



Class of 2020

Academic Program Brief

Associate Dean for Academic Affairs

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Associate Dean for Academic Affairs (ADAA)



Jennifer K. Waters, Ph.D., P.E.

*Academic Requirements, Academic Curriculum,
Special Academic Programs,
Academic Time & Space*



Welcome!

You Are Here



You've Come A Long Way *(and you're not alone)*



You Are Here



Outline of this briefing

- Academic Organization
 - Chain of Command
 - Divisions and Departments
 - Majors and Minors
 - Faculty
- Academic Calendar
 - A Tour from I-Day → Classes → Beyond
- Graduation Requirements
 - Commission and Degree
 - Academic Requirements
 - Grades and Credits
- And More ...
 - The Academic Adventure Ahead
- Questions and Answers

Naval Academy Mission

To develop Midshipmen
morally, mentally and physically
and to imbue them with
the highest ideals of duty, honor and loyalty
in order to graduate leaders
who are dedicated to a career of naval service and
have potential for future development in mind and
character to assume the highest responsibilities of
command, citizenship and government.

Naval Academy Vision

To be the premier educational

institution for developing future
naval officers from across
the Nation to serve and
lead in an increasingly
interdependent and
volatile world.



Naval Academy Leadership



**Vice Admiral Walter E. "Ted" Carter Jr., USN
Superintendent**



**Colonel Stephen Liszewski, USMC
Commandant of Midshipmen**



**Dr. Andrew Phillips
Academic Dean and Provost**



**Mr. Chet Gladchuk
Athletic Director**



**CMDCM Russell Smith, USN
Command Master Chief**

**Academic Dean
and Provost**
Dr. Andrew T. Phillips

Vice Academic Dean
Dr. Boyd A. Waite

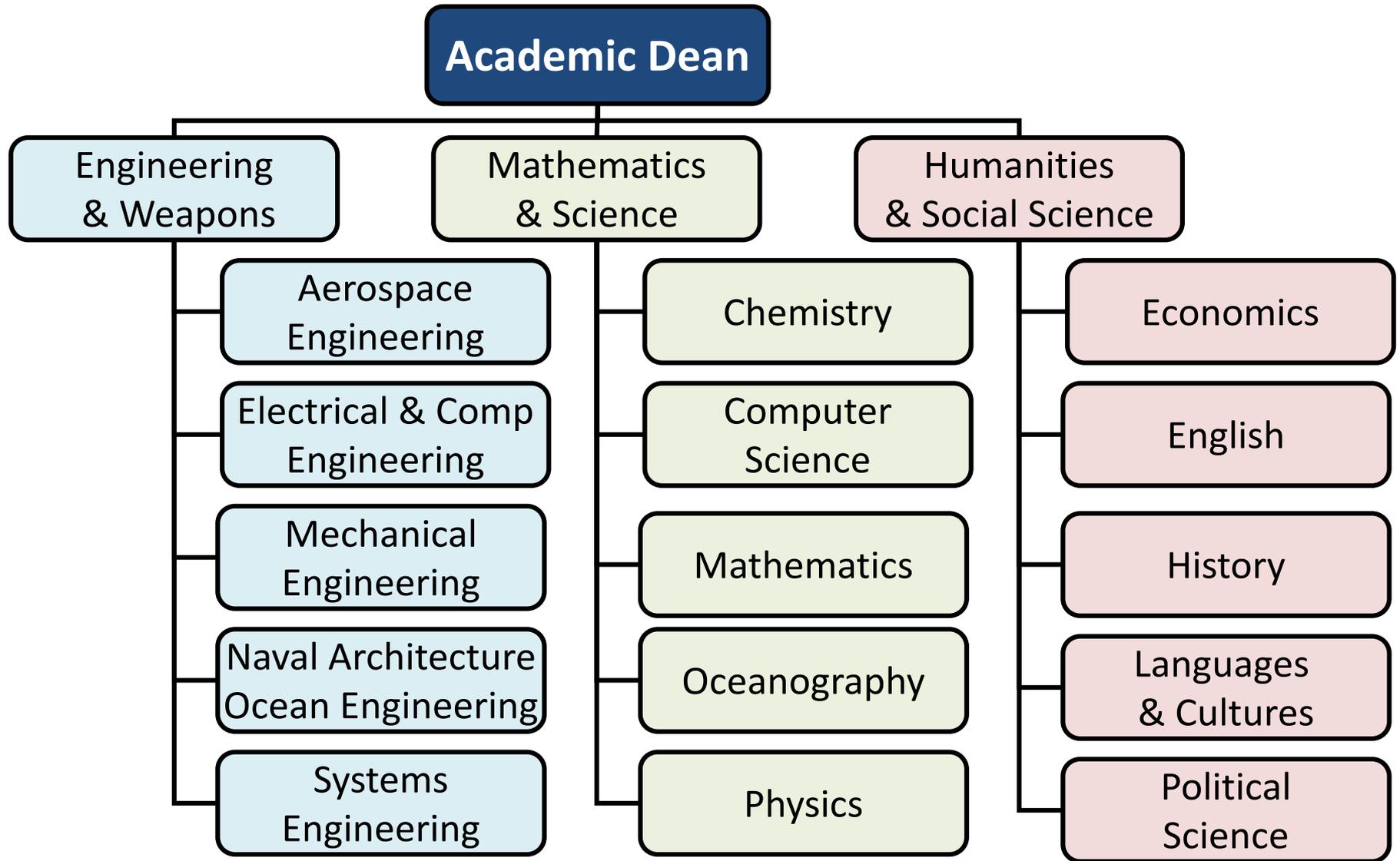
**Associate Dean
Academic Affairs**
Dr. Jennifer K. Waters

