**CURRICULUM OUTLINE**

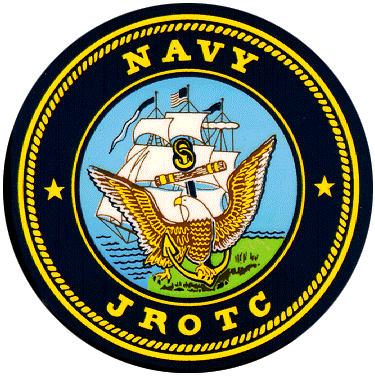
**FOR THE**

**NAVAL JUNIOR RESERVE OFFICERS**

**TRAINING CORPS**

### **NAVAL SCIENCE 2**

### **Maritime History and Nautical Sciences**

****

**Prepared By**

**Naval Service Training Command**

**Pensacola, Florida**

**August 2006**

**NAVEDTRA 37137-B**

**NSN 0509LP1048052**

# RECORD OF CHANGE

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i

**GOALS AND OBJECTVES OF THE NJROTC PROGRAM**

The NJROTC program goals are to provide an opportunity for secondary school students to learn about the basic elements and requirements for national security and their personal obligations as American citizens to contribute toward national security. The NJROTC has the following basic objectives:

a. Promote patriotism

b. Develop informed and responsible citizens

c. Promote habits of orderliness and precision, and develop respect

for constituted authority

d. Develop a high degree of personal honor, self-reliance, individual

discipline, and leadership

e. Promote an understanding of the basic elements and requirements

for national security

f. Develop respect for and an understanding of the need for

constituted authority in a democratic society

g. Develop an interest in the military service as a possible career

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# PREFACE

This document was prepared for submission to the NJROTC Curriculum Development Committee for approval. The curriculum outline lists course lesson topics and associated learning objectives, both unit and lesson topics, in their sequential order. Criterion reference tests will be used to measure cadet achievement. Each senior naval science instructor(SNSI) will set the standard for all cognitive objectives based on local guidelines.

Task analysis for the NS-2 Maritime History and Nautical Science manual, was accomplished by the Naval Junior Reserve Officers Training Corps (NJROTC) staff, Pensacola, Florida, under the guidance of the Naval Service Training Command (NSTC), using the Jury of Expert method and questionnaires.

Appropriate modifications will be left to the discretion of SNSIs.

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# SECTION A

# CURRICULUM FRAMEWORK

# Maritime History/Naval Leadership

A. Major concepts/content. The purpose of this course is designed to engender a

sound appreciation for the heritage and traditions of America, with recognition

that the historically significant role of sea power will be important in America’s

future, and develop in each cadet a growing sense of pride in his/her organization,

associates, and self. These elements are pursued at a fundamental level.

The content should include, but not be limited to the following:

-understand the importance of sea control and how sea power influenced the growth

of Early Western Civilization

-naval history and heritage from the American Revolution through 1775-1783

-introduction to the growth of American sea power from 1783-1860

-knowledge of the Civil War, 1861-1865

-the importance of the Navy’s role from The Rise to World Power Status

1865-1914

-understand the importance of the Navy’s role from World War I, 1914-1918.

-the importance of the Interwar Years, 1918-1941

-understand the events that took place and military readiness of naval history

of World War II, 1941-1945

-introduce the events that took place in naval history in the Pacific War from

1941-1945

-knowledge of and understand naval history from the Cold War Era, 1945-199

-naval history (The Cold War Era, 1945-1991)

-naval history from the 1990s and Beyond

# Naval Leadership

-understand the principles of effective leadership and the importance of

discipline in NJROTC and elsewhere

-understand approaches to Leadership in civilian and military life

-understand how influencing behavior contributes to effective leadership

B. Intended outcomes. After successfully completing this course the student will:

1. Be knowledgeable of and have the understanding of how sea power influenced the growth of Early Western Civilization.

1. See the effect of major maritime nations and activities on U.S. naval history

and heritage from the American Revolution 1775-1783.

1. Expand cadets knowledge of an understanding of the growth of American sea

power from 1783-1860.

4. Expand his/her knowledge of the Civil War (1861-1865) issues which divided the

North and South and which eventually led to the outbreak of the Civil War.

5. Expand his/her knowledge concerning the Navy’s role from The Rise to World

Power Status 1865-1914.

6. Expand his/her knowledge of the Navy’s role from World War I, 1914-1918.

1. Demonstrate an understanding of the events that took place during the Interwar

Years, 1918-1941.

A-1-1

1. Expand his/her knowledge about naval history of World War II, the Atlantic War

1941-1945.

1. Be knowledgeable and demonstrate an understanding of naval history in the

Pacific War from 1941-1945.

10. Expand his/her knowledge of naval history from the Cold War Era, 1945-1991.

11. Expand his/her knowledge relating to the events of naval history that took

place from the 1990s and beyond.

# Naval Leadership

1. Expand his/her knowledge relating to leadership in the NJROTC-and Elsewhere.

2. Expand his/her knowledge relating to approaches to effective leadership in

civilian and military life.

3. Become knowledgeable of the factors that influence behavior in leadership

roles.

A-1-2

SECTION B

COURSE OBJECTIVES

UNIT TITLE: 1.0 **SEA POWER AND EARLY WESTERN CIVILIZATION**

UNIT OBJECTIVE: 1.0 The cadet will be expected to demonstrate the

knowledge of how sea power influenced the growth of

Early Western Civilization.

LESSON TOPIC: 1.0 Sea Power and Early Western Civilization

ALLOTTED SESSIONS: 4

LESSON TOPIC OBJECTIVES:

* + 1. Describe the importance of sea control.
    2. Explain how sea power evolved and its influence on the

ancient world.

* + 1. Describe the conflict between the Greeks and the Persians

in 492 B.C.

* + 1. Describe the rise of the Roman Empire and its influence on

civilization from 275 B.C. to 476 A.D.

* + 1. Explain how the Roman Empire was free to spread throughout

the Mediterranean.

1.0.6. Describe the fall of the Roman Empire and the subsequent

thousand years of turmoil that followed.

1.0.7. Describe the events that caused the Turks to lose the

Battle of Lepanto in 1571 and their control of the

Mediterranean area.

1.0.8. Describe the growth of the world during the Age

of Discovery.

1.0.9. Describe the conflict between England and Spain in 1570.

1.0.10. Explain how the English defeated the Spanish Armada.

1.0.11. Describe methods used by England to build her empire in

the 17th century.

UNIT TITLE: 2.0 **THE AMERICAN REVOLUTION 1775-1783**

UNIT OBJECTIVE: 2.0 The cadets will be expected to demonstrate an

understanding of how sea power influenced the growth of

The American Revolution 1775-1783

LESSON TOPIC: 2.0 The American Revolution 1775-1783

ALLOTTED SESSIONS: 4

B-1-1

LESSON TOPIC OBJECTIVES:

* + 1. Describe the taxing system used by England on the colonies

and the subsequent events that led to the American

Revolution.

* + 1. Explain the difficulties the British faced in fighting

naval battles with the colonies.

* + 1. Describe how the American Navy was born and the

significance of building the Navy.

* + 1. Cite the importance of the first American Naval operation

against the English Navy in the American Revolution.

* + 1. Explain the strategy General Benedict Arnold used at

the battle of Lake Champlain and the significance of the

battle.

* + 1. Describe the tactics General George Washington used to

save the colonial capital at Philadelphia.

* + 1. Describe the failure of the British three-pronged plan

during the Crucial Year of 1777.

2.0.8 Describe the two major events(turning point)of the battle

of Saratoga and the impact it had on the American

Revolutionary War.

* + 1. Explain how naval power affected the outcome of the War at

Sea.

2.0.10 Explain France’s role in the Closing Campaigns of the

war.

* + 1. Describe the events leading up to the battle of Yorktown

and the subsequent end of the fighting in the colonies.

UNIT TITLE: 3.0 **THE GROWTH OF AMERICAN SEA POWER, 1783-1860**

UNIT OBJECTIVE 3.0 The cadets will be expected to demonstrate an

understanding of the growth of American sea power from

1783-1860.

LESSON TOPIC: 3.0 The Growth of American Sea Power, 1783-1860

ALLOTTED SESSIONS: 6

LESSON TOPIC OBJECTIVES:

* + 1. Explain the reasons why the American economy

suffered in 1783.

* + 1. Explain the changes the U.S. Constitution caused

in the American industry.

B-1-2

3.0.3 Cite the events surrounding the Navy Act of 1794.

3.0.4 Explain the events during the quasi-war between American

and France(1798-1800).

* + 1. Explain why American began a war with Tripoli and the

Barbary Pirates, 1801-1805.

3.0.6 Cite the events surrounding the capture and destruction of the USS Philadelphia.

3.0.7 Explain the events leading up to the treaty with Tripoli.

3.0.8 Cite the lessons America learned from the war with the

Barbary States.

* + 1. Explain the events that led America toward war with

England.

* + 1. Explain the events that surrounded the Chesapeake

incident.

* + 1. Describe the events that led to the final moves toward war

between the United States and Britain.

* + 1. Describe the major sea battles between the American and

the British forces during the War of 1812.

* + 1. Explain the significant sea victories that occuried at sea

during the war of 1812.

3.0.14 Cite other high sea battles that occurred during the

War of 1812.

* + 1. Explain other major incidents where the British prevailed

over America’s sea vessels.

3.0.16 Explain in the U.S. victory’s of Lake Erie and its effect

on the Northwest Territory.

3.0.17 Cite the offensive maneuvers used by the British Navy

during the War of 1812.

3.0.18 Describe the major events of the battle of New Orleans

at the conclusion of the war.

3.0.19 Explain how sea power influenced the spread of Western

Civilization and the formative years of the new American

republic.

3.0.20 Explain the contribution the U.S. Navy made to the

progress of world trade between 1815 and 1860.

3.0.21 Describe the rapid growth and subsequent decline of the

American whaling industry.

3.0.22 Explain the rapid growth of the American shipbuilding

industry.

B-1-3

3.0.23 Explain America’s role in the slave trade.

3.0.24 Explain the events that led to the beginning of the

Mexican war and the significance of the Treaty of

Guadalupe Hidalog.

3.0.25 Describe the effects the clipper ships had on trade

with China.

3.0.26 Explain the purpose of Commodore Perry’s mission to Japan.

UNIT TITLE: 4.0 **THE CIVIL WAR, 1861-1865**

UNIT OBJECTIVE 4.0 The cadet will be expected to demonstrate knowledge of

the Civil war, 1861-1865

LESSON TOPIC: 4.0 The Civil War, 1861-1865

ALLOTTED SESSIONS: 6

LESSON TOPIC OBJECTIVES:

* + 1. Describe how the issue of slavery divided the North and

South and led to the outbreak of the Civil War in 1861.

