**CURRICULUM OUTLINE**

**FOR THE**

### **NAVAL JUNIOR RESERVE OFFICER TRAINING CORPS**

## **NAVAL SCIENCE 3**

**Naval Knowledge, Leadership and Nautical Skills**

**Prepared By**

**Naval Education and Training Command**

### **Pensacola, Florida**

### **August 2010**

**NAVEDTRA 37138**

### **0509 LP-101-0735**

 RECORD OF CHANGE

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

| Change Number | Date of Change | Date Entered | Entered by |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_|\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

|

| | | | |

ii

GOALS AND OBJECTIVES 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

 iii

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. The

 standard for all cognitive objectives will be set by each senior naval science

 instructor (SNSI), based on local guidelines.

 Task analysis for the NS-3 Naval Knowledge and Naval Skills manual, was

 accomplished by the Naval Junior Reserve Officers Training Corps (NJROTC) staff,

 Pensacola, Florida, under the guidance of the Naval Education and Training

 Command(NETC),using the Jury of Expert method and questionnaires.

 Appropriate modifications will be left to the discretion of SNSIs.

 iv

TABLE OF CONTENTS

 Page

Record of Changes........................................... ii

Goals and Objectives of the NJROTC Program.................. iii

Preface..................................................... iv

# Naval Knowledge

Section A - Curriculum Framework............................ A-1

Section B - Course Objectives................................ B-1

Section C - Course Master Schedule.......................... C-1

Section D - Course Student Performance Standards............ D-1

Section E - NJROTC Time Allocations......................... E-1

Section F - Videos.......................................... F-1

Section G - Instructional Equipment ........................ G-1

Section H - Charts and Maps................................. H-1

Section I – Instructor Materials .......................... I-1

Section J - References...................................... L-1

# Naval Skills

Section A - Curriculum Framework............................ A-1

Section B - Course Objectives................................ B-1

Section C - Course Master Schedule.......................... C-1

Section D - Course Student Performance Standards............ D-1

Section E - NJROTC Time Allocations......................... E-1

Section F - Videos.......................................... F-1

Section G - Instructional Equipment ........................ G-1

Section H - Charts and Maps................................. H-1

Section I – Instructor Materials .......................... I-1

Section J - References...................................... L-1

V

SECTION A

CURRICULUM FRAMEWORK

Naval Science 3

1. Major concepts/content. The purpose of this course is to further develop the understanding and importance of sea power and national security, naval operations and support functions, militry law, interantional law and the sea and naval leadership.

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

 -sea power and national security

 -naval operations, and support functions

 -military law, discipline and punishment

 -fundamentals of international law and the sea

 -naval leadership

 B. Intended outcomes. After successfully completing this course

 the student will:

 1. Investigate the role of Sea Power and National Security.

 2. Expand the understanding and knowledge of Naval Operations,

 and Support Functions.

 3. Obtain a basic knowledge of Military Law, Discipline and

 Punishment.

 4. Have a working knowledge of the fundamentals of international

 law, the international law of the sea, the law of war at sea

 and collective security.

1. Demonstrate knowledge of the challenge of leadership, the qualities of an

effective leader, how to evaluate performance and give instruction.

 6. Demonstrate confidence and proficiency in basic individual,

 squad, and company close-order drill. Understand and

 interpret the components of physical fitness.

1. Special note. The sixth intended outcome is not an academic component of

 the NJROTC curriculum similar to the previous four intended outcomes.

 Demonstrating confidence and proficiency in basic individual squad, company

 close-order drill is a laboratory activity consisting of 72 hours of drill,

 commands ceremonies, rotation of command, regular personnel inspections,

 parade in company review, and personal physical fitness training.

A-1-1

SECTION B

COURSE OBJECTIVES

UNIT TITLE: 1.0 Sea Power and National Security

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

 understanding of the international law as

 it applies to countries using the sea.

LESSON TOPIC: 1.1 The Importance of Sea Power

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 1.1.1 Define the importance of sea power as it

 relates to America.

 1.1.2 Describe four major developments since

 World War II that have increased

 the importance of the oceans of the world.

 1.1.3 Describe the strategic ocean areas.

 1.1.4 Describe the fourfold mobility we

 gain from the sea.

 1.1.5 Describe the purpose and function of the

 United States Merchant Marine and the relationship

 between maritime commerce and the economy of

 the United States.

 1.1.6 Explain the importance of ocean research to

 the United States.

 1.1.7 Describe the vital role oceans will play

 in the future of mankind.

LESSON TOPIC: 1.2 The U.S. Merchant Marine

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 1.2.1 Give a historical view of the United States

 merchant marine from 1850s to the present.

 1.2.2 Describe national policy as it related to the merchant

 marine acts.

 1.2.3 Describe the impact of waterborne commerce.

B-1-1

 1.2.4 Describe the types of merchant ships.

 1.2.5 Describe the auxiliary function ofthe U.S.

 merchant marine in national defense.

 1.2.6 Explain the merchant marine's role in supporting

 our military forces in both peace and war.

 1.2.7 Describe the merchant marine's role in carrying

 strategic materials and energy resources which

 support the civilian economy and the defense

 production of our nation.

 1.2.8 Explain the direct support the merchant marine

 provides to some military operations.

 1.2.9 Identify the auxiliary combatant role of merchant

 ships.

 1.2.10 Describe the role of the merchant marine in support

 of foreign policy.

 1.2.11 Describe the future of the merchant marine.

 SESSON TOPIC: 1.3 Grand Strategy

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 1.3.1 Define national, grand, and military strategy.

 1.3.2 Name the major strategists from 400 B.C. to the

 mid-nineteenth century.

 1.3.3 Describe the three classic schools of strategy.

 1.3.4 Explain preparedness as it relates to grand strategy.

 1.3.5 Describe the three phases of the evolution of U.S. grand

 strategy.

 1.3.6 Describe the concepts of massive retaliation and flexible

 response as they relate to U.S. grand strategy.

 1.3.7 Describe the three principle elements of today’s national

 military strategy.

 1.3.8 Explain the anticipated future strategic trends.

B-1-2

LESSON TOPIC: 1.4 U.S. Strategy and the Navy

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 1.4.1 Describe the two basic functions of the U.S. Navy.

 1.4.2 Explain the three functional roles of the Navy

 within national military strategy.

 1.4.3 Differentiate between tactics and strategy.

 1.4.4 Describe modern tactical innovations.

 1.4.5 Describe the capabilities the U.S. naval force must have

 if it is to be able to support national strategy.

 1.4.6 Describe the Navy’s fundamental and supportive

 tactical warfare tasks.

 1.4.7 Describe the two categories of major tactical naval ships.

LESSON TOPIC: 1.5 National Security and Modern Conlfict

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 1.5.1 Explain the major concerns and elements used to

 evaluate national strategy.

1.5.2 Describe the nine principles of war that govern

war fighting strategy and tactics.

 1.5.3 Explain the following forms of modern armed

 conflict: general war, revolutinary war, and terrorism.

 1.5.4 List the possible causes of general war.

 1.5.5 Describe the prerequisites for revolution.

B-1-3

UNIT TITLE 2.0 Naval Operations and Support Functions.

UNIT OBJECTIVE: 2.0 The Cadet will be expected to demonstrate knowledge

 of the major organizations of the Navy, and how

 communicating among naval units is accomplished,

 the value of good intelligence, and the need to

 protect that intelligence.