**Associate Dean
Finance & Mil Affairs**
CAPT Peter Nardi, USN (Ret)

**Associate Dean
Planning & Assessment**
Dr. Katherine Cermak



Academic Divisions and Departments



Additional Academic Divisions and Departments

Commandant

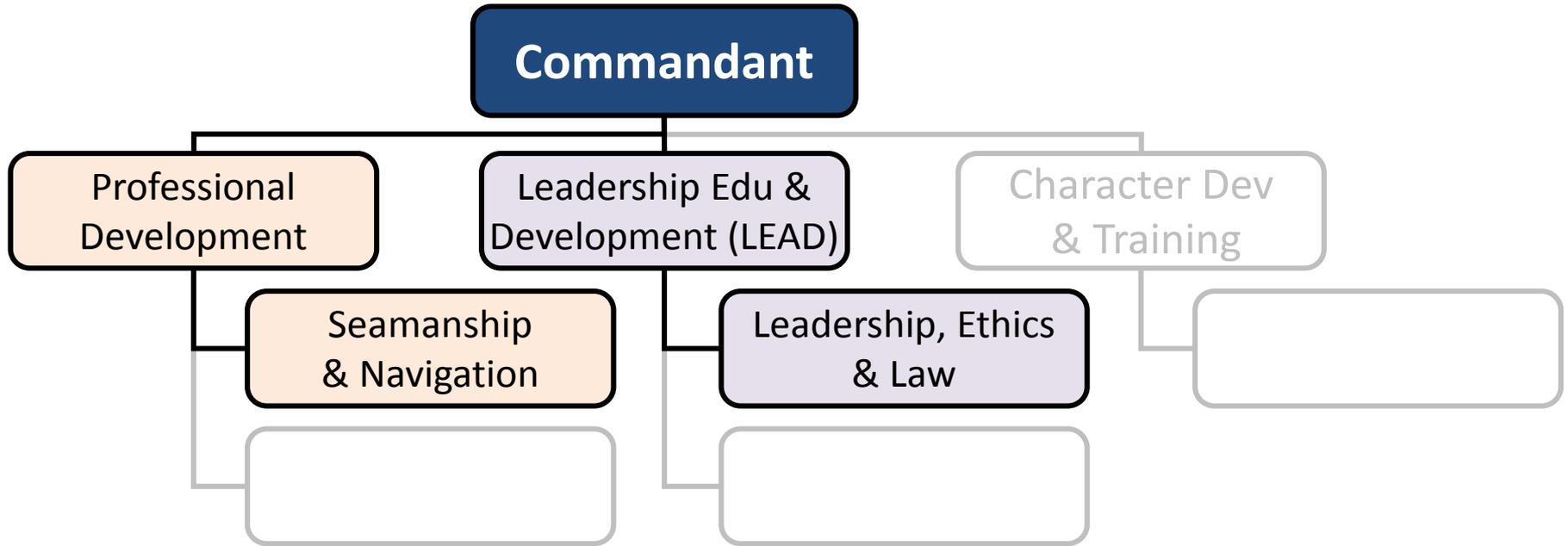
Professional Development

Seamanship & Navigation

Leadership Edu & Development (LEAD)

Leadership, Ethics & Law

Character Dev & Training



Division of Engineering and Weapons



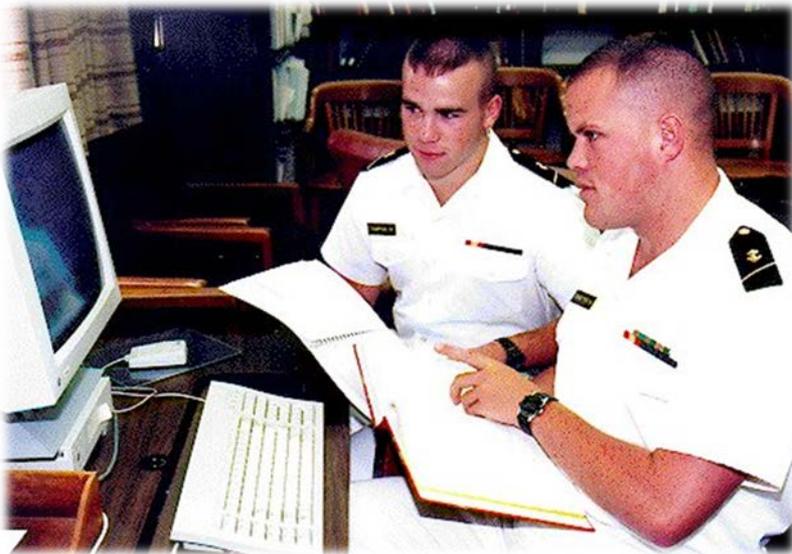
Division of Engineering & Weapons

- **Aerospace Engineering**
 - EAS – Aeronautical Engineering
 - EASA – Astronautical Engineering
- **Electrical & Computer Engineering**
 - ECE – Computer Engineering
 - EEE – Electrical Engineering
- **Mechanical Engineering**
 - EGE – General Engineering
 - EME – Mechanical Engineering
 - ENR – Nuclear Engineering
- **Naval Architecture & Ocean Engineering**
 - ENM – Naval Architecture & Marine Engineering*
 - EOE – Ocean Engineering*
- **Weapons & Systems Engineering**
 - ESE – Systems (Controls) Engineering*