* + 1. Describe the major events that occurred during 1860-61

in America.

* + 1. Describe the resources of both the North and the South

and the preparations required to fight the Civil War.

4.0.4 Describe the role of the Union Navy during the Civil War.

4.0.5 Describe the acts of defeat and diplomacy used during

the Civil War.

4.0.6 Explain the importance of the river campaigns of the

Civil War.

4.0.7 Explain the significant events that took place during

the battle

4.0.8 Describe the CSS *Virginia* (Formerly USS Merrimack) and

the USS *Monitor*.

4.0.9 Describe the major events that occurred during the

Battle of Hampton Roads.

4.0.10 Describe how General Robert E. Lee was able to prolong

the life of the Confederacy after the Battle of Hampton

Roads.

4.0.11 Describe the Emancipation Proclamation as a significant

psychological move for the North in the Civil War.

4.0.12 Describe the major events that occurred during the Battle

4.0.13 Describe the Battle of Gettysburg as the turning point in

the Civil War.

B-1-4

4.0.14 Explain the role that Charleston played in the Civil War.

4.0.15 Explain the purpose of the Davids and the *Hunley*.

4.0.16 Explain the purpose of the Confederate privateers during

the Civil War.

4.0.17 Explain the role that Captain Semmes and the CSS *Alabama*

played in the Civil War.

4.0.18 Describe three major events that occurred during the

Battle of Mobile Bay.

4.0.19 Describe the naval amphibious assaults on Fort Fisher in

Wilmington, North Carolina, during the Civil War.

4.0.20 Explain the primary reason General Robert E. Lee was

forced to surrender.

4.0.21 Explain the changes to American life that occurred

during or as a result of the Civil War.

UNIT TITLE: 5.0 **THE RISE TO WORLD POWER STATUS 1865-1914**

UNIT OBJECTIVE: 5.0 The cadet will be expected to demonstrate knowledge of

the Navy’s role from The Rise to World Power Status

1865-1914.

LESSON TOPIC: 5.0 The Rise to World Status 1865-1914

ALLOTTED SESSIONS: 5

LESSON TOPIC OBJECTIVES:

* + 1. Describe the changes in foreign relations and technology

that affected the U.S. Navy following the Civil War.

* + 1. Describe the education and training programs that were

developed after the Civil War for the U.S. Navy.

* + 1. Describe five major contributions Alfred T. Mahan made

to modern navies.

* + 1. Explain how the United States rebuilt its Navy or

contributed to its expansion following the Civil War.

5.0.5 Explain American reaction to the sinking of the USS Maine

and the war preparations made by the United States before

the start of the Spanish-American War.

* + 1. Describe the (Operations in the Pacific) Battle of Manila

Bay during the Spanish-American War.

5.0.7 Describe the Caribbean Operations leading up to the

Battle of Santiago de Cuba.

B-1-5

5.0.8 Describe the advances in naval power and technology under

Theodore Roosevelt.

* + 1. Explain America’s international relations from 1903 until

until World War I.

5.0.10 Explain the difficulties and importance of building the

Panama Canal.

UNIT TITLE: 6.0 **WORLD WAR I, 1914-1918**

UNIT OBJECTUVE: 6.0 The cadet will be expected to demonstrate knowledge

of the Navy’s role from World War I, 1914-1918.

LESSON TOPIC: 6.0 World War I, 1914-1918

ALLOTTED SESSIONS: 5

LESSON TOPIC OBJECTIVES:

6.0.1 Recognize the Triple Entente and Central Powers.

6.0.2 Explain the war plans made by Great Britian and Germany

during World War I.

6.0.3 Describe actions taken by the German and the British

during the Pacific Action.

* + 1. Explain the significance of the battles of Jutland and

Gallipoli during World War I.

6.0.5 Explain the operational advantages of the German U-boats

over the Allies during World War I.

6.0.6 Explain the events that bought America into World War I.

* + 1. Explain the operation and significance of the convoy

system that was used by Great Britain during World War I.

* + 1. Describe the antisubmarine operations used by the U.S.

Navy during World War I.

6.0.9 Describe the role America played during World War I.

6.0.10 Briefly describe events leading up to the surrender of

Germany.

UNIT TITLE: 7.0 **The INTERWAR YEARS, 1918-1941**

UNIT OBJECTIVE: 7.0 The cadet will be expected to demonstrate an understanding

of the Interwar Years, 1918-1941

LESSON TOPIC: 7.0 The Interwar Years, 1918-1941

ALLOTTED SESSIONS: 4

LESSON TOPIC OBJECTIVES:

B-1-6

* + 1. Explain the conditions set forth in the Naval

Disarmament Treaty.

* + 1. Identify the dictatorships that grew out of the great

world depression.

7.0.3 Explain the condition of the U.S Navy during the pre-war

years.

7.0.4 Explain the final steps toward war in Europe.

7.0.5 Explain U.S isolationism/involvement from 1935 until the

United States declared war on Japan on 8 December 1941.

UNIT TITLE: 8.0  **WORLD WAR II: THE ATLANTIC WAR, 1941-1945**

UNIT OBJECTIVE: 8.0 The cadets will be expected to demonstrate the prescribed

movements in handling execution of the Sword Manual.

LESSON TOPIC: 8.0 World War II: The Atlantic War, 1941-1945

ALLOTTED SESSIONS: 4

LESSON TOPIC OBJECTIVES:

8.0.1 Explain the events that took place in Europe in 1939-1940.

8.0.2 Explain the importance of the Battle of the Atlantic.

8.0.3 Describe the first Allied offensive operation.

8.0.4 Explain the significance of the Battle of Stalingrad on

the Eastern Front.

* + 1. Cite the joint decisions made by Roosevelt and Churchill

at the Casablanca Conference.

* + 1. Describe the first major attempt by the Allies to take

the home territory of an Axis nation.

8.0.7 Describe the purpose of Operation Avalanche.

8.0.8 Explain the outcome of the battle of Anzio.

8.0.9 Explain why successful Allied air attacks in Operation

Overlord were essential to the success of the invasion

of Normandy.

8.0.10 Describe the major events of D-Day in Normandy.

8.0.11 Describe the major events of Operation Anvil: Invasion of

Southern France.

B-1-7

UNIT TITLE: 9.0 **WORLD WAR II: PACIFIC WAR, 1941-1945**

UNIT OBJECTIVE: The cadets will be expected to demonstrate an

understanding of naval history in the Pacific War from

1941-1945.

LESSON TOPIC: 9.0 World War II: Pacific War, 1941-1945

ALLOTTED SESSIONS: 4

LESSON TOPIC OBJECTIVES:

* + 1. Explain the events that led up to the Japanese attack

on Pearl Harbor.

9.0.2 Describe the state of U.S. military readiness during and

after the attack on Pearl Harbor.

9.0.3 Explain three miscalculations the Japanese made during

and following the attack on Pearl Harbor.

9.0.4 Describe the spread of Japanese control.

9.0.5 Describe Japan’s Pacific perimeter of defense.

* + 1. Explain the use of U.S. intelligence in establishing a

limited offensive to counter major Japanese moves.

* + 1. Cite two reasons the Battle of the Coral Sea was

important.

* + 1. Explain the significance of the Battle of Midway.
    2. Describe the battles of Guadalcanal.
    3. Explain the strategy of 1943: Continuous Pressure.
    4. Explain the submarine war in the Pacific.
    5. Describe the campaign against the giant Japanese base

at Rabaul.

9.0.13 Explain the importance of the operation: Leapfrog on

New Guinea.

9.0.14 Explain the importance of the operation: The Marianas

Operation: Saipan.

* + 1. Describe the battle of the Philippines Sea.
    2. Describe the Allied invasion of the Phillipines and its

significance.

9.0.17 Describe the condition of the Imperial Japanese Navy

following Battles for Leyte Gulf.

9.0.18 Describe the U.S. occupation of Iwo Jima and its logistic

significance.

B-1-8

* + 1. Describe the battle of Okinawa.

9.0.20 Explain the surrender of Japan as being a fight to the

bitter end.

UNIT TITLE: 10.0 **THE COLD WAR ERA, 1945-1991**

UNIT OBJECTIVE: 10.0 The cadets will be expected to demonstrate an

understanding of naval history from the Cold War Era,

1945-1991.

LESSON TOPIC: 10.0 The Cold War Era, 1945-1991

ALLOTTED SESSIONS: 8

LESSON TOPIC OBJECTIVES:

* + 1. Describe the views and events during the demobilization

periods.

10.0.2 Describe the events leading to the Cold War.

* + 1. Explain postwar views and actions in relation to the

unification of the armed services and provisions for

national security.

10.0.3 Explain postwar views and actions in relation to the

armed services and provisions for national security.

10.0.4 Describe the causes for implementation of the Truman

Doctrine and the Marshall Plan.

10.0.5 Describe the events leading to formation of the North

Atlantic Treaty Organization (NATO).

10.0.6 Describe postwar activities in the Far East in regard to

insurgencies, nationalism, and anticolonialism.

* + 1. Describe initial stages of the Korean War.
    2. Describe naval contributions in the Korean War.
    3. Describe the events involved with Operation Chromite:

Inchon.

* + 1. Describe the events involved in the Breakout at Pusan.

10.0.11 Describe the events involved in the Chinese Intervention

within the Korean War.

* + 1. Describe the events involved in the dismissal of General

Douglas MacArthur from all duties in the Far East.

10.0.13 Describe the events involved in the Truce Talks of the

Korean War and issues concerning prisoners.

10.0.14 Describe the major contributions naval sea power made

during the Korean War.

B-1-9

10.0.15 Describe naval confrontations in the post-Korean aftermath

and how these confrontations related to the U.S. Navy.

10.0.16 Describe the Navy’s movement into the nuclear age.

10.0.17 Describe major events in the Cuban missile crisis.

10.0.18 Describe the major events which led to the breakup of

Vietnam into North and South Vietnam.

10.0.19 Describe the U.S. involvement in the Tonkin Gulf incident in August of 1964.

10.0.20 Describe the U.S. expansion efforts in Vietnam 1967.

10.0.21 Describe the restrictions placed on military forces

stationed in Vietnam.

10.0.22 Describe the Vietnamization process established by the

United States.

10.0.23 Describe the major events that led to the end of the

Vietnam War.