LESSON TOPIC: 2.1 Naval Operations

 ALLOTTED SESSIONS: 5

 LESSON TOPIC OBJECTIVES:

 2.1.1 Describe naval task force organization.

 2.1.2 Describe the naval command and control organization.

 2.1.3 Define strike and strike group in the context of naval

 striking forces.

 2.1.4 Describe the missions of the carrier strike forces.

 2.1.5 Describe the modern carrier strike group (CSG).

 2.1.6 Describe naval surface action groups.

 2.1.7 Describe fleet aviation organization.

 2.1.8 Describe air warfare.

 2.1.9 Describe surface warfare.

 2.1.10 Describe submarine warfare.

 2.1.11 Describe undersea warfare.

 2.1.12 Describe amphibious warfare.

 2.1.13 Describe the principle objectives for amphibious

 operation.

 2.1.14 Describe information warfare.

 2.1.15 Describe space warfare.

LESSON TOPIC: 2.2 Naval Communications

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 2.2.1 Describe the major functions of naval

 telecommunications.

 2.2.2 Describe the major telecommunications commands

 under the Chief Of Naval Operations (CNO).

B-1-4

 2.2.3 Cite ways in which electronic equipment has

 aided in communication.

 2.2.4 Explain the purpose of International Morse Code.

 2.2.5 Describe the advantages of visual communication.

 2.2.6 Describe the various sound and pyrotechnic

 signaling devices.

LESSON TOPIC: 2.3 Naval Intelligence

 ALLOTTED SESSIONS: 5

 LESSON TOPIC OBJECTIVES:

* + 1. Provide general definition of intelligence.

 2.3.2 Describe the roles that planning and direction,

 collection, processing, analysis and production

 and disseminating play in the intelligence cycle

 process.

 2.3.3 Discuss the types of intelligence, to include

 naval intelligence and air intelligence.

 2.3.4 Describe the makeup of the U.S. intelligence

 community.

 2.3.5 Describe the Central Intelligence Agency(CIA).

 2.3.6 Describe the Federal Bureau of Investigation (FBI).

 2.3.7 Describe the Department of Homeland Security (DHS).

 2.3.8 Describe Department of Defense (DoD)Intelligence Agencies.

 2.3.9 Describe the role of the Office of Naval

 Intelligence (ONI).

 2.3.10 Describe the basis of foreign intelligence organizations.

 2.3.11 Describe the roles of spies and diplomats in espionage

 operations.

 2.3.12 Define counterintellingence.

 2.3.13 List three different security classifications.

 2.3.14 Explain the purposes of security clearnaces.

 2.3.15 Explain the consequences of security breaches.

B-1-5

 LESSON TOPIC: 2.4 Navy Logistics

 ALLOTTED SESSIONS: 2

 LESSON TOPIC OBJECTIVES:

 2.4.1 Describe the Navy's logistics supply and

 services system that began during World War I.

 2.4.2 Describe the principles of logistics that come into play

 in logistics planning at all levels.

 2.4.3 Describe the six functioal areas of logistics.

 2.4.4 Explain the following four elements of logistics:

 acquisition, distribution, sustainment, and disposition.

 2.4.5 Describe logistics in modern warfare.

LESSON TOPIC: 2.5 Navy Research and Development

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 2.5.1 Describe the Research and Development (R&D) program of

 the Department of Defense (DoD).

 2.5.2 Describe the management of the Navy’s R&D program.

* + 1. Explain the role of the Office of Naval Research (ONR) in

 naval research and development .

 2.5.4 Describe the role of the Naval Research Laboratory

 (NRL)in naval research development.

* + 1. Describe the objectives of the naval oceanographic

 research program.

 2.5.6 Describe the current research and development

 projects.

B-1-6

UNIT TITLE: 3.0 Military Law

UNIT OBJECTIVE: 3.0 The cadet will be expected to demonstrate

 an understanding of military justice, and how

 it relates to the navy.

LESSON TOPIC: 3.1 Introduction to Military Law

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 3.1.1 Explain the history of law codes as it

 pertains to the Navy.

 3.1.2 Describe the relationship between the U.S.

 Constitution and military law.

 3.1.3 Define Navy Regulations.

 3.1.4 Describe important Navy regulations.

 3.1.5 Explain the purpose of the Uniform Code of Military

 Justice (UCMJ).

 3.1.6 Cite the composition of the UCMJ articles.

LESSON TOPIC: 3.2 Discipline and Punishment

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 3.2.1 Describe the procedures for applying

 discipline and punishment in the Navy.

 3.2.2 Describe the process of apprehension, arrest,

 restriction, and confinement used in

 the Navy.

 3.2.3 Describe the procedures for initiating

 and preferring charges on enlisted personnel

 aboard a U.S. Navy ship or shore station.

 3.2.4 Describe the procedure for preliminary

 investigation leading to captain's mast.

* + 1. Cite two basic classes of official naval disciplinary

actions.

* + 1. Describe the features of nonjudicial punishment.
		2. Cite the three types of military courts-martial.
		3. Explain the method for reviewing courts-martial.

B-1-7

* + 1. Describe the relationship between civil jurisdiction

and military justice.

* + 1. Cite the methods used for disciplinary separations from

the service.

UNIT TITLE: 4.0 International Law and the Sea

UNIT OBJECTIVES: 4.0 The cadet will demonstrate an understanding of

 international law as it applies to countries

 using the sea.

LESSON TOPIC: 4.1 Fundamentals of International Law

 ALLOTTED SESSIONS: 2

 LESSON TOPIC OBJECTIVES:

 4.1.1 Identify the United States' role in international

 relationships.

 4.1.2 Explain the purpose of international law and

 diplomacy.

 4.1.3 Describe the history of diplomacy as it relates to

 International law and the sea.

 4.1.4 Describe the sources of international law which

 binds independent nations together.

 4.1.5 Identify three specific characteristics sovereign

 nations have in common.

 4.1.6 Identify the rights and duties of sovereign

 states under International Law.

 4.1.7 Describe the process of diplomatic recognition.

 4.1.8 Describe the guidelines pertinent to military and naval

 attaches under international law.

 4.1.9 Describe how international problems are solved through

 the effective use of international law.

 4.1.10 Describe the concept of collective security.

 4.1.11 Describe the United Nations (UN).

 4.1.12 Describe international,regional, and collective

 arrangements recognized by the UN.

 4.1.13 Describe modern collective security trends and the issues

 that revolve around such trends.

B-1-8

 LESSON TOPIC: 4.2 International Law of the Sea

 ALLOTTED SESSIONS: 2

 LESSON TOPIC OBJECTIVES:

 4.2.1 Explain the customs and treaties from 1604

 to the present which relate to the international

 law of the sea.

 4.2.2 Identify the main ideas which have

 formed customary international law of the

 sea.

 4.2.3 Describe the four possible adverse impacts of

 international legal rules affecting the

 deployment and navigation of naval vessels.

 4.2.4 Explain the increase of sovereign territorial

 sea jurisdiction.

 4.2.5 Describe the potential hardships for the U.S.

 Navy in straits and many scattered islands

 around the world.

 4.2.6 Explain the controversy over where internal

 bays and gulfs end and where territorial seas

 begin.

 4.2.7 Describe how international law deals with

 rivers, lakes, and canals.

