict and conviction.
- 155 Distinguish between the terms empowerment and recognition.
- 156 Describe the nine antecedents to conflict.
- 157 Demonstrate the five personal conflict management styles.
- 158 Practice goal negotiations techniques in conflict situations.
- 159 Use listening skills to resolve conflict.
- 160 Resolve conflicts by using conflict management techniques.
- 161 Practice ways to avoid conflicts.
- 162 Choose behaviors to avoid conflicts.
- 163 Explain conflict resolution.

Personal Coping Mechanisms for Conflicts in Values

- 164 Identify the common defense mechanisms.
- 165 Describe key characteristics of defense mechanisms.
- 166 Show how defense mechanisms can negatively affect relationships.

Management: Skills, Roles, and Performance

- 167 Define what is meant by the term performance and productivity.
- 168 Practice the qualities of successful management.
- 169 Describe the management system.
- 170 Perform the crucial management skills that must be applied if an organization is to be successful.

Delegation Skills

- 171 State the roles of the manager in the delegation process.
- 172 Describe the external environment that impacts an organization.
- 173 Define what is meant by the term delegation.
- 174 State why delegation is important.
- 175 Show how a manager uses delegation effectively.
- 176 Practice effective delegation steps.
- 177 Identify problems in delegation.

Application Level Activities

- 178 Apply leadership and management principles to complex leadership and managerial situations.
- 179 Manage the entire cadet corps.
- 180 Adhere to military standards of behavior.
- 181 Provide guidance to lower class students to ensure that they practice adhering to military standards.
- 182 Use the functions of management with practical exercises to handle daily tasks.
- 183 Develop a career path for use after graduating from high school
- 184 Participate in interviews to get a job, join the military, or attend an institution of higher learning.
- 185 Present your plan for reaching your career goals to the class.
- 186 Improve career plans of your peers by providing constructive feedback on their career plans.
- 187 Write an essay about how your experiences in AFJROTC will help you succeed in life.