10.0.24 Describe the events that were included in the Post-Vietnam

Modernization efforts.

10.0.25 Explain the Mayaguez incident that took place after the

last Americans left South Vietnam on May 12, 1975.

10.0.26 Describe the events that led to the Falklands War of 1982.

10.0.27 Describe the joint U.S. task force’s role in Grenada

during the fall of 1983.

10.0.28 Describe the role the United States played in restoring

democracy to Panama and the importance of Operation Just

cause to U.S. interests in Panama.

10.0.29 Describe the rise of terrorism worldwide with events

in the Middle East during the 1980’s.

10.0.30 Describe the major events that occurred between Iran

and Iraq in the Persian Gulf region.

10.0.31 Describe the great changes experienced by the Soviet Union

since 1985 and the rapid rise of the democratic movement

within the Soviet Union after the demolition of the

Berlin Wall.

UNIT TITLE: 11.0 **THE 1990’S AND BEYOND**

UNIT OBJECTIVE: 11.0 The cadet will demonstrate an understanding of

naval history from the 1990s and Beyond.

LESSON TOPIC: 11.0 The 1990s and Beyond

ALLOTTED SESSIONS: 4

B-1-10

LESSON TOPIC OBJECTIVES:

11.0.1 Describe the terms of START II signed by the U.S.

and Russia in 1993.

11.0.2 Describe the major events that occurred between Iran

and Iraq in the Persian Gulf region.

11.0.3 Describe the major events that occurred during both

operations Desert Shield and Desert Storm..

11.0.4 Describe some of the actions taken by the U.S. in the

aftermath of Desert Storm.

11.0.5 Describe the events that took place in the Balkans from

1991-1995.

11.0.6 Describe other problems that took place in the late 1990’s

and in December 2004 concerning Somalia,

India, Pakistan, China, and the seacoast of Indonesia.

11.0.7 Explain the U.S. efforts in the war on drugs during the

1990s

11.0.8 Describe international terrorist events that occurred in

the late 1990s and August 2000.

11.0.9 Describe the domestic terrorist events that occurred

in the late 1990s and September 11, 2001.

11.0.10 Explain the mission of Operation Enduring Freedom

in Afghanistan in 2001.

11.0.11 Explain the mission of Operation Iraqi Freedom that

began 17 March 2003.

11.0.12 Describe the challenging years facing our Navy.

# NAVAL LEADERSHIP

UNIT TITLE: 1.0 Naval Leadership

UNIT OBJECTIVE: 1.0 The cadet will be expected to study the principles of

effective leadership and the importance of discipline.

LESSON TOPIC: 1.1 Leadership in the NJROTC—and Elsewhere

ALLOTTED SESSIONS: 4

LESSON TOPIC OBJECTIVES:

1.1.1 Cite two advantages of unit leadership.

1.1.2 Explain the three things required for leadership positions

to exist.

1.1.3 Explain the relationship between good followership and good

leadership.

B-1-11

* + 1. Explain that personal relationships determine a

leader's overall effectiveness.

1.1.5 Describe at least ten essential qualities of an effective

leader.

UNIT TITLE: 1.0 Naval Leadership

UNIT OBJECTIVE: 1.0 The cadet will be expected to study the principles

of effective leadership and importance of discipline.

LESSON TOPIC: 1.2 Approaches to Leadership

ALLOTTED SESSIONS: 4

LESSON TOPIC OBJECTIVES:

1.2.1 Describe the importance of authority in the Navy.

1.2.2 Cite the differences between authority in civilian life and

authority in the military.

1.2.3 Explain the importance of self-discipline in both military

and civilian life.

1.2.4 Describe the requirements for discipline in unit drill

ceremonies.

1.2.5 Cite the major differences between a democratic style of

leadership and an autocratic style of leadership.

1.2.6 Cite five significant different approaches to leadership.

1.2.7 Describe four critical skills necessary for a leader to

communicate effectively.

UNIT TITLE: 1.0 Naval Leadership

UNIT OBJECTIVE: 1.0 The cadet will be expected to study the principles of

effective leadership and the importance of discipline.

LESSON TOPIC: 1.3 Influencing Behavior and Leadership

ALLOTTED SESSIONS 4

LESSON TOPIC OBJECTIVES:

1.3.1 Describe Maslow's theory as it relates to leadership.

1.3.2 Describe those methods Navy leaders use to increase the

motivational levels of naval personnel.

1.3.3 Describe those elements that contribute to good morale.

B-1-12

1.3.4 Cite eight of the general rules for building morale.

1.3.5 Describe three skills an effective leader uses when holding a

conversation with subordinates.

* + 1. Explain five important factors an effective leader must

remember about leadership.

B-1-13

SECTION C

MASTER COURSE SCHEDULE

Length of Sessions: 40 Minutes

-------------------------------------------------------------------------------

UNIT LESSON UNIT AND LESSON SESSIONS TOTAL SESSIONS

NUMBER NUMBER TITLE PER LESSON PER UNIT

-------------------------------------------------------------------------------

1.0.....................**Sea Power And Early Western Civilization..**.........4

2.0.....................**The American Revolution** ...........................4

3.0.....................**The Growth of American Sea Power 1783-1860**.........6

4.0.....................**The Civil War, 1861-1865**...........................6

5.0.....................**The Rise to World Power Status 1865-1914**...........5

6.0.....................**World War I, 1914-1918**.............................5

7.0.....................**The Interwar Years, 1918-1941**......................4

8.0......................**World War II: Atlantic War, 1941-1945**.............4

9.0......................**World War II: Pacific War, 1941-1945** .............4

10.0.....................**The Cold War Era**..................................8

11.0.....................**The 1990s and Beyond** .............................4

# NAVAL LEADERSHIP

1.1.....................**Leadership in the NJROTC-and Elsewhere............**4

1.2.....................**Approaches to Leadership..........................**4

1.3.....................**Influencing Behavior and Leadership**...............4

Total Number of Sessions.............66

C-1-1

SECTION D

COURSE STUDENT PERFORMANCE STANDARDS

Maritime History

After successfully completing this course, the student will:

**1**. **Be expected to demonstrate an understanding of how sea power influenced the**

**growth of Early Western Civilization**.

The student will:

* 1. describe the importance of sea control.
  2. explain how sea power evolved and its influence on the ancient world.
  3. describe the conflict between the Greeks and the Persians in 492 B.C.

1.04 describe the rise of the Roman Empire and its influence on civilization from

275 B.C. to 476 A.D.

1.05 explain how the Roman Empire was free to spread throughout the Mediterranean.

1.06 describe the fall of the Roman Empire and the subsequent thousand years of

turmoil that followed.

* 1. describe the events that caused the Turks to lose the Battle of Lepanto in

1571 and their control of the Mediterranean area.

1.08 describe the growth of the world during the Age of Discovery.

1.09 describe the conflict between England and Spain in 1570.

1.10 explain how the English defeated the Spanish Armada.

1.11 describe the methods used by England to build her empire in the 17th century.

**2**. **Have a understanding of how sea power influenced the growth of The American**

**Revolution**.

The student will:

* 1. describe the taxing system used by England on the colonies and the subsequent

events that led to the American Revolution.

* 1. explain the difficulties the British faced in fighting naval battles with

the colonies.

2.03 describe how the American Navy was born and the significance of building

the Navy.

2.04 cite the importance of the first American Naval operation against the English

Navy in the American Revolution.

* 1. explain the strategy General Benedict Arnold used at the battle of Lake

Champlain and the significance of the battle.

* 1. describe the tactics General George Washington used to save the colonial

capital at Philadelphia.

2.07 describe the failure of the British three-pronged plan during the Crucial

Year of 1777.

2.08 describe the two major events (turning point)of the battle of Saratoga and

the impact it had on the American Revolutionary War.

2.09 explain how naval power affected the outcome of the War at Sea.

2.10 explain France’s role in the Closing Campaigns of the war.

* 1. describe the events leading up to the battle of Yorktown and the subsequent

end of the fighting in the colonies.

**3**. **Demonstrate an understanding of the growth of American sea power from**

**1783-1860**.

The student will:

* 1. explain the reasons why the American economy suffered in 1783.

3.02 explain the changes the U.S. Constitution caused in the American industry.

3.03 cite the events surrounding the Navy Act of 1794.

* 1. explain the events during the quasi-war between America and France

(1798-1800).

D-1-1

3.05 explain why America began a war with Tripoli and the Barbary Pirates,

1801-1805.

* 1. explain how Commodore Preble gained respect in the Mediterranean.

3.07 cite the events surrounding the capture and destruction of the USS

Philadelphia.

3.08 explain the events leading up to the treaty with Tripoli.

3.09 cite the lessons America learned from the war with the Barbary States.

3.10 explain the events that led America toward war with England.

3.11 explain the events that surrounded the Chesapeake incident.

3.12 describe the events that led to the final moves toward war between

the United States and Britain.

3.13 describe the major sea battles between the American and the British

forces during the War of 1812.

3.14 cite other high sea battles that occurred during the War of 1812.

3.15 explain other major incidents where the British prevailed over

America’s sea vessels.

3.16 explain the importance in the U.S.’s victory of Lake Erie and its

effect on the Northwest territory.

3.17 cite the offensive maneuvers used by the British Navy during the War

of 1812.

3.18 describe the major events of the battle of New Orleans at the conclusion

of the war.

3.19 explain how sea power influenced the spread of Western Civilization and

the formative years of the new American republic.

3.20 explain the contribution the U.S. Navy made to the progress of world trade

between 1815 and 1860.

3.21 describe the rapid growth and subsequent decline of the American whaling

industry.

3.22 explain the rapid growth of the American shipbuilding industry.

3.23 explain American’s role in the slave trade.

3.24 explain the events that led to the beginning of the Mexican war and the

significance of the Treaty of Guadalupe Hidalgo.

3.25 describe the effects the clipper ships had on trade with China.

3.26 explain the purpose of Commodore Perry’s mission to Japan.

**4**. **Demonstrate a knowledge of the Civil War, 1861-1865.**

The student will:

* 1. describe how the issue of slavery divided the North and South and led to the

outbreak of the Civil War in 1861.

4.02 describe the major events that occurred during 1860-61 in America.

4.03 describe the resources of both the North and the South and the preparations

required to fight the Civil War.

4.04 describe the role of the Union Navy during the Civil War.

4.05 describe the acts of defeat and diplomacy used during the Civil War.

4.06 explain the importance of the river campaigns of the Civil War.

* 1. explain the significant events that took place during the Battle of New

Orleans.