 4.2.8 Explain the law of the high seas.

 4.2.9 Describe the economic zone problems.

 4.2.10 Describe policies on territorial self-defense

 and rights concerning fisheries.

 4.2.11 Explain the international law on the

 continental shelf and seabeds of the world.

 LESSON TOPIC: 4.3 The Law of War at Sea

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 4.3.1 Describe the international law as it relates

 to warships.

 4.3.2 Explain the general rules of war on land and

 at sea.

B-1-9

 4.3.3 Describe war at sea and the effects war has

 on international law.

 4.3.4 Describe the methods used to enforce laws

 of war.

 UNIT TITLE: 1.0 Leadership

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

 of the challenge of leadership, the qualities of an

 effective leader, how to evaluate the performance of

 subordinates, and how to give instruction.

 LESSON TOIC: 1.1 The Challenge of Leadership

 ALLOTTED SESSIONS: 1

 LESSON TOPIC OBJECTIVES:

* + 1. Describe the basis for effective leadership.

1.1.2 Explain the differences in philosophies of

 leadership.

* + 1. Explain the importance of obedience.
		2. Describe obedience in the military services.
		3. Describe the legal and moral obligations of military leaders.

 LESSON TOPIC: 1.2 Qualities of a Leader

 ALLOTTED SESSIONS: 2

 LESSON TOPIC OBJECTIVES:

 1.2.1 Differentiate between moral responsibility and legally

 enforceable laws.

 1.2.2 Define loyalty.

 1.2.3 Define devotion to duty

 1.2.4 Describe professional knowledge and experience.

 1.2.5 Explain the importance of self-confidence.

 1.2.6 Describe the value of initiative and ingenuity in

 the military services.

 1.2.7 Comapre courage to moral courage.

 1.2.8 Explain the importance of a leader’s ability to

 organize and make decisions.

B-10

 1.2.9 Describe the importance of leading by personal

 example.

 1.2.10 Explain why mutual trust and confidence are important

 aspects of effective leadership.

 1.2.11 Describe what is appropriate conduct whenever

 wearing a military uniform.

 1.2.12 Describe the importance of discipline and self-

 discipline to effective leadership.

 1.2.13 Explain the importance of using consistency whenever

 conducting disciplinary action.

 1.2.14 Explain the consequence each leader faces when he or

 she loses control of his or her temper.

 1.2.15 Describe why it is vital for leaders to get to know

 the people working for them.

 1.2.16 Describe freindship versus familiarity.

 1.2.17 Define fratenization and sexual harassment.

 LESSON TOPIC: 1.3 Evaluation of Performance

 ALLOTTED SESSIONS: 1

 LESSON TOPIC OBJECTIVES:

 1.3.1 Define performance, ability, aptitude, and

 achievement.

 1.3.2 Describe evaluation in the NJROTC.

 1.3.3 Explain goal setting as it relates to self-evaluation.

 1.3.4 Explain progress assessment as it relates to self-

 evaluation.

 1.3.5 Describe the process of self-evaluation.

 LESSON TOPIC: 1.4 How to Give Instruction

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 1.4.1 Describe what learning theory is.

 1.4.2 List the major factors that influence learning.

 1.4.3 Describe the conditions that tend to hinder learning.

B-11

 1.4.4 Explain how to prepare a lesson plan, the site where

 instruction will occur, and yourself as an instructor.

 1.4.5 List the commonly used techniques for delivery of

 instruction.

 1.4.6 Describe the advantages and disadvantages of the

 lecture technique for presenting information.

 1.4.7 Describe the main steps of the lecture procedure for

 delivering instruction.

 1.4.8 Describe the advantages and disadvantages of the

 lecture with audiovisuals technique for presenting

 information.

 1.4.9 Describe the main steps of the lecture with

 audiovisuals procedure for delivering instruction.

 1.4.10 Describe the advantages and disadvantages of the

 demonstration technique for presenting informaiton.

 1.4.11 Describe the main steps of the demonstration

 procedure for delivering instruction.

 1.4.12 Describe the advantages and disadvantages of the role

 playing instructional technique.

 1.4.13 Describe the advantages and disadvantages of the case

 study instructional technique.

 1.4.14 Describe the advantages and disadvantages of the

 discussion instructional technique.

 1.4.15 Describe the advantages and disadvantages of the

 cooperative learning instructional technique.

B-12

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 National Security....................15

1.1.......The Importance of Sea Power......3

1.2.......The U.S Merchant Marine .........3

1.3.......Grand Strategy,..................3

1.4.......U.S. Strategy and The Navy.......3

1.5.......National Security and Modern.....3

Conflict

2.0......................Naval Operations, and,............................23

Support Functions

2.1......Naval Operations.................5

2.2......Naval Communications.............3

2.3......Naval Intelligence ..............5

2.4......Navy Logistics.................. 2

2.5......Navy Research and Development....3

3.0......................Military Justice.................................6

3.1......Introduction to Military Law.....3

3.2......Discipline and Punishment........3

4.0......................International Law and The Sea....................7

4.1......Fundamentals of International...2

Law

 4.2......International Law of the Sea....2

 4.3......The Law of War at Sea...........3

C-1-1

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.....................Leadership....................8

1.1.......The Challenge of Leadership......1

1.2.......Qualities of a Leader ...........2

1.3.......Evaluation of Performance .......1

1.4.......How To Give Instruction..........4

 C-1-2

SECTION D

COURSE STUDENT PERFORMANCE STANDARDS

Naval Science 3

After successfully completing this course, the student will:

**1. Investigate the role of sea power and national security.**

 **The student will:**

1.01 define the importance of sea power as it relates to America.

1.02 describe four major developments since World War II have increased

 the importance of the oceans of the world.

1.03 describe the strategic ocean areas.

1.04 describe the mobility of sea power.

1.05 describe the purpose and function of the United States Merchcant Marine and

 the relationship between maritime comerce and the economy of the United

 States.

1.06 explain the importance of oceanography to the United States.

1.07 describe the vital role oceans will play in the future of humankind.

1.08 give a historical view of the United States merchant marine from the 1850s

 to the present.

1.09 describe national policy as it related to the merchant marine acts.

1.10 describe the impact of waterborne commerce.

1.11 describe the types of merchant ships.

1.12 describe the auxiliary function of the U.S. meerchant marine in

 national defense.

1.13 explain the merchant marine’s role in supporting our military forces in

 both peace and war.

1.14 describe the merchant marine’s role in carrying strategic materials and

 energy resources which support the civilian economy and the defense

 production of our nation.

* 1. explain the direct support the merchant marine provides to some

 military operations.

1.16 identify the auxiliary combatant role of merchant ships.

1.17 describe the role of the merchant marine in support of foreign policy.

1.18 describe the future of the merchant marine. \

1.19 define national, grand, and military strategy.

1.20 name the major strategists from 400 B.C. to the mid-nineteenth century.

1.21 describe the three classic schools of strategy.

1.22 explain preparedness as it relates to grand strategy.

1.23 describe the three phases of the evolution of U.S. grand strategy.

1.24 describe the concepts of massive retaliation and flexible response as they

 relate to U.S. grand strategy.

* 1. describe the three principle elements of today’s national military strategy.
	2. explain the anticipated future strategic trends.

1.27 describe the two basic functions of the U.S. Navy.

1.28 explain the three functional roles of the Navy within national military

 strategy.