* = honors program offered

Division of Mathematics and Science



Division of Mathematics & Science

- **Chemistry**
 - SCH – Chemistry
 - SCB – Biochemistry
- **Computer Science**
 - SCS – Computer Science
 - SIT – Information Technology
- **Mathematics**
 - SGS – General Science
 - SMA – Mathematics*
 - SMP – Applied Mathematics*
 - SMO – Operations Research
- **Oceanography**
 - SOC – Oceanography*
- **Physics**
 - SPA – Applied Physics
 - SPAA – Astrophysics
 - SPH – Physics
- **Cyber Sciences**
 - SCY – Cyber Operations

* = honors program offered

Division of Humanities and Social Sciences



Division of Humanities & Social Sciences

- **Languages & Cultures**

- FLA – Arabic
- FLC – Chinese

- **Economics**

- FEQ – Economics*

- **Political Science**

- FPS – Political Science*

- **English**

- HEG – English*

- **History**

- HHS – History*

Minors in Language & Cultures

- FA -Arabic
- FC - Chinese
- FJ - Japanese
- FR - Russian
- FF - French
- FG - German
- FS - Spanish

* = honors program offered

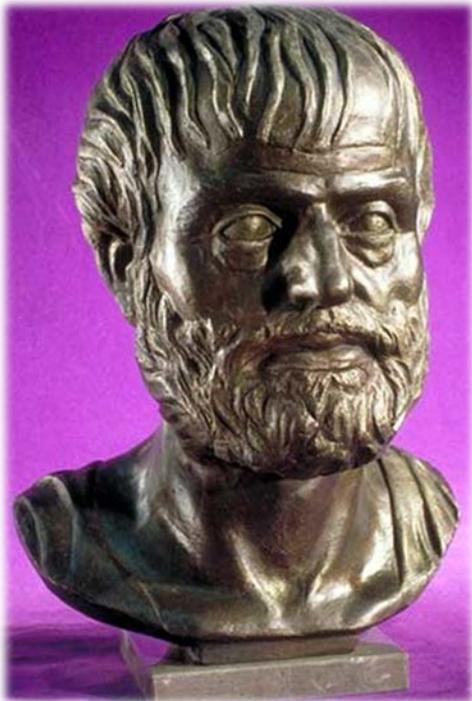
Division of Professional Development



Division of Professional Development

- **Seamanship and Navigation**
 - (No Majors)

Division of Leadership Education & Development (LEAD)



Division of Leadership Education & Development (LEAD)

- **Leadership, Ethics and Law**
 - ... and Philosophy, Psychology, Sociology, Anthropology
 - (No Majors)

Academic Majors

Engineering & Weapons	Mathematics & Science	Humanities & Social Sciences
<p>EAS – Aeronautical Engineering EASA – Astronautical Engineering ECE – Computer Engineering EEE – Electrical Engineering EGE – General Engineering EME – Mechanical Engineering ENM – Naval Architecture & Marine Engineering* ENR – Nuclear Engineering EOE – Ocean Engineering* ESE – Systems (Controls) Engineering*</p>	<p>SCB – Biochemistry SCH – Chemistry SCY – Cyber Operations SCS – Computer Science SIT – Information Technology SGS – General Science SMA – Mathematics* SMP – Applied Mathematics* SMO – Operations Research SOC – Oceanography* SPA – Applied Physics SPAA – Astrophysics SPH – Physics SQE – Quantitative Economics</p>	<p>FLA - Arabic FLC - Chinese FEQ – Economics* FPS – Political Science* HEG – English* HHS – History*</p> <p><i>Language Minors</i> <i>FA - Arabic</i> <i>FC - Chinese</i> <i>FJ - Japanese</i> <i>FR - Russian</i> <i>FF - French</i> <i>FG - German</i> <i>FS – Spanish</i></p>

* = honors program offered

Accreditation

- **Institutional Accreditation:**

Middle States

Commission on Higher Education



- **Specific Majors:**

- Each Engineering Major:

**Engineering Accreditation Commission (EAC) of
ABET, Inc. www.abet.org**



- Computer Science & IT:

**Computing Accreditation Commission (CAC) of
ABET, Inc. www.abet.org**



- Chemistry:

American Chemical Society (ACS)



School Rankings



PayScale



Boy Scouts



America's 50 Best Colleges

TS the *best* schools

School Rankings

- **U.S. News & World Report Best Colleges Rankings**
 - Top Public School
 - Best Undergraduate Engineering Program
 - National Liberal Arts College
- **Forbes America's Top Colleges Rankings**
 - Best Public College
 - Best Value
- **PayScale College Salary Report**
 - Best Post-Grad Earnings