4.08 describe the CSS *Virginia*(Formerly USS Merrimack)and the USS *Monitor*.

4.09 describe the major events that occurred during the Battle of Hampton

Roads.

4.10 describe how General Robert E. Lee was able to prolong the life of the

Confederacy after the Battle of Hampton Roads.

4.11 describe the Emancipation Proclamation as a significant psychological

move for the North in the Civil War.

4.12 describe the major events that occurred during the Battle of Vicksburg.

4.13 describe the Battle of Gettysburg as the turning point in the Civil War.

4.14 explain the role that Charleston played in the Civil War.

4.15 explain the purpose of the Davids and the *Hunley.*

4.16 explain the purpose of the confederate privateers during the Civil War.

D-1-2

4.17 explain the role that Captain Semmes and the CSS Alabama played in the

Civil War.

4.18 describe three major events that occurred during the battle of Mobile Bay.

4.19 describe the naval amphibious assaults on Fort Fisher in Wilmington,

## North Carolina, during the Civil War.

4.20 explain the primary reason General Robert E. Lee was forced to surrender.

* 1. explain the changes to American life that occurred during or as result of the

Civil War.

**5. Demonstrate knowledge of the Navy’s role from The Rise to World Power**

**Status 1865-1914**.

The student will:

* 1. describe the changes in foreign relations and technology that affected the

U.S. Navy following the Civil War.

* 1. describe the education and training programs that were developed after the

Civil War .

5.03 describe the five major contributions Alfred T. Mahan made to modern navies.

5.04 explain how the United States rebuilt its Navy or contributed to its

expansion following the Civil War.

* 1. explain American reaction to the sinking of the USS *Maine* and the war preparations made by the United States before the start of the Spanish-American War*.*

5.06 describe the(Operations in the Pacific)Battle of Manila Bay during the

Spanish-American War.

5.07 describe the Caribbean Operations leading up to the Battle of Santiago de

Cuba.

5.08 describe the advances in naval power and technology under Theodore Roosevelt.

5.09 explain America’s international relations from 1903 until World War I.

5.10 explain the difficulties and importance of building the Panama Canal.

**6**. **Be expected to demonstrate knowledge of the Navy’s role from World War I,**

**1914-1918.**

The student will**:**

* 1. recognize the Triple Entente and Central Powers.
  2. explain the war plans made by Great Britain and Germany during World War I.
  3. describe actions taken by the Germans and the British during the Pacific

Action.

* 1. explain the significance of the battles of Jutland and Gallipoli during

World War I.

* 1. explain the operational advantages of the German U-boats over the Allies

during World War I.

6.06 explain the events that brought America into World War I.

6.07 explain the operation and significance of the convoy system that was used by

Great Britain during World War I.

6.08 describe the antisubmarine operations used by the U.S. Navy during World War

I.

6.09 describe the role America played during World War I.

6.10 briefly describe events leading up to the surrender of Germany.

7. **Be expected to demonstrate an understanding of the Interwar Years, 1918-1941.**

The student will:

7.01 explain the conditions set forth in the Naval Disarmament Treaty.

7.02 identify the dictatorships that grew out of the great world depression.

7.03 explain the condition of the U.S. Navy during the pre-war years.

7.04 explain the final steps toward war in Europe.

7.05 explain U.S. isolationism/involvement from 1935 until the United States

declared war on Japan on 8 December 1941.

D-1-3

8. **Be expected to demonstrate an understanding of naval history of World War II,**

**1941-1945.**

The student will:

* 1. explain the events that took place in Europe in 1939-1940.

8.02 explain the events that led up to the Japanese attack on Pearl Harbor.

8.03 describe the state of U.S. military readiness during and after the attack on

Pearl Harbor.

* 1. explain three miscalculations the Japanese made during and following the

attack on Pearl Harbor.

8.05 explain the importance of the Battle of the Atlantic.

8.06 describe the first Allied offensive operation.

8.07 explain the significance of the Battle of Stalingrad on the Eastern Front.

* 1. cite the joint decisions made by Roosevelt and Churchill at the Casablanca

Conference.

8.09 describe the first major attempt by the Allies to take the home territory

of an Axis nation.

8.10 describe the purpose of Operation Avalanche.

8.11 explain the outcome of the battle of Anzio.

* 1. explain why successful Allied air attacks in Operation Overlord were

essential to the success of the invasion of Normandy.

8.13 describe the major events of D-Day in Normandy.

8.14 describe the major events of Operation Anvil: Invasion of Southern France.

9. **Be expected to demonstrate an understanding of naval history in the Pacific**

**War from 1941-1945.**

The student will:

9.01 explain the events that led up to the Japanese attack on Pearl Harbor.

* 1. describe the state of U.S. military readiness during and after the attack

on Pearl Harbor.

* 1. explain three miscalculations the Japanese made during and following the

attack on Pearl Harbor.

9.04 describe the spread of Japanese control.

9.05 describe Japan’s Pacific perimeter of defense.

9.06 explain the use of U.S. intelligence in establishing a limited offensive to

to counter major Japanese moves.

* 1. cite two reasons the Battle of the Sea Coral was important.
  2. explain the significance of the Battle at Midway.
  3. describe the battles for Guadalcanal.
  4. explain the strategy of 1943: Continuous Pressure.
  5. explain the submarine war in the Pacific.

9.12 describe the campaign against the giant Japanese base at Rabaul.

9.13 explain the importance of the operation: Leapfrog on New Guinea.

9.14 explain the importance of the operation: The Marianas Operation: Saipan.

9.15 describe the battle of the Philippines Sea.

9.16 describe the Allied invasion of the Philippines and its significance.

* 1. describe the condition of the Imperial Japanese Navy following Battles for

Leyte Gulf.

* 1. describe the U.S. occupation of Imo Jima and its logistic significance.
  2. describe the battle of Okinawa.
  3. explain the surrender of Japan as being a fight to the bitter end.

10. **Demonstrate an understanding of naval history from the Cold War Era,**

**1945-1991**.

The student will:

10.01 describe the views and events during the demobilization periods.

10.02 describe the events leading to the Cold War.

* 1. explain postwar views and actions in relation to the unification of the armed

services and provisions for national security.

* 1. describe the causes for implementation of the Truman Doctrine and

the Marshall Plan.

D-1-4

10.05 describe the events leading to formation of the North Atlantic Treaty

Organization (NATO).

10.06 describe postwar activities in the Far East in regard to insurgencies,

nationalism, and anticolonialism.

10.07 describe initial stages of the Korean War.

10.08 describe naval contributions in the Korean War.

10.09 describe the events involved with Operation Chromite: Inchon.

10.10 describe the events involved in the Breakout at Pusan.

10.11 describe the events involved in the Chinese Intervention within the

Korean War.

* 1. describe the events involved in the dismissal of General Douglas MacArthur

from all duties in the Far East.

10.13 describe the events involved in the exchange of prisoners.

10.14 describe the events involved in the exchange of prisoners.

10.15 describe the outcome of the Korean War in regard to naval participation,

U.S. government policy, global perspective, and Communist objectives.

10.16 describe naval confrontation in the post-Korean era.

10.17 describe the Korean post-war period as it related to the U.S. Navy.

10.18 describe the Navy’s movement into the nuclear age.

10.19 describe major events in the Cuban missile crisis.

10.20 describe the major events which led to the breakup of Vietnam into North and

South Vietnam.

* 1. describe the U.S. involvement in the Tonkin Gulf incident in August of 1964.
  2. describe the U.S. expansion efforts in Vietnam 1967.
  3. describe the restrictions placed on military forces stationed in Vietnam.
  4. describe the Vietnamization process established by the United States.
  5. describe the major events that led to the end of the Vietnam War.

10.26 describe the events that were included in the Post-Vietnam Modernization

10.27 explain the Mayaguez incident that took place after the last Americans left

South Vietnam on May 12, 1975.

* 1. describe the events that led to the Falklands War of 1982.
  2. describe the joint U.S. task force’s role in Grenada during the fall of 1983.
  3. describe the role the United States played in restoring democracy to Panama

and the importance of Operation Just Cause to U.S. interests in Panama.

* 1. describe the rise of terrorism worldwide with events in the Middle East

during the 1980s

* 1. describe the major events that occurred between Iran and Iraq in the

Persian Gulf region.

* 1. describe the great changes experienced by the Soviet Union since 1985 and the

rapid rise of the democratic movement within the Soviet Union after the

demolition of the Berlin Wall.

11. **Gain an understanding of naval history from The 1990s and Beyond.**

The student will:

* 1. describe the terms of START II signed by the U.S. and Russia in 1993.
  2. describe the major events that occurred between Iran and Iraq in the

Persian Gulf region.

* 1. describe the major events that occurred during both operations Desert Shield

and Desert Strom.

* 1. describe some of the actions taken by the U.S. in the aftermath of Desert

Storm.

11.05 describe the events that took place in the Balkans from 1991-1995.

11.06 describe the conflicts that took place in Somalia during the early 1990s.

* 1. describe other problems that took place in the late 1990s concerning India,

Pakistan, and China.

11.08 explain the U.S. efforts in the war on drugs during the 1990s.

11.09 describe international terrorist attacks against the U.S. during the late

1990s.

D-1-5

11.10 describe domestic terrorist events that occurred in the late 1990s and

September 11, 2001.

11.11 describe the challenging years facing our Navy.

NAVAL LEADERSHIP

1. **Demonstrate a understanding about principles of effective leadership and the**

**importance of discipline**.

The Student will:

* 1. cite two advantages of unit leadership
  2. explain the three things required for leadership positions to exist.
  3. explain the relationship between good followership and good leadership.
  4. explain how relationships determine a leader’s overall effectiveness.
  5. explain at least ten essential qualities of an effective leader.
  6. Describe the importance of authority in the Navy.
  7. cite the differences between authority in civilian life and authority in

the military.

* 1. describe the importance of self-discipline in both military and

civilian life.

* 1. describe the requirements for discipline in unit drill ceremonies.
  2. cite the major differences between a democratic style of leadership and

an autocratic style of leadership

* 1. cite five significant different approaches to leadership.
  2. describe four critical skills necessary for a leader to communicate

effectively.

* 1. describe Maslow’s theory as it relates to leadership.
  2. describe those methods Navy leaders use to increase the motivational

levels of naval personnel.

* 1. describe those elements that contribute to good morale.
  2. cite eight of the general rules for building morale.
  3. describe three skills an effective leader uses when holding a

conversation with subordinates.

* 1. explain five important factors an effective leader must remember

about leadership.