1.29 differentiate between tactics and strategy.

1.30 describe modern tactical innovations.

1.31 describe the capabilities the U.S. naval force must have if it is to be able

 to support national strategy.

1.32 describe the Navy’s fundamental and supportive tactical warfare tasks.

1.33 describe the two categories of major tactical naval ships.

1.34 explain the major concerns and elements used to evaluate national stragegy.

1.35 describe the nine principles of war that govern war fighting strategy and

 tactics.

D-1-1

1.36 explain the following forms of modern armed conflict: general war, limited

 war, revolutionary war, and terrorism.

1.37 list the possible causes of general war.

1.38 describe the prerequisites for revolution.

**2. Expand the understanding and knowledge of naval operations,**

 **and support functions.**

 **The student will:**

2.01 describe naval task force organization.

2.02 describe the naval command and control organization.

2.03 define strike and strike group in the context of naval striking forces.

2.04 describe the missions of the carrier strike forces.

2.05 describe the modern carrier strike group (CSG). .

2.06 describe naval surface action groups.

2.07 discuss the fleet aviation organization.

2.08 define air warfare.

2.09 define surface warfare.

2.10 define submarine warfare.

2.11 describe undersea warfare.

2.12 describe amphibious warfare.

2.13 describe the principle objectives for amphibious operations.

2.14 define information warfare.

2.15 describe space warfare.

2.16 describe the major functions of naval telecommunications.

2.17 describe the major telecommunications commands under the

 Chief of Naval Operations (CN0).

2.18 cite ways in which electronic equipment has aided in communication.

2.19 explain the purpose of International Morse Code.

2.20 describe the advantages of visual communication.

2.21 describe the various sound and pyrotechnic signaling devices.

2.22 provide a general definition of intelligence.

2.23 describe the makeup of the U.S. intelligence community.

2.24 describe the basis of foreign intelligence organizations.

2.25 describe the roles of spies and diplomats in espionage operations.

2.26 define counterintelligence.

2.27 list the three different security classifications.

2.28 explain the purposes of security clearances.

2.29 explain the consequences of security breaches.

2.30 explain the principles and elements of logistics that come into play in

 logistics planning at all levels.

* 1. describe the Research and Development (R&D) program of the

 Department of Defense (DoD).

* 1. describe the management of the Navy’s R&D program.
	2. Explain the role of the Office of Naval Research (ONR) in naval research and development.
	3. describe the role of the Naval Research Laboratory (NRL) in naval

 research and development.

* 1. describe the objectives of the naval oceanographic research
	2. describe the current advanced research and development project areas.

**3. Have a broad, basis knowledge of military law, discipline and**

 **punishment and nonjudicial punishment and courts-martial.**

 **The student will:**

3.01 explain the history of law codes as it pertains to the Navy .

3.02 describe the relationship between the U.S. Constitution and military law.

3.03 define Navy Regulations.

3.04 describe important Navy regulations.

3.05 explain the purpose of the Uniform Code of Military Justice (UCMJ).

3.06 cite the composition of the UCMJ articles.

D-1-2

3.07 define the process of apprehension, arrest, restriction, and

 confinement used in the Navy.

3.08 explain the process of initiating and preferring charges on the

 enlisted personnel aboard a U.S. Navy ship or shore station.

3.09 explain the procedures for preliminary investigation leading

 to a captain's mast.

3.10 cite two basic classes of official naval disciplinary actions.

3.11 explain the purpose of nonjudicial punishment, and give examples

 of typical outcomes.

3.12 cite the three types of military courts-martial.

3.13 explain the method for reviewing couts-martial

3.14 explain the relationship between civil jurisdiction and military justice.

3.15 cite the methods used for disciplinary separation from the services.

**4. Have a working knowledge of the fundamentals of international**

 **law and the sea.**

 **The student will:**

4.01 discuss the need for international law and identify the

 five principal bases of the law.

4.02 cite the three sources of law which bind nations in a

 contractual manner, and its effect on the sovereignty of a nation.

4.03 interpret how the U.S. Constitution regards international treaties.

4.04 state factors that the U.S. considers necessary before it will grant

 diplomatic recognition to any state.

4.0 discuss the meaning of belligerency insurgency, and counterinsurgency

 as it relates to international law, and the far-reaching effects

 these terms have on the world community of nations and their respective

 armed forces.

4.06 discuss territorial sea, and boundary establishment of the high

 seas and international rivers between independent nations.

4.07 discuss the impact of the law of the sea on straits,

 archipelagoes, gulfs, bays, rivers, lakes, canals, and seas.

4.08 differentiate between territorial sea and the economic zone problems.

4.09 discuss the law of ships and the general rules of war on land

 and sea.

**Naval Leadership**

**5. Have a knowledge of the challendge of leadership, the qualities of an**

 **effective leader, how to evaluate performance of subordinates, and how to**

 **give instruction.**

 **The student will:**

* 1. describe the basis for effective leadership.
	2. explain the differences in philosophies of leadership.
	3. explain the importance of obedience.
	4. describe obedience in the military services.
	5. describe the legal and moral obligations of military leaders.
	6. differentiate between moral responsibility and legally enforceable laws.
	7. define and explain loyalty, devotion to duty, professional knowledge and
	8. experience and the importance of self-confidence.
	9. describe the value of initiative and ingenuity in the military services.
	10. compare courage to moral courage.
	11. explain the importance of a leader’s ability to organize and to make decisions.
	12. describe the importance of leading by personal example.
	13. explain why mutual trust and confidence are important aspects of effective

leadership.

D-1-3

1.14 describe what is appropriate conduct whenever wearing a military uniform.

1.15 describe the importance of discipline and self-discipline to effective

 leadership.

1.16 explain the importance of using consistency whenever conducting disciplinary

 action.

* 1. 7 explain the consequences each leader faces when he or she loses control of his

 or her temper.

* 1. describe why it is vital for leaders to get to know the people working for

 them.

* 1. describe friendship versus familiarity.
	2. define fraternization and sexual harassment.
	3. define performance, ability, apitude, and achievement.
	4. describe evaluation in the NJROTC.
	5. explain goal setting as it relates to self-evaluation.
	6. describe the process of self-evaluation.
	7. describe what learning theory is.
	8. list the major factors that influence learning.
	9. describe the conditions that tend to hinder learning.
	10. explain how to prepare lesson plan, the site where instruction will occur,

and yourself as an instructor.

* 1. list the commonly used techniques for delivery of instruction.
	2. describe the advantages and disadvantages of th electure technique for

presenting information.

* 1. describe the main steps of the lecture procedure for delivering instruction.
	2. describe the advantages of the lecture with audiovisuals technique for

presenting information.

* 1. describe the main steps of the lecture with audiovisuals procedure for

delivering instruction.

* 1. describe the advantages and disadvantages of the demonstration technique for

presenting information.

* 1. describe the main steps of the demonstration procedure for delivering

 instruction.

* 1. describe the advantages and disadvantages of the role playing instructional

technique.

* 1. describe the advantages and disadvantages of the case study instructional

 technique.

* 1. describe the advantages and disadvantages of the discussion instructional

 technique.

* 1. describe the advantages and disadvantages of the cooperative learning

 instructional technique.

D-1-2

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.

Unit 10 (appendix unit) exceeds the total number of classroom hours stated

above by 17 hours/sessions. The use if this unit is at the discretion of

the NSI.