Academic Majors

Engineering & Weapons	Mathematics & Science	Humanities & Social Sciences
<p>EAS – Aeronautical Engineering EASA – Astronautical Engineering ECE – Computer Engineering EEE – Electrical Engineering EGE – General Engineering EME – Mechanical Engineering ENM – Naval Architecture & Marine Engineering* ENR – Nuclear Engineering EOE – Ocean Engineering* ESE – Systems (Controls) Engineering*</p>	<p>SCB – Biochemistry SCH – Chemistry SCY – Cyber Operations SCS – Computer Science SIT – Information Technology SGS – General Science SMA – Mathematics* SMP – Applied Mathematics* SMO – Operations Research SOC – Oceanography* SPA – Applied Physics SPAA – Astrophysics SPH – Physics SQE – Quantitative Economics</p>	<p>FLA - Arabic FLC - Chinese FEQ – Economics* FPS – Political Science* HEG – English* HHS – History*</p> <p><i>Language Minors</i> FA - Arabic FC - Chinese FJ - Japanese FR - Russian FF - French FG - German FS – Spanish</p>

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A Note on Majors Selection

- Of those USNA graduates commissioned into the US Navy, 65% shall be from majors in Science, Technology, Engineering or Mathematics (STEM).
- Needs of the Naval Service and resource constraints at the Naval Academy may constrain midshipman choices of major.

Languages, Regional Expertise and Cultural Awareness

- It is a Department of Defense priority to increase the education and skills of the officer corps in foreign languages, regional knowledge and cultural awareness.
- The Naval Academy offers a wide array of opportunities within its regular and summer academic programs for enhancement of these skills and knowledge areas.

Cyber Warfare

- The rapidly growing importance of cyber security to the Department of Defense has given rise to the introduction of two new courses in the core curriculum of the Naval Academy: “Cyber 1” and “Cyber 2.”
- USNA is the first undergraduate program to include Cyber and offer a Cyber Ops major.

Naval Academy Faculty



- Military and civilian
- Scholars and experts in their disciplines
- Connect classroom with operational experience in Fleet and Marine Corps
- Diverse
- Dedicated to enabling midshipmen learning and their preparing midshipmen for service

Faculty

Since 1845 about 1/2 officer, 1/2 civilian



Officer faculty:

- Masters or doctoral degree
- Military role model
- Recent operational experience
- Mentors

Civilian faculty:

- Doctoral degree
- Academic expertise
- Program continuity
- Mentors

Academic Requirements

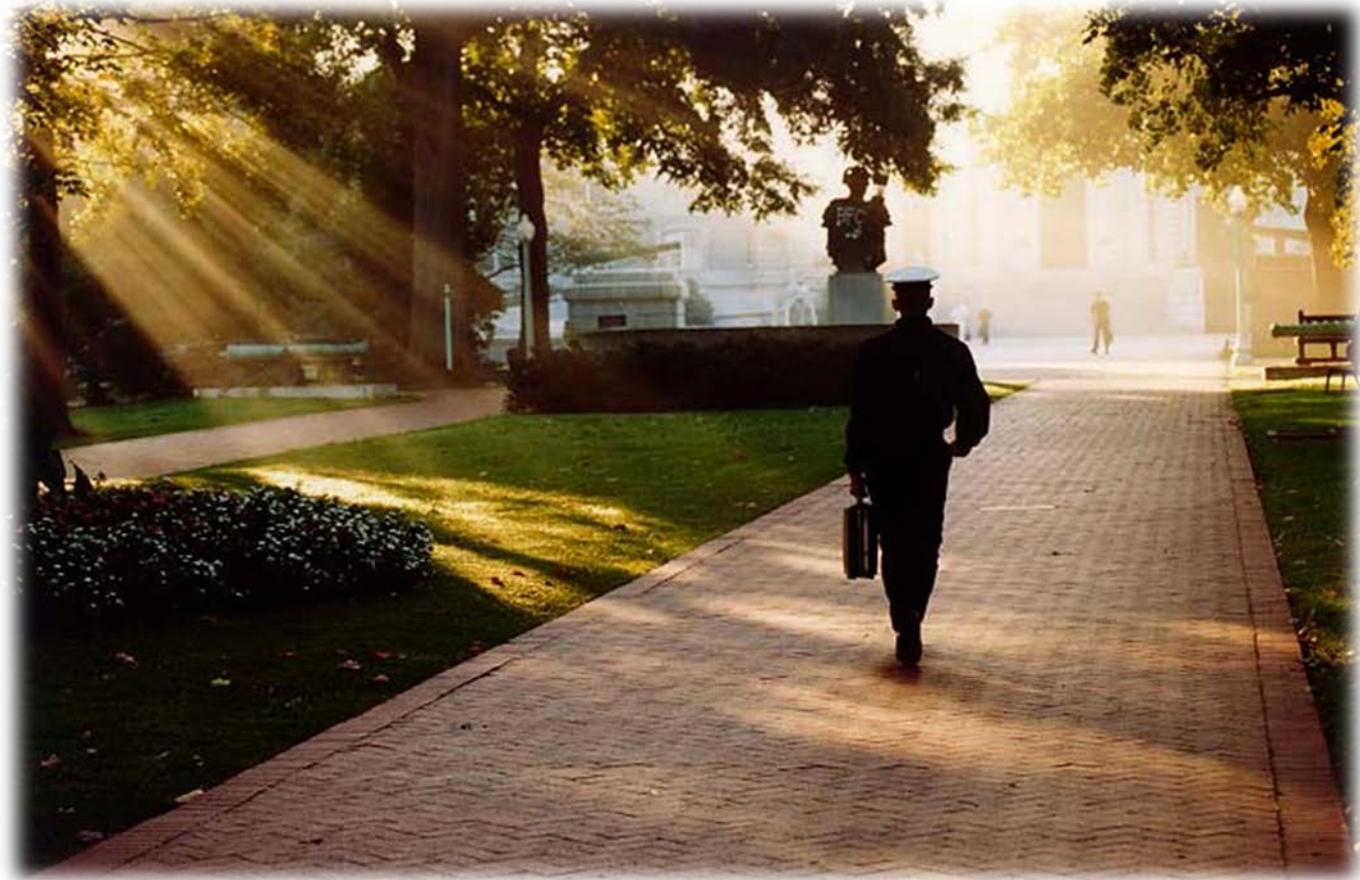
- Core courses
 - Plebe year
 - Upper class years
- +
- Majors program
- =
- **Complete a matrix**