D-1-6

# SECTION E

**NJROTC TIME ALLOCATIONS**

**Total Hours Total Sessions**

**Classroom - Three days per week 72 108**

**drill - Two Days per week 48 72**

**---- ----**

**120 180**

**NOTE: The curriculum time allocation is based on 40-minute sessions of instruction for 36 weeks, with 180 teaching days. If the school schedule for classroom time other than 40 minutes in length, appropriate adjustments should be made at the local school level.**

**CONVERSION CHART - CLASS SESSIONS TO HOURS OF INSTRUCTION**

**Col. (1) Col. (2) Col. (3)**

**Length of Class Period Number of Classroom Number of Drills**

**in minutes Sessions Sessions**

**60 72 48**

**55 78 52**

**50 87 58**

**48 90 60**

**45 96 64**

**42 102 68**

**40 108 72**

**This program results in 120 class hours. Adjustments for staggered schedules,**

**rotating schedules, or modular schedules must be made at the local level.**

E-1-1

# SECTION F

# Videotapes

**No. PIN Number Title Minutes Lesson Number**

**1. PIN 20547 \* The War of Independence 1775-1783 21:00 2.0**

**2. PIN 20548 \* The Naval Wars with France & Tripoli 26:00 2.0**

**3. PIN 20549 \* The War of 1812 20:00 3.0**

**4. PIN 20550 \* World Wide Operations in Peace and 23:00 3.0**

**War-1815-1860**

**5. PIN 24974 Sea Power from Plymouth Rock to 28:00 3.0**

**Polaris**

**6. PIN 20551 \* History of the U.S Navy, Civil War, 19:00 5.0**

**Part I**

**7. PIN 20552 \* History of the U.S. Navy, Civil War, 19:00 5.0**

**Part II**

**8. PIN 20553 \* Naval Decline-The New Navy and The 20:00 5.0**

**War with Spain-1865-1898**

**9. PIN 24321 World War II Part I, Atlantic 20:00 8.0**

**Mediterranean Theater**

**10. PIN 24322 World War II Part II, Pacific 24:00 8.0**

**Pacific Theater**

**15. PIN 25338 The American Dreadnought 29:00 11.0**

**Note: Training videotapes identified with an asterisk (\*) have been distributed to**

**all NJROTC Units on a permanent basis. Replacement copies must be requested by email from NSTC supply via the area manager.**

**Note: Videotapes listed without an asterisk and additional DOD training media**

**are available, free of charge, from the following DOD database:**

**http://dodimagery.afis.osd.mil**

**(Click on DAVIS/DITIS)**

F-1-1

**SECTION G**

**INSTRUCTIONAL EQUIPMENT**

**1. One Pioneer videodisc player DVD-V7400 with remote control or equivalent per**

**classroom**

**2. Two 31’ television receivers per classroom**

**3. One Pioneer UC-V108BC barcode reader or equivalent (UC-V109BC) per classroom**

**4. One videotape VHS player**

**5. A computer-enhanced instructional system consisting of**

**an Energy Star Smart Terminal Base system: I/O BUS.32 bit**

**CPU (486DX2/66MHZ) Upgradable or Pentium, calendar/clock,**

**monitor, enhanced parallel port, two serial ports, local-bus**

**IDE controller, 1.4MB 3.5 disk drive, 16 BIT LAN card,**

**local-bus graphics accelerator, SGVA video card with 1MB**

**DRAM, DOS 6.2X Windows for Workgroups, 3.1X, mouse, chassis,**

**power supply, quiet key 101 keyboard.**

**Note: The software included with the above: the Microsoft Office**

**Professional Plus...includes Word 6.Oa, EXCEL 5.0a, PowerPoint**

**97, Access 2.0, Polaris Advantage installed.**

**6. One multimedia converter Aitech, model Multipro or equivalent**

# G-1-1

**SECTION H**

**CHARTS AND MAPS**

**Title Lesson Number**

**1. World Map 3.0**

**2. World/U.S. Map 4.0**

**3. World Map 5.0**

**4. World/U.S. Map 6.0**

**5. World/U.S. Map 7.0**

**6. U.S/World Map 8.0**

**7. U.S/World Map 9.0**

# H-1-1

**SECTION I**

**INSTRUCTOR MATERIALS**

**LESSON**

**NAVEDTRA NO. NUMBER TITLE**

**37138 NS-2 Naval History DVD Barcoded Instructor Guide**

**37139 NS-2 Naval History Manual DVD Barcode Manual Supplement**

**37137 NS-2 Naval History Curriculum Outline**

**None (on a CD) NS-2 Naval History Test Bank with Answer Keys**

**37140 NS-2 Naval History Note-taking Sheets**

**‘ 1.0 Sea Power and Early Western Civilization**

**‘ 2.0 The American Revolution**

**‘ 3.0 The Growth of American Sea Power, 1783-1860**

**‘ 4.0 The Civil War, 1861-1865**

**‘ 5.0 The Rise to World Power Status 1865-1914**

**‘ 6.0 World War I, 1914-1918**

**‘ 7.0 The Interwar Years, 1918-1941**

**‘ 8.0 World War II, 1941-1945**

**‘ 9.0 World War II: Pacific War, 1941-1945**

**‘ 10.0 The Cold War Era, 1945-1991**

**‘ 11.0 The 1990s and Beyond**

**‘ 1.0 NAVAL LEADERSHIP**

**‘ 1.1 Leadership in the NJROTC-and Elsewhere**

**‘ 1.2 Approaches to Leadership**

**‘ 1.3 Influencing Behavior and Leadership**

**7020LLDVD001A One Naval History (NS-2) DVD disc per classroom**

**Note: Includes the video material for the “ Naval**

**History”, Leadership and Nautical Sciences**

**book on this disc**

I-1-1

**SECTION J**

**REFERENCES:**

**NAVEDTRA 37116-E, NJROTC Naval History, A Maritime History for the NJROTC Student (5th Edition) Naval Service Training Command, August 2002.**

**Hobbs, Richard R., CDR, USNR (Ret), Naval History 5th ed, Naval Institute Press, Annapolis, 2002.**

**Conroy, Robert, Battle of Bataan: America’s Greatest Defeat LC 69-11294, (Battle**

**Book Ser)(Illus.), (gr.5-18) 1969, 4.95g (72429), MacMillan.**

**Baker, Leonard, Roosevelt and Pearl Harbor, LC 78-96447, 1970, 8.95 (50632), MacMillan.**

**Bonaventure and Vecchi, Month of Infamy December 1941, (Illus.), 1976, 12.95,**

**Venture Pubns.**

**Fukuchi, Nobreo, Nimitz-The Story of Pearl Harbor, 1975, 0.75 Adm**

**Nimitz Foun.**

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# SECTION A

**CURRICULUM FRAMEWORK**

**Nautical Sciences**

**A. Major concepts/content. This course is designed to engender a**

**sound understanding of maritime geography as it relates to our national resources,**

**landforms, climate, soil, bodies of water, people, governments, military, and geopolitics.**

**The content should include, but not be limited to the following:**

**-Maritime geography of the World Ocean: Western and Eastern Seas**

**-The significance of oceanographic study**

**-Meteorology and how it affects us**

**-Astronomy and how it pertains to our solar system and its related bodies:**

**Moon, Sun, Stars, and Planets**

**-Physical Science and its related forces: Motion, Force, and Aerodynamics**

1. **Intended outcomes. After successfully completing this course the student will:**
2. **Be knowledgeable of and explain the reasons for studying maritime geography.**

1. **Expand his/her knowledge of maritime geography as it relates to our natural**

**resources**

1. **Expand his/her knowledge of an understanding of the important significance of**

**oceanographic study**

**4. Expand his/her working knowledge of meteorology and how it affects us.**

1. **Expand his/her understanding of astronomy and how it pertains to our solar**

**system and its related bodies: Moon, Sun, Stars, and Planets**

1. **Be knowledgeable about and able to demonstrate an understanding of Physical**

**Science.**

# A-2-1

# SECTION B

**COURSE OBJECTIVES**

**UNIT TITLE: 1.0 Maritime Geography**

**UNIT OBJECTIVE: 1.0 The cadet will be expected to illustrate an understanding**

**of maritime geography as it relates to our national**

**resources, landforms, climate, soil bodies of water,**

**people governments, military, and geopolitics.**

**LESSON TOPIC: 1.1 Maritime Geography of the Western Seas**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**1.1.1. Explain three important reasons for the study of**

**geography.**

**1.1.2. Describe the subdivisions of the World Ocean.**

**1.1.3. Cite the importance of geography in military planning and**

**operations.**

* + 1. **Describe the Atlantic Ocean in terms of its economic and**

**strategic importance to the United States and its allies.**

* + 1. **Explain the importance of the Caribbean Sea and Gulf of**

**Mexico to the United States.**

* + 1. **Describe the Artic Ocean in terms of its economic and**

**strategic importance to the United States and its allies.**

* + 1. **Describe the Mediterranean Sea in terms of its economic**

**and strategic importance to the United States and its**

**allies.**

**LESSON TOPIC: 1.2 Maritime Geography of the Eastern Seas**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**1.2.1. Cite the importance of the Red Sea and the Gulf of Aden**

**to American interest.**

**1.2.2. Explain the role of the United States and its allies in**

**the Persian Gulf and the Gulf of Oman.**

**1.2.3. Describe the Indian Ocean in terms of its economic and**

**strategic value to the United States and its allies.**

# B-2-1

* + 1. **Describe the value of the Pacific Ocean to the United**

**States and its allies.**

**1.2.5 Describe the special features of the Antarctic Ocean.**

**UNIT TITLE: 2.0 Oceanography**

**UNIT OBJECTIVE 2.0 The cadet will be expected to demonstrate an understanding**

**of the significance of oceanographic study.**

**LESSON TOPIC: 2.1 Earth’s Oceanographic History**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**2.1.1 Explain four reasons for the great interest now being**

**shown in the world’s oceans.**

* + 1. **Describe those historical events that created the**

**great bodies of water.**

**2.1.3. Describe the continental drift theory.**

**2.1.4 Describe those great geological phenomena that occur**

**today as a result of our changing Earth.**

**LESSON TOPIC: 2.2 Undersea Landscapes**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**2.2.1. Explain methods used to explore the ocean floor.**