 E-1-1

SECTION F

POWER POINT PRESENTATIONS

1. Use the Power Point Presentations provided for NS-3 which is located on the

 NJROTC Naval Science 3 DVD.

F-3-1

SECTION G

 INSTRUCTIONAL EQUIPMENT

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

 classroom

2. Chalkboard or dry erase board and equipment.

3. Three Personal Computer (PC) with peripherals (as provided)

4. Liquid Crystal Display (LCD) projector

 \* One per classroom

5. Naval Science 3 (NS3) Digital Video Disk (DVD)

6. Classroom Performance System (CPS) with remote controls.

 \* One per classroom

7. One CD/Tape Cassette Player

 \* One per classroom

8. One multimedia converter Aitech, model Multipro or equivalent per classroom.

Note: Computer systems and software will most likely be refereshed at least every

 four years.

G-1-1

SECTION H

CHARTS AND MAPS

 Title Lesson Number

 1. World/ U.S Map/Globe 1.1

 2. World/ U.S. Map/Globe 1.2

 3. World/ U.S. Map/Globe 1.3

 4. World/ U.S. Map/Globe 1.4

 5. World/ U.S. Map/Globe 1.5

 6. World/ U.S. Map/Globe 1.6

 7. World/ U.S. Map/Globe 2.1

 8. World/ U.S. Map/Globe 2.2

 9. World/ U.S. Map/Globe 2.3

 10. World/ U.S. Map/Globe 2.4

 11. World/ U.S. Map/Globe 2.5

 12. World/ U.S. Map/Globe 4.1

 13. World/ U.S. Map/Globe 4.2

 14. World/ U.S. Map/Globe 4.3

NOTE: The above charts, globes and maps is issued by supply one per classroom.

H-1-1

SECTION I

INSTRUCTOR MATERIALS

 UNIT

STOCK NO. NUMBER TITLE

7020DVDNS3INT NS-3 Naval Knowledge,Leadership and Naval Skills DVD

NONE NS-3 Naval Knowledge Curriculum Outline

NONE NS-3 Naval Knowledge Test Bank with Answer Keys

NONE NS-3 Naval Knowledge Note-taking Sheets

0509LP1096653 NS-3 Instructor’s Answer Guide (Second Edition 2009)

NOTE: The curriculum outline, test bank and note taking sheets for NS-3 are located on the NJROTC Portal.

I-1-1

SECTION J

REFERENCES:

 Hobbs, Richard R., CDR USNR (Ret), Naval Knowledge, Leadership and Nautical

 Skills (NS-3) for the NJROTC Student, 2nd ed, Naval Institute Press, Annapolis,

 2009.

 The Bluejacket’s Manual, 21st ed., United States Naval Institute, Annapolis,

 1991.

J-1-1

SECTION A

CURRICULUM FRAMEWORK

 Naval Science 3

**A. Major concepts/content.** The purpose of this course is to build on the

general introduction provided in Naval Science 1, to further develop the

traits of introduce cadets to the technical areas of naval science study,

and engender a deeper awareness of the vital importance of the world oceans

to the continued well-being of the United States.

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

-the construction and organization (damage control) of naval ships

-naval shipboard organization and watch standing

-equipment, terminology, and small boat basic characteristics

 used in basic seamanship

-common tools and terminology of navigation

-navigation fundamentals, nautical rules of the road and purpose

 of maneuvering boards

-naval weaponry instruction in gunnery, guided missiles, mines, chemical,

 biological, and nuclear weapons

**B. Intended outcomes.** After successfully completing this course, the

 student will:

 1. Expand the understanding and knowledge of Navy ships, their

 construction, operation, and uses.

 2. Expand the understanding and knowledge of Navy ships, their

 organization, shipboard watches, and general bills.

 3. Have a classroom understanding of small boat ship handling techniques

 used by the Navy.

 4. Demonstrate knowledge of basic theory of marine navigation as it

 relates to Naval Skills.

 5. Demonstrate knowledge of basic theory of nautical rules of the road

 and be able to use a maneuvering board effectively for all types

 of situations.

 6. Have a broad, basic knowledge of naval weaponry, to include naval

 gunnery, guided missile systems, mines, chemical, biological, and

 nuclear weapons.

A-2-1

SECTION B

COURSE OBJECTIVES

UNIT TITLE: 1.0 Ship Construction, and Damage Control

 UNIT OBJECTIVE: 1.0 The cadet will be expected to demonstrate knowledge of

 Navy ships, their construction, characteristics, and damage

 control.

 LESSON TOPIC: 1.1 Ship Construction

 ALLOTTED SESSIONS: 5

 LESSON TOPIC OBJECTIVE:

 1.1.1 Describe the eight major factors used in

 the construction of any U.S. Navy ship.

 1.1.2 Identify nautical terms used in the U.S.

 Navy.

 1.1.3 Describe terms that describe a ship's

 structure.

 1.1.4 Describe the decks and spaces of a U.S. Navy vessel.

 1.1.5 Describe the superstructure of a U.S. Navy vessel.

 1.1.6 Describe the watertight integrity of a Navy ship.

 1.1.7 Cite the three types of propulsion plants

 used in Navy vessels.

 1.1.8 Explain the design and planning stages in

 ship construction for U.S. Navy ships.

* + 1. Describe the launching of a U.S. vessel.
		2. Describe the commissioning of a U.S. vessel.

 1.1.11 List the classifications and designations

 of U.S. Navy ships.

 LESSON TOPIC: 1.2 Damage Control And Firefighting

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 1.2.1 Describe the services provided by damage

 control.

B-2-1

 1.2.2 Describe the functions and responsibilities

 of key personnel assigned to the damage

 control organization.

 1.2.3 Describe the responsibilities of repair

 parties.

 1.2.4 Explain the material conditions of

 readiness.

 1.2.5 Describe the methods and materials used by

 repair parties to make emergency repairs.

 1.2 6 Describe the systems used to communicate

 throughout the damage control organization.

 1.2.7 Describe the three physical requirements for a

 fire to occur and the four classes of fires.

 1.2.8 Explain the systems used to fight fires

 aboard a ship.

 1.2.9 Describe the portable firefighting

 extinguishers used by the Navy.

 1.2.10 Describe the protective firefighting

 equipment used by the Navy.

 1.2.11 Describe the procedures for fighting fires.

UNIT TITLE: 2.0 Shipboard Organization

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

 understanding of the Navy’s mission and

 organization to ensure combat effectiveness.

LESSON TOPIC: 2.1 Shipboard Organization

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 2.1.1 Describe the administrative organization of a

 typical Navy fighting ship, to include the

 responsibilities of key personnel.

 2.1.2 Describe the responsibilities of department heads and

 division officers aboard Navy vessels.

 2.1.3 Describe the publications which establish the

 functional shipboard organization.

B-2-2

LESSON TOPIC: 2.2. Watches

 ALLOTTED SESSIONS: 2

 LESSON TOPIC OBJECTIVES:

 2.2.1 Describe the watch structure used in the U.S. Navy.

 2.2.2 Cite the duties and responsibilities of shipboard

 watchstanders.

 2.2.3 Describe the duties performed by crewmen during

 underway watches.

 2.2.4 Describe the duties performed by crewmen during

 in-port watches.