“Standard” Plebe Year Courses

Fall	Spring
Calculus I	Calculus II
Chemistry I	Chemistry II
English I	English II
Naval History	Government
Seamanship	Cyber Security
Leadership I	

A “Typical” Daily Schedule



Daily Periods

Pd	Duration	Pd	Duration
1	0755-0845	8	0755-0910
2	0855-0945		
3	0955-1045	9	0955-1110
4	1055-1145		
5	1330-1420	10	1330-1445
6	1430-1520		
7	<i>1530-1620</i>	periods: 50 or 75 min	

	Mon	Tue	Wed	Thu	Fri
1	Chem		Chem	Chem	Chem
2	Gov't	PE	Gov't	Chem	Gov't
3				Smnshp	
4	English		English	Smnshp	English
5	Ldrshp		Ldrshp		
6	Calc	Calc	Calc		Calc

An Engineering Major

Third Class		Second Class		First Class	
Fall	Spring	Fall	Spring	Fall	Spring
Nav I	Ethics	Nav II	Leadership	Law	JO Practic
Calculus	Diff Eqns	EE	Cyber II	Wpns	Control Sys
Physics	Physics				
W Civiliz	W Civiliz		H&SS Elec		H&SS Elec
Major	Major	Major	Major	Major	Major
	Major	Major	Major	Major	Major
		Major	Major	Major	Major
				Major	

A Mathematics-Science Major

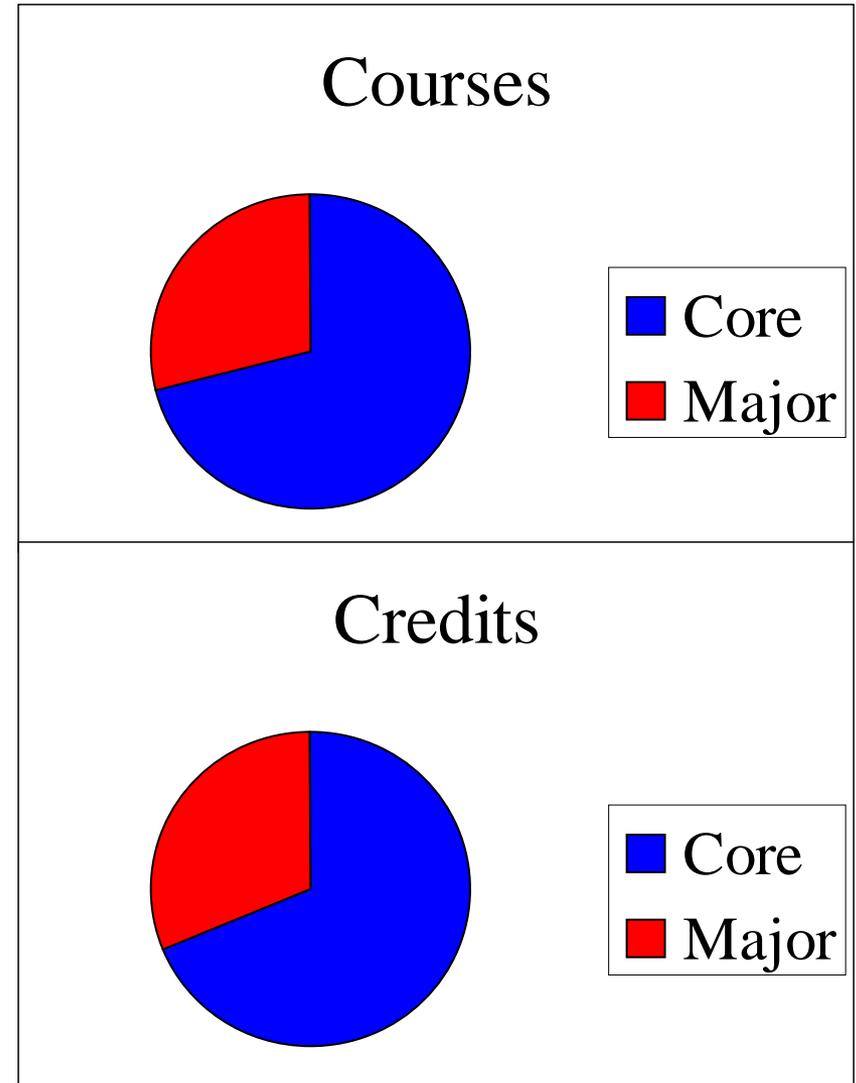
Third Class		Second Class		First Class	
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Nav I	Ethics	Nav II	Leadership	Law	JO Practic
Calculus	Diff Eqns	EE	Cyber II	Wpns	Control Sys
Physics	Physics				
W Civiliz	W Civiliz		H&SS Elec		H&SS Elec
			Ship Propul	Warfare E	
Major	Major	Major	Major	Major	Major
	Major	Major	Major	Major	Major
		Major		Major	Major