**2.2.2. Describe the benefits of the continental shelf.**

**2.2.3. Describe the make-up of the continental slope.**

**2.2.4. Explain the features of the deep ocean basin.**

**2.2.5. Describe the sediments found on the ocean floor.**

**LESSON TOPIC: 2.3 Seawater: Its Makeup and Movements**

**ALLOTTED SESSIONS: 4**

**LESSON TOPIC OBJECTIVES:**

* + 1. **Describe the chemical makeup of water.**

* + 1. **Explain the physical properties of water.**

B-2-2

* + 1. **Describe the composition of seawater.**

**2.3.4. Describe how water temperature is measured.**

**2.3.5. Describe environmental effects on the color of water.**

**2.3.6. Describe the causes of waves.**

**2.3.7. Describe how wave movement is measured.**

* + 1. **Cite the causes of beach and coastline erosion.**

**2.3.9. Describe the effects of wave power.**

**2.3.10. Cite the causes of ocean currents and gyres.**

**2.3.11. Describe the current movement in the Pacific Ocean.**

**2.3.12. Explain three effects of subsurface or countercurrents.**

**2.3.13. Explain the effects of the moon on our tides.**

**2.3.14. Describe the effects of tides on coastal areas.**

**2.3.15. Describe the theory of tidal energy.**

**LESSON TOPIC: 2.4 Life in the Seas**

**ALLOTTED SESSIONS: 3**

**LESSON TOPIC OBJECTIVES:**

**2.4.1. Describe how microscopic plant life is involved in the**

**ecological system of the oceans.**

**2.4.2. Cite the chain of natural events that occur in the food**

**cycle in the seas.**

**2.4.3. Describe life-sustaining characteristics of marine life at**

**the edge of the sea.**

**2.4.4. Describe the abundance of life in the shallow sea.**

**2.4.5. Describe the two major divisions of marine animals and**

**their characteristics.**

**2.4.6. Describe the effects of the open sea on man.**

**2.4.7. Cite Methods used to increase stocks of commercial fish.**

**2.4.8 Explain the marine “farming” method called Aquaculture.**

B-2-3

**2.4.9. Describe the biological phenomenon of sea noises created**

**by marine animals and its effect on antisubmarine**

**operations.**

**2.4.10 Describe the Bioluminescence of the sea at night and its**

**characteristics.**

**2.4.11.Describe how biological fouling and deterioration affect**

**the Navy’s annual budget.**

**2.4.12.Describe two categories of harmful marine animals that**

**pose a threat to man.**

**2.4.13.Describe the types of equipment used to improve man’s**

**capability to penetrate the sea.**

**2.4.14.Describe the six major groups of pollutants and their**

**effects on marine life.**

**UNIT TITLE: 3.0 Meteorology**

**UNIT OBJECTIVE 3.0 The cadet will be expected to demonstrate a working**

**knowledge of meteorology and how it affects us.**

**LESSON TOPIC: 3.1 Our Atmosphere**

**ALLOTTED SESSIONS: 4**

**LESSON TOPIC OBJECTIVES:**

**3.1.1. Describe the aspects of the science of weather.**

**3.1.2. Describe the significance of weather in history.**

**3.1.3. Describe the aspects of the Earth’s atmosphere.**

**3.1.4. Describe the meaning and characteristics of the**

**troposphere.**

**3.1.5. Describe the meaning and characteristics of the**

**tropopause.**

**3.1.6. Describe the meaning and characteristics of the**

**stratosphere.**

**3.1.7. Describe the meaning and characteristics of**

**the ionosphere.**

**3.1.8. Describe the meaning and characteristics of the**

**exosphere.**

**3.1.9. Describe the aspects of atmospheric pressure.**

**3.1.10.Describe the fundamentals in making the weather.**

B-2-4

**3.1.11.Explain the aspects in measuring temperature.**

**3.1.12.Describe the aspects in measuring relative humidity**

**and dew point.**

**LESSON TOPIC: 3.2 Clouds and Fog**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**3.2.1. Describe the factors associated with cloud formation.**

* + 1. **Describe cloud classifications as they relate to cloud**

**types, altitudes, classes, and overall appearance.**

**3.2.3. Describe the three types of low clouds and their**

**characteristics.**

**3.2.4. Describe the two types of middle clouds.**

**3.2.5. Describe the three types of high clouds found in our**

**atmosphere.**

**3.2.6. Describe the factors associated when clouds are at sea.**

**3.2.7. Explain the formation of rain.**

**3.2.8. Describe modern rainmaking techniques.**

**3.2.9. Describe the cloud factors associated with the formation**

**of snow, sleet, hail, frost, and dew.**

**3.2.10. Describe the process of how fog is formed on the Earth’s**

**surface as well as hazards in relation to fog formation.**

**LESSON TOPIC: 3.3 Wind and Weather**

**ALLOTTED SESSIONS: 3**

**LESSON TOPIC OBJECTIVES:**

**3.3.1. Describe the conditions that cause wind**

**movements.**

**3.3.2. Describe the effect of the Earth’s rotation on**

**wind movement.**

**3.3.3. Describe the characteristics of prevailing winds**

**around the Earth.**

**3.3.4. Describe the effects of the Earth’s revolution**

**and inclination movement on our weather patterns.**

B-2-5

**3.3.5. Describe the secondary wind circulation patterns**

**on the Earth.**

**3.3.6. Describe the characteristics of high-pressure**

**areas.**

**3.3.7. Describe the characteristics of low-pressure**

**areas.**

**3.3.8 Describe the characteristics of mountain winds.**

**3.3.9. Describe the characteristics of valley-wind**

**systems.**

**3.3.10.Describe the type of monsoons in Southeast Asia.**

**3.3.11.Describe the Beaufort Scale and how it is used.**

**LESSON TOPIC: 3.4 Fronts and Storms**

**ALLOTTED SESSIONS: 3**

**LESSON TOPIC OBJECTIVES:**

**3.4.1. Describe the development of weather fronts.**

**3.4.2. Describe the primary frontal zones: Intertropical**

**Convergence Zone, Arctic Frontal Zone, and Polar**

**Frontal Zone.**

**3.4.3. Describe the characteristics of a cold front.**

**3.4.4. Describe the characteristics of a warm front.**

**3.4.5. Describe the characteristics of an occluded front.**

* + 1. **Describe the formations, characteristics, and**

**developmental stages of a thunderstorm.**

**3.4.7. Describe the weather phenomena within the**

**thunderstorm.**

**3.4.8. Describe the characteristics and formation of the**

**tornado.**

**3.4.9. Describe the characteristics and categories associated**

**with tropical cyclones.**

**3.4.10. Describe the birth and characteristics of the hurricane.**

**3.4.11. Describe the characteristics of hurricanes, typhoons and**

**their tracks.**

**3.4.12. Describe the signs of an approaching tropical cyclone.**

B-2-6

**3.4.13. Describe the purpose and function of Storm Warning**

**Signals.**

**3.3.14. Describe the purpose and function of the Hurricane**

**Warning System.**

**LESSON TOPIC: 3.5 Weather Forecasting**

**ALLOTTED SESSIONS: 1**

**LESSON TOPIC OBJECTIVES:**

**3.5.1. Describe the function and structure of the National**

**Weather Service.**

**3.5.2 Describe the function of the Navy Weather Service.**

**3.5.3. Describe the forecasting services the National Weather**

**Service provides.**

**3.5.4 Describe the purpose of weather satellites.**

**3.5.5 Describe the service weather maps and charts provide to**

**navigators.**

**UNIT TITLE: 4.0 Astronomy**

**UNIT OBJECTIVE 4.0 The cadet will be expected to demonstrate understanding of**

**astronomy and how it pertains to our solar system and its**

**related bodies: Moon, Sun, stars, and planets.**

**LESSON TOPIC: 4.0 Astronomical Observations**

**ALLOTTED SESSIONS: 3**

**LESSON TOPIC OBJECTIVES:**

**4.1.1. Explain the theories of the creation of the**

**universe.**

4.1.2. List the methods for astronomical observation.

**4.1.3. Describe the methods for using the telescope.**

**4.1.4. Identify the types of telescopes.**

**4.1.5. Identify the methods for using the spectrum.**

**4.1.6. Explain the discovery and development of the**

**radio telescope.**

**4.1.7. Explain the special uses of the radio telescope**

**and give its purpose.**

B-2-7

**4.1.8. Identify the methods for using balloon**

**observatories.**

**4.1.9. Describe examples of satellites and other exploratory**

**spacecraft.**

**4.1.10. Explain the efforts in exploring the Solar System.**

**4.1.11. Explain the important events in the field of astronomy and**

**space exploration in the next 20 years.**

**LESSON TOPIC: 4.2 The Moon**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**4.2.1. Recognize basic facts about the Moon such as size, distance**

**from Earth, and atmosphere.**

**4.2.2. Describe the geographical structure of the Moon.**

**4.2.3. Describe the surface features of the Moon.**

**4.2.4. Explain those theories that describe Moon craters and**

**their formations.**

**4.2.5. Describe the mountain ranges and rilles on the surface**

**of the Moon.**

**4.2.6. Explain the effect moonquakes have on the Moon.**

**4.2.7. Describe how the Moon's motion causes its phases.**

**4.2.8. Explain the basic reasons for Moon exploration.**

**LESSON TOPIC: 4.3 The Sun**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**4.3.1. Explain the basic facts about the Sun, and its**

**relationship to the Earth.**

**4.3.2. Describe the composition of the Sun.**

* + 1. **Explain sunspots and the effects they have on the**

**Earth's atmosphere.**

**4.3.4. Explain the effects the Sun has on the Earth's magnetic**

**field.**

B-2-8

**4.3.5 Describe the effects the Sun’s energy has on the Earth.**

**4.3.6 Explain the importance of developing solar energy systems.**

* + 1. **Explain the missions for further observations of the Sun**

**that has been launched in recent years.**

**LESSON TOPIC: 4.4 The Planets**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**4.4.1. Describe the solar system in which we live.**