 2.2.5 Describe the duties of Navy personnel performing

 watches ashore.

* + 1. Describe the duties of Navy personnel performing

barracks security watches.

 UNIT TITLE: 3.0 Basic Seamanship

 UNIT OBJECTIVE: 3.0 The cadets will be expected to demonstrate

 an understanding of basic care, makeup and use

 of fiber lines and wire ropes, ground tackle and deck

 equipment as it relates to basic seamanship.

 LESSON TOPIC: 3.1 Deck Seamanship

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 3.1.1 Cite the duties and responsibilities of deck

 department personnel.

 3.1.2 Cite the duties and responsibilities of boatswain’s

 Mates.

 3.1.3 Define marlinspike seamanship.

 3.1.4 Describe the types and makeup of ropes used

 in the Navy.

 3.1.5 Describe the proper procedure for handling

 fiber rope.

B-2-3

 3.1.6 Describe how to tie knots, bends, and

 hitches.

 3.1.7 Cite the importance of securing at sea.

 LESSON TOPIC: 3.2 Ground Tackle and Deck Equipment

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 3.2.1 Explain the terms associated with and the use

 of ground tackle.

 3.2.2 Explain the terms associated with and the use

 of anchors.

 3.2.3 Explain the terms associated with and the use

 of anchor chains and related equipment.

 3.2.4 Describe the operation of an anchor windlass.

 3.2.5 Explain the terms associated with and the

 procedures used in anchoring.

 3.2.6 Explain the terms associated with and the use

 of deck and pier fittings used in mooring.

 3.2.7 Explain the terms associated with and the

 procedures used for mooring lines to a pier.

 3.2.8 Describe the equipment and basic procedures

 used in towing.

 3.2.9 Describe the equipment used and explain the

 terms associated with cargo handling.

 3.2.10 Explain the procedure used during underway replenishment.

LESSON TOPIC: 3.3 Small Boat Seamanship

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 3.3.1 Describe the purpose of small boat seamanship.

 3.3.2 Identify nomenclature that applies to small boat parts and structure.

B—2-4

 3.3.3 Describe the Upperworks of a small boat.

 3.3.4 Describe the propulsion and rudder of a small boat.

 3.3.5 Identify types of small craft as they apply to the

 NJROTC program.

 3.3.6 Describe the duties of the coxswain.

 3.3.7 Describe the procedures for small boat handling.

 3.3.8 Given a set of maneuvering problems related to

 small craft, use recognized concepts to maneuver a boat

 in a classroom situation.

 3.3.8 Describe boat etiquette as practiced by the

 United States Navy.

UNIT TITLE: 4.0 Marine Navigation

 UNIT OBJECTIVE: 4.0 Demonstrate a basic understanding of navigation and the

 significant instruments used in this science.

 LESSON TOPIC: 4.1 Introduction to Navigation

 ALLOTTED SESSIONS: 4

 LESSON TOPIC OBJECTIVES:

 4.1.1 Define navigation.

 4.1.2 Describe the terrestrial sphere as it

 relates to navigation.

 4.1.3 Cite the significance of the great circle.

 4.1.4 Define circular measurement.

 4.1.5 Describe the relationship of meridians as

 they pertain to measurement.

 4.1.6 Describe how distance is represented by

 parallel circles on a globe.

B-2-5

 4.1.7 Explain how latitude and longitude are used

 to locate places on a map.

 4.1.8 Describe how nautical measurements are made

 at sea.

 4.1.9 Describe true and relative bearing.

 4.1.10 Explain the use of navigational charts.

 4.1.11 Describe how mercator projection is used by

 navigators.

 4.1.12 Explain the purpose for the basic types of

 nautical charts.

 4.1.13 Explain how courses, bearings, and lines of position

 are plotted on a nautical chart.

 4.1.14 Describe the navigational equipment and other means

 used to pilot a ship.

 LESSON TOPIC: 4.2 Aids To Navigation

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 4.2.1 Specify three principal characteristics of

 navigational lights.

 4.2.2 Explain the purpose of lighthouses, lightowers

 and lightships.

 4.2.3 Describe the types of buoys used along waterways.

 4.2.4 Describe how day beacons and ranges are used as

 navigational aids.

* + 1. Define the U.S. Intracoastal Waterway.
		2. Describe the publication *Nautical Chart Symbols,*

 *Abbreviations, and Terms, Chart No.1*.

B-2-6

 LESSON TOPIC: 4.3 Time and Navigation

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 4.3.1 Describe the basic timekeeping instruments

 used in the U. S. Navy.

 4.3.2 Explain how time is indicated in the Navy.

 4.3.3 Describe the purpose of the ship's bell

 system on board a Navy vessel.

 4.3.4 Describe the Arc theory in relation to

 measuring time.

 4.3.5 Describe the various kinds of time.

 4.3.6 Describe the aspects of the date/time group.

UNIT TITLE: 5.0 Rules of the Road and Maneuvering Board

UNIT OBJECTIVE: 5.0 The cadet will be expected to demonstrate the basic

 concepts of maneuvering a small boat under classroom

 conditions through the use of the maneuving board.

LESSON TOPIC: 5.1 Nautical Rules of the Road

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 5.1.1 Describe the two main sets of nautical rules.

 5.1.2 Explain the importance and purpose of nautical rules.

* + 1. Describe the rules for shipboard lights and day shapes in

 inland and international waters.

* + 1. Describe whistle, fog, and distress signals used on

 marine vessels.

 5.1.5 Describe the inland and international rules for

 steering and sailing vessels to avoid risk of collisions.

B-2-7

 LESSON TOPIC: 5.2 The Maneuvering Board

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 5.2.1 Describe the purpose and use of the

 maneuvering board.

 5.2.2 Explain the relationship between relative motion

 and reference point.

 5.2.3 Describe the major steps for plotting directions

 with the use of a maneuvering board.

 5.2.4 Given a set of problems related to the Closest

 Point of Approach (CPA), apply the major concepts

 of maneuvering a ship.

 5.2.5 Describe the wind effect on maneuvering a vessel.

UNIT TITLE: 6.0 Naval Weapons and Aircraft

UNIT OBJECTIVE: 6.0 The cadets will be expected to demonstrate an understanding of naval weapons.

LESSON TOPIC: 6.1 An Introduction to Naval Weapons

 ALLOTTED SESSIONS: 2

 LESSON TOPIC OBJECTIVES:

 6.1.1 Describe the evolution of naval weapons from 1453

 to the present.

 6.1.2 Discuss basic weapons terminology as it applies

 to the Navy.

 6.1.3 Describe the Navy weapons organization.

 6.1.4 Discuss the range of weapons used by the Navy.

 6.1.5 Describe the major considerations used to select

 ship’s weapons systems.

 6.1.6 Describe weapons systems elements and requriements.

 6.1.7 Describe the shipboard weapons control systems used

 by the Navy.

B-2-8

LESSON TOPIC: 6.2 Naval Guns

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 6.2.1 Describe the major characteristics and nomenclature

 of naval guns.

 6.2.2 Describe the principal components of gun ammunition.

 6.2.3 Describe the principals of gun projectiles.

 6.2.4 Describe the techniques used by the Navy to provide gunfire support.

LESSON TOPIC: 6.3 Naval Aircraft, and Guided Missiles

 ALLOTTED SESSIONS: 5

 LESSON TOPIC OBJECTIVES:

 6.3.1 Describe the evolution of naval aviation.

 6.3.2 Describe the types of naval aircraft.

 6.3.3 Explain the evolution of naval aircraft weapons

 systems.