A Humanities-Social Science Major

Third Class		Second Class		First Class	
Fall	Spring	Fall	Spring	Fall	Spring
Nav I	Ethics	Nav II	Leadership	Law	JO Practic
Calculus	Diff Eqns	EE	Cyber II	Wpns	Control Sys
Physics	Physics				
W Civiliz	W Civiliz		H&SS Elec		H&SS Elec
			Ship Propul	Warfare E	
Language	Language	Language	Language		
Major	Major	Major	Major	Major	Major
		Major	Major	Major	Major

Academic Requirements

- Core courses
 - Plebe year
 - Upper class years
- Majors program



Common or “Core” Courses

(~2/3 of Academic Program)

Calculus [3]	English [2]	Leadership [2]
Mathematics-4 [1]	Gov't [1]	Ethics [1]
Cyber Warfare [2] *	History [3]	Law [1]
Chemistry [2] *	Electives [2]	Seamanship [1] *
Physics [2] *		Navigation [2] *
Electrical E [1] *	Language [4]	JO Practicum [1] *
Wpns Syst E [1] *		
Warfare E [1] *		Physical Ed [8]
Ship Propuls E [1] *		

* with lab

Grades and Credits

Grade	Value or meaning
<i>A</i>	4.0
<i>B</i>	3.0
<i>C</i>	2.0
<i>D</i>	1.0
<i>F</i>	0.0
<i>I</i>	Incomplete
<i>V</i>	Validated

Credits

R	Recitation, lecture, discussion class hours/week
L	Laboratory class hours/week
C	Credits

Generally, $C = R + L / 2$

Chemistry I has three (3 hours) recitations per week plus a single double-period (2 hour) laboratory.

So,

Chemistry I carries
 $3 + 2/2 = 4$ credits.

English I has three (3 hours) recitations per week.

So,

English I carries
 $3 + 0/2 = 3$ credits.

Plebe Course Credits

Course	R	L	C
Calculus I or II	4	0	4
Chemistry I or II	3	2	4
Cyber Security	2	2	3
English I or II	3	0	3
US Gov't and Constitution	3	0	3
Leadership I	2	0	2
Seamanship	1	2	2
Physical Education I	0	1	0

Quality Point Ratio (QPR)

Known elsewhere as the Grade Point Average (GPA)

$$\text{QPR} = \frac{G_1 C_1 + \dots + G_N C_N}{C_1 + \dots + C_N}$$

where

- G_i = grade value earned in the course
- C_i = # credits pf the course

Academic Calendar

A plebe's eye-view from
Induction Day
to the
Start of the Semester
and
beyond ...



Mon	Tue	Wed	Thu	Fri	Sat
			Jun 30 Induction Day 2020	Jul 01 Today	02
04 Independence Day	05	06	07	08	09
11	12	13	14	15	16
18 AAO	19 AAO	20 AAO	21 AAO	22 AAO	23
25	26	27	28	29	30
Aug 01 AAR	02 AAR	03 AAR	04	05	06
08	09	10	11	12	13
				Parents Weekend	
15	16	17 Room Move	18 Brigade Reform	19	20
22 Fall Semester Begins	23	24	25	26	27

USNA Academic Term 171 (Fall 2016)