**4.4.2. Identify the major characteristics of the planet Mercury.**

**4.4.3. Describe special features of Venus as it relates to our**

**solar system.**

**4.4.4. Describe the major features of Mars.**

**4.4.5. Identify the principal characteristics of Jupiter.**

**4.4.6. Describe the prime features of Saturn and explain how it**

**differs from other planets in our solar system.**

* + 1. **Describe the chief characteristics of Uranus.**

**4.4.8. Describe the relationship of Neptune and Uranus.**

**4.4.9. Identify the unique features of Pluto.**

**4.4.10 Describe the new planet called Planet X.**

**LESSON TOPIC: 4.5 Asteroids, Comets, and Meteors**

**ALLOTTED SESSIONS: 1**

**LESSON TOPIC OBJECTIVES:**

**4.5.1. Identify the asteroid belt as it relates to our solar**

**system.**

**4.5.2. Describe the composition of comets and their movement.**

* + 1. **Identify the difference between meteoroids, meteors, and**

**meteorites.**

B-2-9

**LESSON TOPIC: 4.6 The Stars**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

* + 1. **Explain the theory adopted as the common unit of**

**astronomical distances.**

**4.6.2. Explain the system to used to classify stars.**

**4.6.3. Describe the method used for determining a star's**

**brightness.**

**4.6.4. Explain the life cycle of a star.**

**4.6.5. Explain the terms used to identify temporary stars**

**from 134 B.C. to the present.**

**4.6.6. Describe the three Nebulae stars and their makeup.**

**4.6.7. Describe the binaries and star clusters.**

**4.6.8. Describe the characteristics of our galaxy and the three**

**ways other galaxies are classified according to their**

**shapes.**

**UNIT TITLE: 5.0 Physical Science**

**UNIT OBJECTIVE: 5.0 The cadet will be expected to demonstrate a understanding**

**of Physical Science.**

**LESSON TOPIC: 5.1 Motion, Force, and Aerodynamics**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**5.1.1. Describe the two main topics in the field of physical**

**science.**

**5.1.2. Describe the six steps in the scientific method approach.**

**5.1.3. Describe the differences in a theory and a law.**

**5.1.4. Describe Newton’s three laws of motion.**

**5.1.5. Discuss Bernoulli’s theorem.**

**5.1.6. Explain how Mach numbers are derived.**

B-2-10

**LESSON TOPIC: 5.2 Buoyancy**

**ALLOTTED SESSIONS: 2**

**LESSON TOPIC OBJECTIVES:**

**5.2.1. Describe Archimedes Law.**

**5.2.2. Explain how objects float.**

**5.2.3. Explain how a submarine floats and submerges.**

**5.2.4. Explain stability in a ship and its importance.**

**LESSON TOPIC: 5.3 Basic Electricity**

**ALLOTTED SESSIONS: 4**

**LESSON TOPIC OBJECTIVES:**

**5.3.1. Describe the fundamental theory of electricity.**

**5.3.2. Describe the properties of conductors and insulators.**

**5.3.3. Describe the six common methods of producing voltage.**

**5.3.4. Describe battery construction and significant**

**characteristics.**

**5.3.5. Explain the principle of electrical circuits.**

**5.3.6. Describe Ohm’s Law as it relates to current, voltage and**

**resistance.**

**5.3.7. Discuss the electrical power theory.**

**LESSON TOPIC: 5.4 Electronics**

**ALLOTTED SESSIONS: 3**

**LESSON TOPIC OBJECTIVES:**

**5.4.1. Discuss the two kinds of waves by types: Mechanical**

**and Electromagnetic.**

**5.4.2. Describe the Propagation effects: Refraction, Diffraction,**

**and Trapping.**

**5.4.3. Describe the principles of radio-frequency wave**

**transmission**

**5.4.4. Describe the principles of radar.**

B-2-11

**5.4.5. Describe the use of radar used by the Navy**

**as a navigational aid.**

**5.4.6. Explain the uses for Electronic warfare (EW) in combat.**

**situations.**

**LESSON TOPIC: 5.5. Sound and Sonar**

**ALLOTTED SESSIONS: 3**

**LESSON TOPIC OBJECTIVES:**

**5.5.1. Explain the effects that density and temperature have**

**on sound.**

**5.5.2. Explain how the ear detects sound.**

**5.5.3. Describe Doppler shift.**

**5.5.4. Explain the characteristics of sound in seawater.**

**5.5.5. Describe Sonar and its characteristics.**

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**SECTION C**

**MASTER COURSE SCHEDULE**

**Length of Sessions: 40 Minutes**

**-------------------------------------------------------------------------------**

**UNIT LESSON UNIT AND LESSON SESSIONS TOTAL SESSIONS**

**NUMBER NUMBER TITLE PER LESSON PER UNIT**

**-------------------------------------------------------------------------------**

**1.0.....................Maritime Geography...............................4**

**1.1.......Maritime Geography of the Western..2**

**Seas**

**1.2.......Maritime Geography of the Eastern..2**

**Seas**

**2.0.....................Oceanography......................................11**

**2.1.......Earth’s Oceanography History.......2**

**2.2.......Undersea Landscapes................2**

**2.3.......Seawater: Its Makeup and...........4**

**Movements**

**2.4.......Life in the Seas...................3**

**3.0.....................Meteorology.......................................13**

**3.1.......Our Atmosphere.....................4**

**3.2.......Clouds and Fog.....................2**

**3.3.......Wind and Weather...................3**

**3.4.......Fronts and Storms..................3**

**3.5.......Weather Forecasting................1**

**4.0.....................Astronomy........................................12**

**4.1.......Astronomical Observations..........3**

**4.2.......The Moon...........................2**

**4.3.......The Sun............................2**

**4.4.......The Planets........................2**

**4.5.......Asteroids, Comets, and Meteors.....1**

**4.6.......The Stars..........................2**

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**5.0.....................Physical Science.................................14**

**5.1.......Motion, Force, and Aerodynamics.....2**

**5.2.......Buoyancy............................2**

**5.3.......Basic Electricity...................4**

**5.4.......Electronics.........................3**

**5.5.......Sound and Sonar.....................3**

**Total Number of Sessions.... 54**

C-2-2

**SECTION D**

**COURSE STUDENT PERFORMANCE STANDARDS**

**Nautical Sciences**

**After successfully completing this course, the student will:**

**1. Be expected to demonstrate an understanding of maritime geography as it**

**relates to our national resources, land forms, climate, soil, bodies of**

**water, people, governments, military, and geopolitics.**

**The student will:**

**1.01 explain three important reasons for the study of geography.**

**1.02 describe the subdivisions of the World Ocean.**

**1.03 cite the importance of geography in military planning and operations.**

**1.04 describe the Atlantic Ocean in terms of its economic and strategic**

**importance to the United States and its allies.**

**1.05 explain the importance of the Caribbean Sea and the Gulf of Mexico to the**

**United States and its allies.**

**1.06 describe the Artic Ocean in terms of its economic and strategic importance to**

**the United States and its allies.**

**1.07 describe the Mediterranean Sea in terms of its economic and strategic**

**importance to the United States and its allies.**

**1.08 be able to cite the importance of the Red Sea and the Gulf of Aden to**

**American interest.**

**1.09 describe the role of the United States and its allies in the Persian Gulf**

**and the Gulf of Oman.**

* 1. **describe the Indian Ocean, and the Pacific Ocean in terms of its economic**

**and strategic value to the United States and its allies.**

**1.11 describe the value of the Pacific Ocean to the Untied States and its allies.**

**1.12 describe the special features of the Antarctic Ocean.**

**2. Have a understanding of the significance of oceanographic study.**

**The student will:**

**2.01 cite four reasons why great interest now being shown in the world’s**

**oceans.**

**2.02 describe the historical events that created the great bodies of water.**

**2.03 describe the continental drift theory.**

**2.04 describe the great geological phenomena that occur today as a result of our**

**changing earth.**

**2.05 explain the methods used to explore the ocean floor.**

**2.06 describe the benefits of the continental shelf.**

**2.07 describe the make-up of the continental slope.**

**2.08 describe the features and the sediments found on the basin floor.**

**2.09 explain the chemical make-up and physical properties of water.**

**2.10 describe the composition of seawater.**

**2.11 describe environmental effects on the color of water and how**

**water temperature is measured.**

**2.12 describe the causes of waves and how wave movement is measured.**

**2.13 cite the causes of beach and coastline erosion.**

**2.14 describe the effects of wave power and causes of ocean currents and gyres.**

**2.15 describe the current movement in the Pacific Ocean.**

**2.16 explain the three effects of subsurface or countercurrents and the**

**effects the moon has on our tides.**

**2.17 describe the effects of tides on coastal areas.**

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**2.18 describe how microscopic plant life is involved in the ecological system**

**2.19 describe the theory of tidal energy of the oceans.**

**2.20 cite the chain of natural events that occur in the food cycle in the seas.**

**2.21 describe life-sustaining characteristics of marine life at the edge of the**

**sea and the abundance of life in the shallow sea.**

**2.22 describe the two major divisions of marine animals and their characteristics.**

**2.23 describe the effects of the open sea on man as well as the biological**

**phenomenon of sea noises created by marine animals and its effect on**

**antisubmarine operations.**

**2.24 cite methods used to increase stocks of commercial fish.**

**2.25 describe how biological fouling and deterioration affect the Navy’s**

**annual budget.**

* 1. **describe four categories of harmful marine animals that pose a threat to man**

**and explain the types of equipment used to improve man’s capability to**

**penetrate the sea.**

**2.27 describe the six major groups of pollutants and their effects on marine life.**

**3. Demonstrate a working knowledge of meteorology and how it affects us.**

**The student will:**

**3.01 describe the aspects of the science of weather**

**3.02 describe the significance of weather in history.**

**3.03 describe the aspects of the Earth’s atmosphere.**

**3.04 describe the meaning and characteristics of the troposphere, tropopause,**

**stratosphere, ionosphere, and exosphere.**

**3.05 describe the aspects of atmospheric pressure.**

**3.06 describe the fundamentals in making weather.**

**3.07 describe the aspects in measuring temperature, relative humidity,**

**and dew point.**

**3.08 describe the factors associated with cloud formation, define**

**cloud classifications as they relate to cloud types, altitudes, classes,**

**and overall appearance.**

* 1. **describe the characteristics of three types of low clouds, two types of**

**middle clouds and three types of high clouds .**

**3.10 describe the factors associated when clouds are at sea.**

**3.11 explain the formation of rain and modern rainmaking techniques.**

**3.12 describe the cloud factors associated with the formation of snow, sleet,**

**hail, frost, and dew.**

* 1. **describe the process of how fog is formed on the Earth’s surface as well**

**as hazards in relation to fog formation.**

**3.14 describe the conditions that cause wind movements and the effect of the**

**Earth’s rotation on wind movement.**

**3.15 describe the characteristics of prevailing winds around the Earth.**

**3.16 describe the effects of the Earth’s revolution and inclination movement**

**on our weather patterns.**

**3.17 explain the secondary wind circulation patterns on the Earth.**

**3.18 describe the characteristics of high-pressure and low-pressure areas.**

**3.19 describe the characteristics of mountain winds and valley-wind systems.**

**3.20 describe the type of monsoons in Southeast Asia.**

**3.21 describe the Beaufort Scale and how it is used.**

**3.22 describe the development of weather fronts.**

**3.23 describe the primary frontal zones: Intertropical Convergence Zone, Arctic**

**Frontal Zone, and Polar Frontal Zone.**

* 1. **describe the characteristics of a cold front, warm front, and**

**occluded front.**

**3.25 describe the formations, characteristics, and developmental stages of a**

**thunderstorm as well as weather phenomena within the thunderstorm.**

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**3.26 describe the characteristics and formation of the tornado.**