 6.3.4 Describe the general types of guided missiles.

 6.3.5 Describe the four basic component parts of guided

 missile systems.

 6.3.6 Describe the types and usage of guided missiles

 used in the Navy.

 6.3.7 Describe the Navy's submarine-launched ballistic

 missile program.

 6.3.8 Describe the purpose of the Navy’s cruise missiles

 launched from surface ships, submarines, and aircraft.

 6.3.9 Describe the Navy air-to-air missiles used in front line

 defense of naval task force.

 6.3.10 Describe the second line of fleet defense with the use

 of the Navy’s surface-to air missiles.

 6.3.11 Describe the purpose of the Navy’s air-to-surface

 missiles.

B-2-9

 6.3.12 Describe the Navy’s current under sea warfare

 (USW)weapons.

 6.3.13 Explain the two basic types of guided missile

 trajectories.

LESSON TOPIC: 6.4 Mine Warfare

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 6.4.1 Describe the principles used in mine warfare from the American Revolution to the present.

* + 1. Describe the classification of mines.
		2. Describe the three types of mine countermeasures, to

include ship treatment against magnetic and acoustic mines, minesweeping, and mine hunting.

 6.4.4 Describe Mine Hunting and what it involves.

 6.4.5 Describe the major capabilities of mine warfare.

 LESSON TOPIC: 6.5 Chemical, Biological, and Nuclear Weapons

 ALLOTTED SESSIONS: 3

 LESSON TOPIC OBJECTIVES:

 6.5.1 Explain what conventional weapons are.

 6.5.2 Describe some examples of the use of chemical and

 biological warfare in earlier times.

 6.5.3 Explain what has tended to keep the use of chemical

 and biological warfare in early times.

 6.5.4 Explain chemical warfare and describe the common types

 of CW agents found in the weapons stockpiles of most

 major nations today.

 6.5.6 Explain biological warfare.

 6.5.7 Explain nuclear warfare and describe the possible

 effects of a nuclear warhead explosion.

B-2-10

 6.5.9 Explain the physiological effects of radiation exposure

 on personnel.

 6.5.10 Explain chemical biological and damage control(CBR\_

 damage control procedures, including pre-attack

 countermeasures and post-attack shipboard

 dcontamination.

B-2-11

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.....................Ship Construction and Damage ........................ 9

 Control

 1.1........Ship Construction................5

 1.2........Damage Control and Firefighting..4

2.0.....................Shipboard Organization and

 Watchstanding....................6

 2.1........Shipboard Organization...........4

 2.2........Watches..........................2

3.0.....................Basic Seamanship.....................................12

 3.1........Deck Seamanship..................4

 3.2........Ground Tackle and Deck...........4

 Equipment

 3.3........Small Boat Seamanship............4

4.0.....................Introduction to Navigation and Time.................10

 4.1........Introduction to Navigation.......4

 4.2........Aids to Navigation...............3

 4.3........Time and Navigation..............3

5.0.....................Rules of the Road and Maneuvering...................6

 Board

 5.1....... Nautical Rules of the Road.......3

 5.2....... Maneuvering Board................3

6.0.................... Naval Weapons and Aircraft..........................14

 6.1........An Introduction to Naval.........2

 Weapons

 6.2........Naval Guns.......................3

C-2-1

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

UNIT LESSON UNIT AND LESSON SESSIONS TOTAL SESSIONS

NUMBER NUMBER TITLE PER LESSON PER UNIT

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

 6.3........Naval Aircraft, and Missiles.....3

 6.4........Mine Warfare.....................3

 6.5........Chemical, Biological, and........3

 Nuclear Warfare

C-2-2SECTION D

 COURSE STUDENT PERFORMANCE STANDARDS

 Naval Skills

 After successfully completing this course, the student will:

 **1. Expand the understanding and knowledge of Navy ships, their**

 **construction, operation, mission and objectives of damage control.**

 The student will

 1.01 draw a basic shipboard organization and identify ship types and

 their missions.

 1.02 identify nautical terms associated with the parts and structure

 of ships.

 1.03 discuss the major factors considered in the construction of

 naval ships and the way they are propelled.

 1.04 identify the four ways a ship can be launched.

 1.05 identify the material conditions of readiness, and the purposes

 of shakedown and underway training cruises.

 1.06 explain the primary objectives of damage control.

 1.07 identify the classes of ship fires, their characteristics, and

 extinguishing methods.

 1.08 identify the principal means and advantages of internal

 communication throughout the ship.

 1.09 identify the principal factors in CBR warfare.

 **2. Recognize and learn the organizational elements of, and relationships**

 **within, a typical Navy shipboard organization, and learn the different**

 **types of naval ships, and their mission.**

 The student will:

 2.01 recognize the naval terminology used in shipboard organization.

 2.02 describe the composition and primary responsibilities of the various

 departments aboard ship.

 2.03 identify the types of shore watches and shipboard watches, both in-port

 and underway.

 2.04 describe the written instructions for the assignment of shipboard

 personnel, and procedures to be followed during various emergency,

 operating and administrative situations.

 2.05 draw a basic shipboard organization and identify ship types and their

 missions.

 **3. Exhibit an understanding of the various types of equipment and**

 **terminology used in basic seamanship.**

 The student will:

 3.01 demonstrate the use of various types of knots, bowlines and

 hitches used when anchoring and mooring.

 3.02 demonstrate how to coil, fake and flemish a line.

 3.03 demonstrate skill with all ground tackle and deck equipment.

 3.04 identify all equipment having to do with a ship's anchors,

 anchor cable, or mooring gear.

D-2-1

 3.05 describe the types, construction and measurement of ropes.

 3.06 identify and describe the hull, transom, draft, keel, and pulpit as

 part of a small boat, and the purpose of each part.

 3.07 describe the differences of handling a twin-screw boat as compared to a

 single-screw boat.

 3.08 discuss the screw current, side force, and rudder forces all combine to

 determine how a boat will respond in a backing situation.

 3.09 discuss the boat nomenclature that applies to powerboats and sailboats.

 3.010 describe the factors associated with making a port-side-to landing and

 a starboard-side-to landing in small boats.

 3.011 discuss why and how hand salutes are rendered to small boats carrying

 officers and officials.

 3.012 describe the various ways the national ensign and personal flags and

 pennants of officers are properly displayed from small boats.

 **4. Become familiar with the tools and terminology of navigation and**

 **do basic navigational plotting.**

 The student will:

 4.01 recognize the common terms used in navigation.

 4.02 describe the common types of navigation such as piloting, dead

 reckoning, celestial navigation, and electronic navigation.

 4.03 distinguish between mercator and gnomic chart projections

 4.04 describe the purpose of the chronometer and sextant as

 navigational instruments.

 4.05 identify the various navigational aids, their characteristics, and

 their chart symbology.

 4.06 discuss the importance of time in navigation.

 4.07 identify the main relative bearing positions, and convert from

 relative to true bearings, and vice versa.

 4.08 demonstrate the use of the pelorus in taking bearings.

 **5. Demonstrate knowledge of basic theory of nautical rules of the road**

 **and be skilled in the many uses of the maneuvering board**.

 The student will:

 5.01 discuss the need for nautical rules of the road, and the types of

 risk collision situations encountered underway.