Academic Year 2016-2017

Mon	Tue	Wed	Thu	Fri	Sat
22-Aug-16 Fall Term Begins	23-Aug	24-Aug	25-Aug	26-Aug	27-Aug
29-Aug	30-Aug	31-Aug	1-Sep	2-Sep	3-Sep FB v. Fordham
5-Sep Labor Day (No Classes)	6-Sep Monday schedule Add course deadline	7-Sep	8-Sep	9-Sep	10-Sep FB v UConn
12-Sep	13-Sep	14-Sep	15-Sep	16-Sep Preregistration	17-Sep FB @ Tulane
19-Sep Preregistration	20-Sep Preregistration	21-Sep Preregistration	22-Sep Preregistration	23-Sep Preregistration	24-Sep
26-Sep Academic Reserve	27-Sep Academic Reserve	28-Sep Academic Reserve	29-Sep Academic Reserve	30-Sep Academic Reserve	1-Oct FB @ USAFA
3-Oct	4-Oct Grades due	5-Oct	6-Oct MAPRs due	7-Oct	8-Oct FB v Houston
10-Oct Columbus Day (No Classes)	11-Oct	12-Oct	13-Oct USN Birthday FB @ ECarolina	14-Oct	15-Oct
17-Oct	18-Oct	19-Oct	20-Oct	21-Oct	22-Oct FB v. Memphis (HC)
24-Oct	25-Oct	26-Oct	27-Oct	28-Oct Academic Reserve FB @USF	29-Oct
31-Oct Academic Reserve	1-Nov Academic Reserve	2-Nov Academic Reserve	3-Nov Academic Reserve	4-Nov	5-Nov FB v. Notre Dame @ Jacksonville
7-Nov	8-Nov Grades due	9-Nov MAPRs due	10-Nov Drop course deadline USMC Birthday	11-Nov Veterans Day (No Classes)	12-Nov FB v Tulsa
14-Nov	15-Nov	16-Nov	17-Nov Registration	18-Nov Registration	19-Nov
21-Nov Registration	22-Nov Registration	23-Nov Registration Fri & Early schedule	24-Nov Thanksgiving (No Classes)	25-Nov Thanksgiving (No Classes)	26-Nov FB @ SMU
28-Nov Registration	29-Nov Registration	30-Nov Registration	1-Dec Registration	2-Dec Registration	3-Dec FB Conf Champ (tbd)
5-Dec Registration	6-Dec Registration	7-Dec Registration	8-Dec Fall Term Ends	9-Dec Review & Study Day	10-Dec FB v Army
12-Dec Review & Study Day	13-Dec Exam Day 1	14-Dec Exam Day 2	15-Dec Exam Day 3	16-Dec Exam Day 4	17-Dec Exam Day 5
19-Dec Exam Day 6	20-Dec Exam Day 7 Late Graduation	21-Dec	22-Dec Grades due @ 1000 AcBoard list posted	23-Dec	24-Dec Christmas Eve
26-Dec-16	27-Dec MAPRs, CoMAPRs due @ noon	28-Dec	29-Dec	30-Dec	31-Dec-16 New Year's Eve
<i>Updated</i>					26-Feb-16

More calendars at
usna.edu/Academics

Academic Calendar Overview

- Summer Term
 - 3 blocks of 4 weeks = 12 weeks
 - End of May to Middle of August
 - Professional Training, Summer School
- Fall Semester
 - 16 weeks
 - Middle of August to Christmas
 - Academic course work
- Spring Semester
 - 16 weeks
 - Beginning of January to early May
 - Academic course work

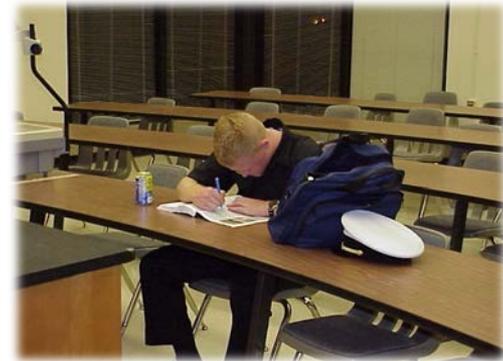
Annual Calendar Overview

Jan	Feb	Mar	Apr
May	Jun	Jul	Aug
Sep	Oct	Nov	Dec

The Academic Adventure Ahead ...

- **What would you like to learn about?**
 - ... astrophysics to Arabic ...
 - ... history to higher math ...
 - ... engineering design to economics ...
- **What kind of educational opportunities interest you?**
 - original research with a faculty mentor
 - attend graduate school in 1/C, finish Master's degree by December after USNA graduation
 - intern at the Maryland legislature
 - complete two or more majors
 - achieve a minor in a language
 - earn honors in a major
 - spend summer cruise aboard ship of a foreign ally
 - summer internship at a Navy or Defense Dept laboratory
 - study in a foreign country during the summer
 - spend a semester abroad
 - prepare for Rhodes, Marshall, Gates, or Truman scholarships

A View Into the Real Academic Experience...



Challenge!