**3.27 describe the characteristics and categories associated with tropical**

**cyclones.**

* 1. **describe the birth, characteristics and tracks of hurricanes, and typhoons.**

**3.29 describe the signs of an approaching tropical cyclone.**

**3.30 explain the purpose and function of Storm Warning Signals and**

**the Hurricane Warning System.**

* 1. **describe the function and structure of the National Weather Service.**
  2. **describe the function of the Navy Weather Service.**

**3.33 explain the forecasting services the National Weather Service provides.**

**3.34 describe the purpose of weather satellites.**

**3.35 explain the service weather maps and charts provide to navigators.**

1. **Demonstrate a understanding of astronomy and how it pertains to our**

**solar system and its related bodies: Moon, Sun, stars and planets.**

**The student will:**

**4.01 explain the theories of the creation of the universe.**

**4.02 list the methods for astronomical observation.**

**4.03 identify the three types of telescopes and the methods for using**

**the telescope.**

**4.04 identify the methods for using the spectrum.**

**4.05 explain the discovery, development, special uses and purposes of the**

**radio telescope.**

**4.06 identify the methods for using balloon observatories.**

**4.07 describe the examples of satellites and other exploratory spacecraft.**

**4.08 explain the efforts in exploring the Solar System.**

**4.09 explain the important events in the field of astronomy and space exploration**

**in the next 20 years.**

**4.10 recognize basic facts about the Moon such as size, distance from Earth, and**

**atmosphere.**

**4.11 describe the geographical structure surface features of the Moon.**

**4.12 explain those theories that describe Moon craters and their formations.**

**4.13 describe the mountain ranges and rilles on the surface of the Moon and the**

**effect moonquakes have on the Moon.**

**4.14 describe how the Moon’s motion causes it phases.**

**4.15 explain the basic reasons for Moon exploration.**

**4.16 explain the basic facts about the Sun, and its relationship to the Earth.**

**4.17 describe the composition of the Sun.**

**4.18 explain sunspots and the effects they have on the Earth’s atmosphere.**

**4.19 explain the effects the Sun has on the Earth’s magnetic field and the Sun’s**

**energy has on the Earth.**

* 1. **explain the importance of developing solar energy systems and the missions**

for further observations of the Sun that has been launched in recent years.

**4.21 describe the solar system in which we live.**

**4.22 identify the major characteristics of the planet Mercury and describe**

**features of Venus as it relates to our solar system.**

* 1. **describe the major features of Mars and identify the principal**

**characteristics of Jupiter**

**4.24 describe the prime features of Saturn and explain how it differs from other**

**planets in our solar system.**

**4.25 describe the chief characteristics of Uranus and the relationship of Neptune**

**and Uranus.**

**4.26 Identify the unique features of Pluto.**

**4.27 Identify the asteroid belt as it relates to our solar system.**

**4.28 describe the composition of comets and their movement.**

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**4.29 identify the difference between meteoroids, meteors, and**

**meteorites**

**4.30 explain the theory adopted as the common unit of astronomical**

**distances.**

**4.31 explain the system used to classify stars and the method used for**

**determining a star’s brightness.**

* 1. **explain the life cycle of a star and the terms used to identify**

**temporary stars from 134 B.C. to the present.**

* 1. **describe the three Nebulae stars and their makeup.**
  2. **describe the binaries and star clusters.**
  3. **describe the characteristics of our galaxy and the three ways other**

**galaxies are classified according to their shapes.**

**5. Demonstrate a understanding of Physical Science.**

**The student will:**

**5.01 describe the two main topics in the field of physical science.**

**5.02 describe the six steps in the scientific method approach**

**5.03 describe the differences in a theory and a law.**

**5.02 describe Newton’s three laws of motion and Bernoulli’s theorem.**

**5.03 describe explain how MACH numbers are derived.**

**5.04 describe Archimedes Law.**

**5.05 explain how objects float and how a submarine floats and submerges.**

**5.06 explain stability in a ship and its importance.**

**5.07 describe the properties of conductors and insulators.**

**5.08 describe the six common methods of producing voltage.**

**5.09 explain battery construction and significant characteristics.**

* 1. **explain the principle of electrical circuits and how Ohm’s Law relates**

**to current voltage and resistance.**

**5.11 discuss the electrical power theory.**

**5.12 discuss the two kinds of waves by types: Mechanical and Electromagnetic.**

**5.13 discuss the Propagation effects: Refraction, Diffraction, and Trapping.**

**5.14 discuss the principles of radio-frequency wave transmission.**

**5.15 describe the principles of radar and the use of radar as a navigational**

**aid.**

**5.16 describe the uses for Electronic warfare (EW) radar in combat situations.**

**5.17 explain how the effects that density and temperature have on sound and**

**how the ear detects sound.**

* 1. **describe Doppler shift.**
  2. **explain the characteristics of sound in seawater.**
  3. **describe sonar and its characteristics.**

# D-2-4

**SECTION E**

**NJROTC TIME ALLOCATIONS**

**Total Hours Total Sessions**

**Classroom - Three days per week 72 108**

**drill - Two Days per week 48 72**

**---- ----**

**120 180**

**NOTE: The curriculum time allocation is based on 40-minute sessions of instruction for 36 weeks, with 180 teaching days. If the school schedule for classroom time other than 40 minutes in length, appropriate adjustments should be made at the local school level.**

**CONVERSION CHART - CLASS SESSIONS TO HOURS OF INSTRUCTION**

**Col. (1) Col. (2) Col. (3)**

**Length of Class Period Number of Classroom Number of Drills**

**in minutes Sessions Sessions**

**60 72 48**

**55 78 52**

**50 87 58**

**48 90 60**

**45 96 64**

**42 102 68**

**40 108 72**

**This program results in 120 class hours. Adjustments for staggered schedules,**

**rotating schedules, or modular schedules must be made at the local level.**

E-2-1

# SECTION F

**Videotapes**

**No. PIN Number Title Minutes Lesson Number**

**1. PIN 806639 Fleet Numerical A National 9:00 1.1**

**Asset**

**2. PIN 29265 Know Your Clouds 16.00 3.2**

**3. PIN 25488 Meteorology-Hurricanes 25:00 3.4**

**4. PIN 25489 \* Meteorology-Thunderstorm 27:00 3.4**

**Formations**

**5. PIN 27503 Air Masses and Fronts-The 11:00 3.4**

**Warm Front**

**6. PIN 27504 Air Masses and Fronts-The 8:00 3.4**

**Occluded Front**

**7. PIN 35795 The Quest 27:00 3.5**

**8. PIN 23641 Elementary Electricity Series 7:00 5.3**

**9. PIN 24109 The Electron Theory 5.00 5.3**

**10. PIN 24110 How Magnets Produce 3:00 5.3**

**Electricity**

**11. PIN 805008 Shipboard Electrical Safety 13:00 5.3**

**12. PIN 804074 NARAD-The Quiet Ship-Key 9:00 5.5**

**To Survival 9:00**

**Note: Training videotapes identified with an asterisk (\*) have been distributed**

**to all NJROTC Units. Replacement copies must be requested from NSTC supply via the area manager.**

**Note: Videotapes listed without an asterisk and additional DOD training media**

**is available, free of charge, from the following DOD database:**

**http://dodimagery.afis.osd.mil**

**(Click on DAVIS/DITIS)**

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# SECTION G

**INSTRUCTIONAL EQUIPMENT**

**1. One Pioneer videodisc player DVD-V7400 with remote control or equivalent per**

**classroom**

**2. Two 31” television receivers per classroom**

**3. One Pioneer UC-V108BC barcode reader or equivalent (UC-V109BC) per classroom**

**4. One videotape VHS player**

**5. A computer-enhanced instructional system consisting of**

**an Energy Star Smart Terminal Base system: I/O BUS.32 bit**

**CPU (486DX2/66MHZ) Up gradable or Pentium, calendar/clock,**

**monitor, enhanced parallel port, two serial ports, local-bus**

**IDE controller, 1.4MB 3.5 disk drive, 16 BIT LAN card,**

**local-bus graphics accelerator, SGVA video card with 1MB**

**DRAM, DOS 6.2X Windows for Workgroups, 3.1X, mouse, chassis,**

**power supply, quiet key 101 keyboard.**

**Note: The software included with the above: the Microsoft Office**

**Professional Plus...includes Word 6.Oa, EXCEL 5.0a, PowerPoint**

**97, Access 2.0, Polaris Advantage installed.**

**6. One multimedia converter Aitech, model Multipro or equivalent**

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**SECTION H**

**CHARTS AND MAPS**

**Title Lesson Number**

**1. 3-505.21C, Charts 2.3**

**Tides, Wind Currents, (24x30),**

**1,3, & 6**

**2. Astrological Map 4.5**

**3. World Map 5.0**

H-2-1

**SECTION I**

**INSTRUCTOR MATERIALS**

**LESSON**

**NAVEDTRA NO. NUMBER TITLE**

**37138 Maritime History and Nautical Sciences DVD Barcoded**

**Instructor Guide**

**37139 Maritime History and Nautical Sciences Manual DVD Barcode**

**Manual Supplement**

**37137 Maritime History and Nautical Sciences Curriculum Outline**

**None (on a CD) Maritime History and Nautical Sciences Test Bank with**

**Answer Keys**

**37140 Maritime History and Nautical Note-taking Sheets**

**‘ 1.0 Maritime Geography**

**‘ 2.0 Oceanography**

**‘ 3.0 Meteorology**

**‘ 4.0 Astronomy**

**‘ 5.0 Physical Science**

**7020LLDVD001A One Maritime History and Nautical Sciences DVD disc**

**per classroom**

**Note: Includes the video material for the “Maritime**

**History, Leadership and “Nautical Sciences book on this**

**Disc**

# I-2-1

# SECTION J

**REFERENCES:**

**Hobbs, Richard R., CDR, USNR (Ret), Maritime History and Nautical Sciences**

**for the NJROTC Student, 1st ed, Naval Institute Press, Annapolis, 2002.**

I-2-2