 5.02 explain sound signals used under rules of the road.

 5.03 describe the main purpose of the maneuvering board , and the

 reference normally used for motion by individuals concerned

 with maneuvering a vessel.

 5.04 complete a maneuvering board plot in order to find the direction and

 speed of the true wind.

 **6. Demonstrate knowledge of naval weapons in terms of their evolution,**

 **their types, and their essential elements.**

 The student will:

 6.01 cite the main consideration governing the selection of a weapons system

 for a ship.

 6.02 cite the various purposes guns are used for on almost all naval ships.

D-2-2

 6.03 identify the three essential parts of a naval high-explosive projectile

 and how damage is primarily inflicted.

 6.04 describe the principals of projectiles.

 6.05 cite some important tasks that may be assigned to naval gunfire support?

 6.06 explain the three main groups that naval aircraft fall into: fixed wing,

 rotary wing, and lighter-than-air.

 6.06 discuss the naval guided missile from the standpoint of the airframe,

 the propulsion system, the guidance system, and the warhead.

 6.06 compare and contrast the five types of missile guidance systems, their

 operational capability, their flexibility, and their range.

 6.07 discuss the aerodynamic forces of thrust, drag, gravity, and lift which

 produces a resultant force acts on all parts of a body in level flight.

 6.07 describe the trajectory of a sea-launched ICBM, and how it is affected

 by aerodynamic forces during its initial and terminal flight in the

 earth's atmosphere.

 6.08 describe the ballistic and aerodynamic trajectories of guided missiles.

 6.09 discuss the first American attempt at mine warfare in the Revolutionary

 War.

 6.10 explain how offensive and defensive mining are used, and how they

 compare to the three types of mine countermeasures used to protect

 friendly shipping against mines.

 6.11 discuss mine classification from the standpoint of: the method of

 planting, the final planted position, the mode of operation, and the

 detonating or actuation mechanism.

 6.12 explain how mines are located (hunted) and swept.

 6.13 describe some examples of the use of chemical and biological warfare in

 earlier times.

 6.14 discuss the more devastating types of CBR weapons that are in the

 inventories of many of today’s military forces.

D-2-3

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 is

 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 Drill

 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.

Unit 10 (appendix unit) exceeds the total number of classroom hours stated

above by 6 hours/sessions. The use of this unit is at the discretion of the

NSI.

E-2-1

SECTION F

POWER POINT PRESENTATIONS

1. Use the Power Point Presentations provided for NS-3 which is located on the

 NJROTC Naval Science 3 DVD.

F-2-2

SECTION G

 INSTRUCTIONAL EQUIPMENT

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

 classroom

2. Chalkboard or dry erase board and equipment.

3. Three Personal Computer (PC) with peripherals (as provided)

4. Liquid Crystal Display (LCD) projector

 \* One per classroom

5. Naval Science 3 (NS3) Digital Video Disk (DVD)

6. Classroom Performance System (CPS) with remote controls.

 \* One per classroom

7. One CD/Tape Cassette Player

 \* One per classroom

8. One multimedia converter Aitech, model Multipro or equivalent per classroom.

Note: Computer systems and software will most likely be refereshed at least every

 four years.

G-2-1

SECTION H

CHARTS and MAPS

Title Lesson Number

No. 65, Track Chart of the World 4.1

12-3162-3C- 1 through 18, Constellation Stars 4.1

 (chart series of 18)

Charts (World Charts) NAVOCEANO Charts 4.1

No. 17, Great Circle Sailing Chart-Atlantic 4.2

No. 56, Great Circle Sailing Chart-Pacific 4.2

018 NAV/OP Geographic Map of the U.S. 4.2

019 NAV/OP Geographic Map of the World 4.2

No. 76, Time Zone Chart of the World 4.3

3-3505.21C, Charts: Tides, Winds and Currents, 5.1 (24x3O), 1, 3 & 6

H-2-1

SECTION I

INSTRUCTOR MATERIALS

INSTRUCTOR MATERIALS

 UNIT

STOCK NO. NUMBER TITLE

7020DVDNS3INT NS-3 Naval Knowledge,Leadership and Naval Skills DVD

NONE NS-3 Naval Knowledge Curriculum Outline

NONE NS-3 Naval Knowledge Test Bank with Answer Keys

NONE NS-3 Naval Knowledge Note-taking Sheets

0509LP1096653 NS-3 Instructor’s Answer Guide (Second Edition 2009)

NOTE: The curriculum outline, test bank and note taking sheets for NS-3 are located on the NJROTC Portal.

I-2-1

SECTION J

REFERENCES:

 Hobbs, Richard R., CDR USNR (Ret), Naval Knowledge, Leadership and Nautical

 Skills (NS-3) for the NJROTC Student, 2nd ed, Naval Institute Press, Annapolis,

 2009.

 The Bluejacket’s Manual, 21st ed., United States Naval Institute, Annapolis,

 1991.

 The Bluejacket’s Manual, 21st ed., United States Naval Institute, Annapolis,

 1995.

 The Bluejacket’s Manual, 2nd. ed., United States Naval Institute, Annapolis,

 1990.

 The Bluejacket’s Manual, United States Naval Institute, Annapolis,

 1978.

 Maloney, Elbert S., Dutton’s Navigation and Piloting 14th, ed. U.S. Naval

 Institute, Press, Annapolis, 1985.

 Maloney, Elbert S., Dutton’s Navigation and Piloting 14th, ed. U.S. Naval

 Institute, Press, Annapolis, 2009.

 Noel, John V. CAPT USN (Ret) Knight’s Modern Seamanship, 16th ed., Van Nostrad

 Reinhold Co., New York, 1972.

 0509-LP-042-0199, Knight’s Modern Seamanship (17th ed.)

 005NAV/OP, Nautical Charts and Pubs (DMA, Numeric)

 050-LP-042-0209, Dutton’s Navigation & Piloting (Dutton, 14th ed.)

 0509-LP-042 0553 Maneuvering Board (Prorammed Instruction)

 Ml6672.2, Navigation Rules, International, Dulard

 NAVEDTRA 10120H, Seaman, Chapter 4.

 NAVEDTRA 10210H, Seaman

 NAVEDTRA 10120-Jl, Seaman

 NAVEDTRA 10149-F1, Quartermaster 3 & 2.

 NAVEDTRA 10151, Quartermaster 1 & C.

 NAVEDTRA 10157, Quartermaster 3.

 NAVEDTRA 16138-H, Naval Orientation.

 NAVEDTRA 10054-E1, Basic Military Requirements

 International Regulations for Preventing Collisions at Sea*,* 1972

 (1972 COLREGS).

J-2-1

 Inland Navigational Rules, 1980

 Tate, William H., A Mariner’s Guide to the Rules of the Road, 2nd

 ed., Naval Institute Press, Annapolis, 1982.

 Llana, Christopher B. and Wisneskcy, George P., Handbook of the Nautical Rules

 of the Road, 2nd., Naval Institute Press, Annapolis, 1991.

 Szczurek, Greg, COLREGS, Houston Marine Consultants, Inc., Kenner, La, 1980.

 Szczurek, Greg, Unified Rules, Houston Marine Consultants, Inc., Kenner, La,

 1981.

 NAVPERS 93440- A, M/B Workbook

J-2-2