



The Naval Academy Academic Program

Welcome!

Jennifer K. Waters, PhD, PE
Associate Dean for
Academic Affairs





Purpose of USNA is in its 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.





USNA Academic Program

- 4 years (8 semesters)
- 25+ academic majors
- ~1,000 graduates per year
 - U.S. Navy & U.S. Marine Corps
 - ~15 international midshipmen per year
- ~88% graduation rate in 4 years



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 Majors

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

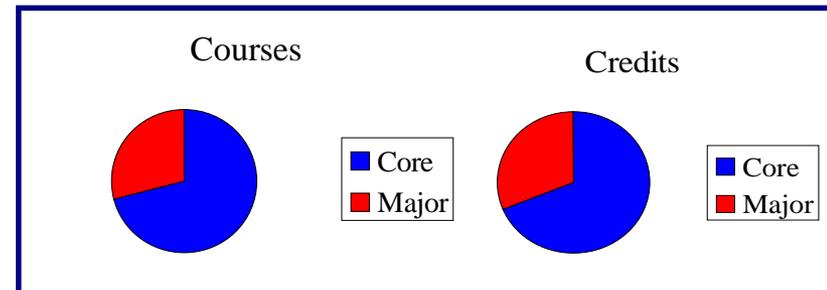
* = honors program offered
 + = STEM major



Academic Courses: Core & Majors

- Required course work ~ 2/3 of total
- In-depth study in one of our academic majors
- For some, at least 4 semesters of foreign language training (chosen from among 7 languages)

TECHNICAL	NON-TECHNICAL	PROFESSIONAL
Mathematics (4)	English (2)	Leadership (2)
Chemistry (2)	History (3)	Ethics (1)
Physics (2)	Government (1)	Law (1)
Engineering (4)	Electives (2)	Seamanship/Navigation (3)
Cyber (2)		JO Practicum (1)
		Physical Ed (8)
	Foreign Language (4)	





Core Academic Courses

4/C Fall	4/C Spring	3/C Fall	3/C Spring	2/C Fall	2/C Spring	1/C Fall	1/C Spring
Leadership I			Ethics		Leadership II	Law for the Junior Officer	
Seamanship	Cyber I	Navigation I		Navigation II			Junior Officer Practicum
Calculus I	Calculus II	Calculus III	Mathematics IV	Electrical Engineering	Cyber II		
Chemistry I	Chemistry II	Physics I	Physics II		Weapons Engineering	Naval Engineering I	Naval Engineering II
English I	English II	Civilization I	Civilization II		Humanities & Social Sciences Elective	Humanities & Social Sciences Elective	
Naval History	US Government & Constitution						Free Elective



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	



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	
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	
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