Frequent Interaction with Faculty



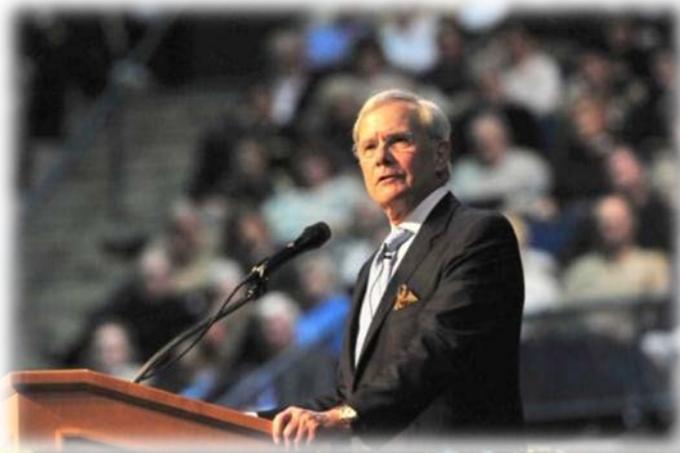
Active/Collaborative Learning



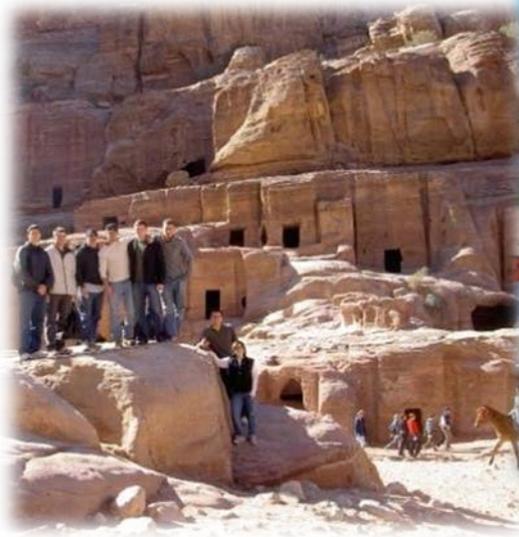
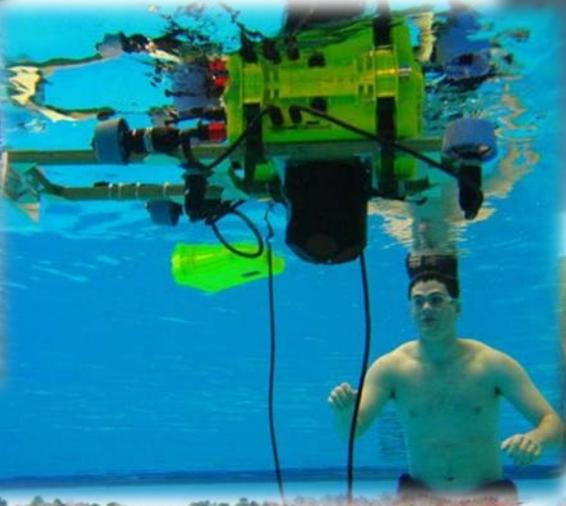
Learning Inside the Classroom



Learning Outside the Classroom



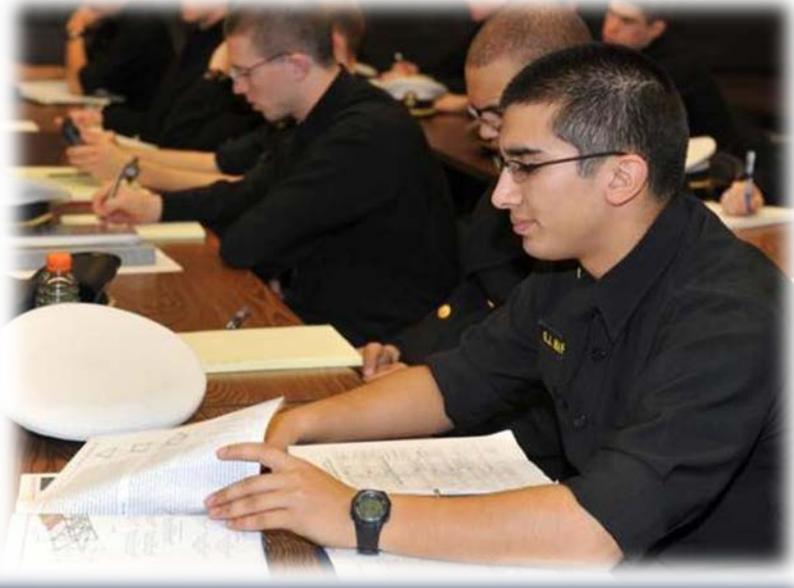
Learning REALLY Outside the Classroom



Campus Support



Success in College: What Matters Most?



Dean Waters'

“Top Ten List” for USNA Academics

1. Small, Personalized, Interactive Classes
2. Outstanding Faculty
3. Outstanding Facilities
4. Academic Programs on par with other highly-respected U.S. and international programs
5. Academic Support that is second-to-none
 - Advising/Mentoring by faculty
 - Extra Help – many types
6. Extensive International Opportunities – avail to all
7. Extensive Summer Internship Opportunities
8. Extensive Research and Special Academic Opportunities
9. Outstanding Grad Ed Opportunities and Support
10. **>87% Graduation Rate in 4 years**

- An abundance of educational opportunities and more are made available to you by an absolutely outstanding faculty committed to your academic success.
- Take advantage of these next four years!
- Let the adventure begin ...
but remember the basics ...

Requirements:

Degree and Commission

- Academic
 - Complete core courses.
 - Complete required courses in a major.
 - Achieve an overall GPA of 2.00.
 - Achieve a 2.00 in major to earn *designated* degree.
- Physical education
 - Complete all PE courses and PRTs.

- Achieve standards in summer training each year.
- Achieve standards in
 - Military performance,
 - Honor, and
 - Conduct.
- Accept a commission, if offered.



meet these requirements and
you will get to do this ...



on Friday, 22 May 2020

and you, too, may lead and serve ...



Ex Scientia Tridens



From Knowledge, Sea Power

Questions ?







Class of 2020

Academic Program Brief

Associate Dean for Academic Affairs

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