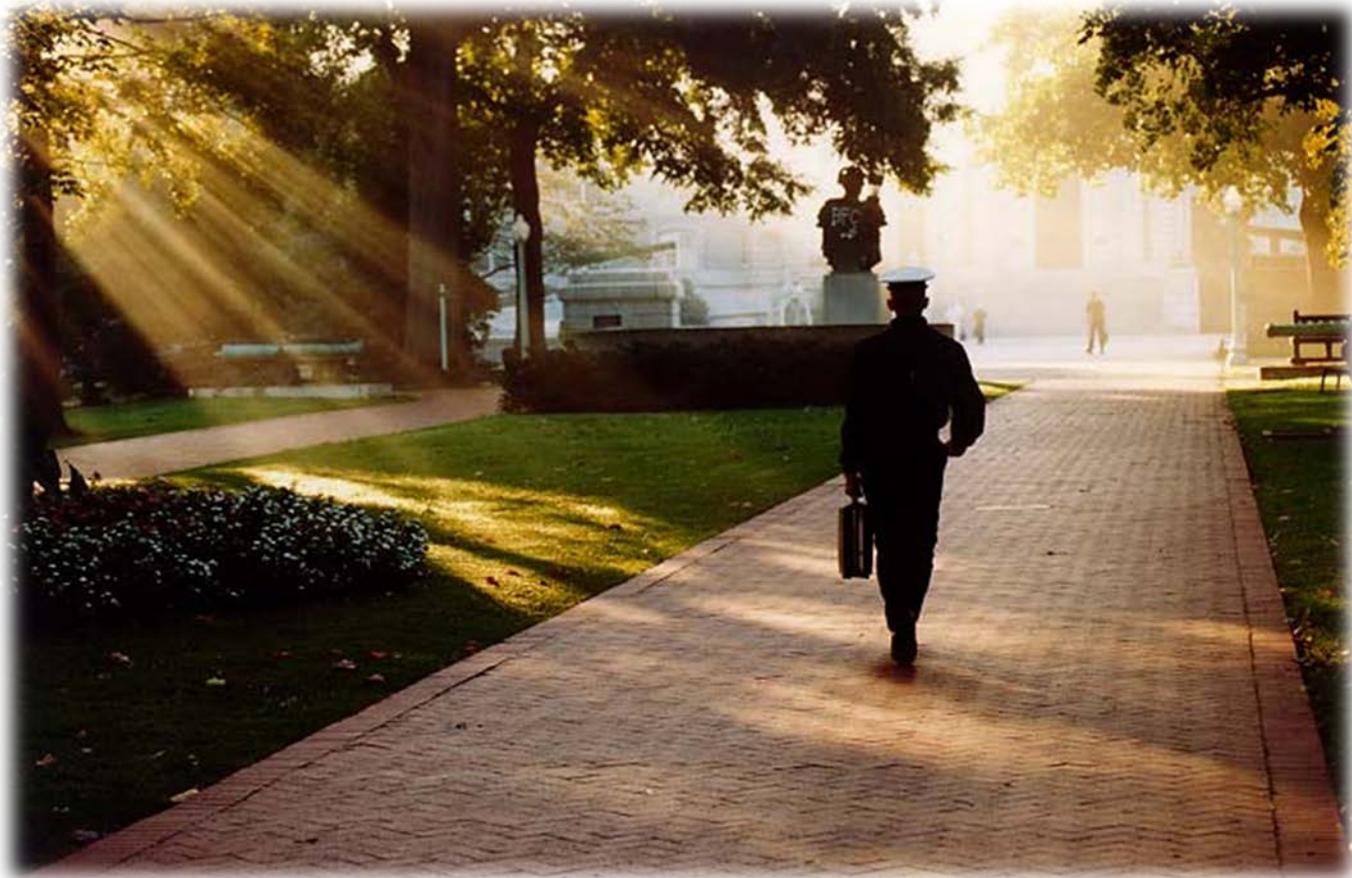


Validation

- Validation “checks off a course” that is normally required at USNA
 - Based on work completed elsewhere
 - Some ways to validate include
 - AP Scores, IB (others considered)
 - Other College Coursework – need transcript
 - Exam taken at USNA
- Validation allows a midshipman to “get ahead” of requirements
 - Participate in other special programs
 - Lighter academic load
- Validation for a specific course is dependent on dept criteria:
<http://www.usna.edu/Academics/Candidate-Information/Course-Validation-Policy.php>
- Validations occur
 - Prior to (ABS) / during plebe summer (exams)
 - Near the end of plebe summer (e.g., AP scores)
 - After Plebe summer
 - ... anytime



A Typical Academic 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	

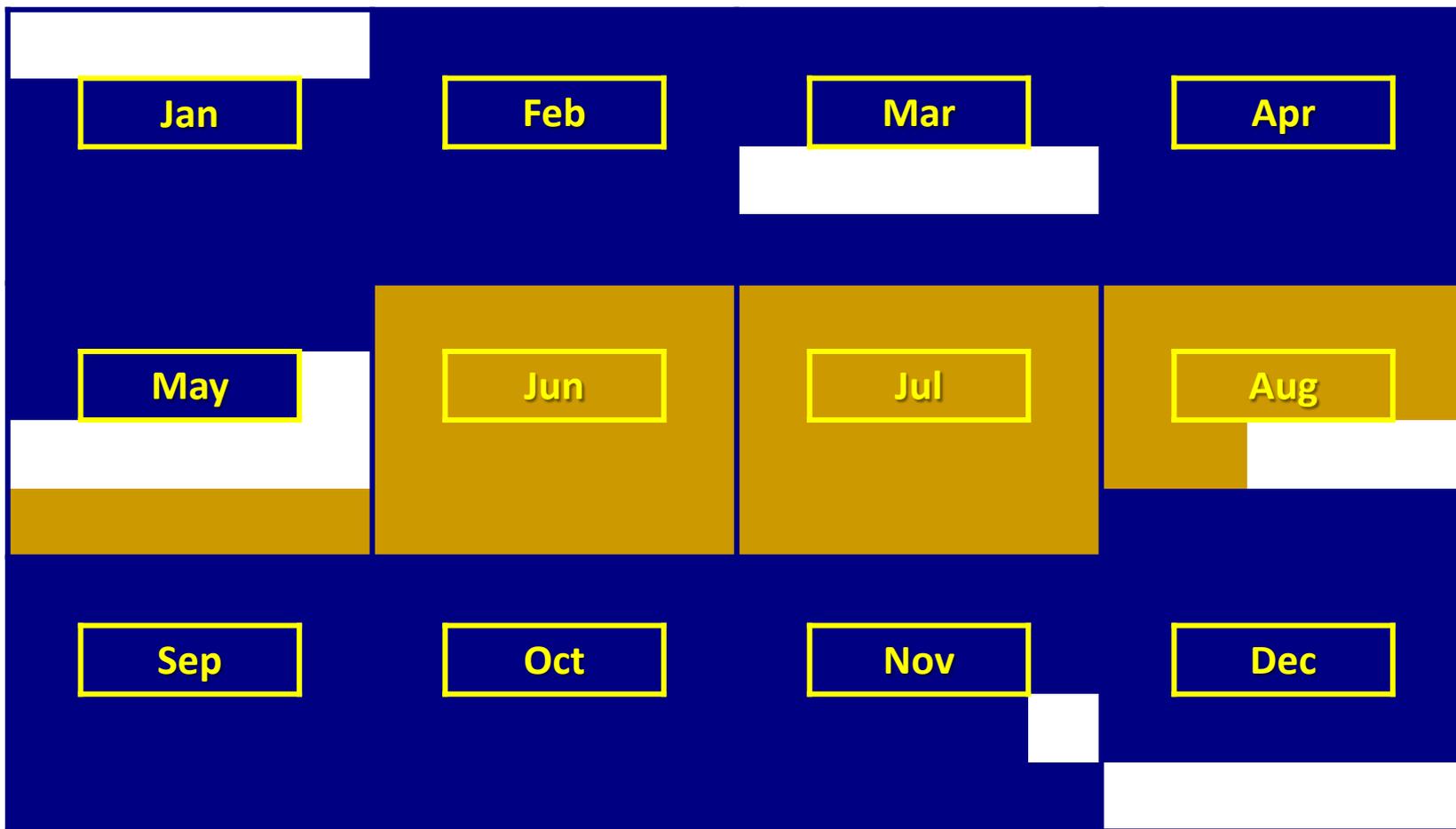


Weekly Schedule

	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



Annual Calendar Overview





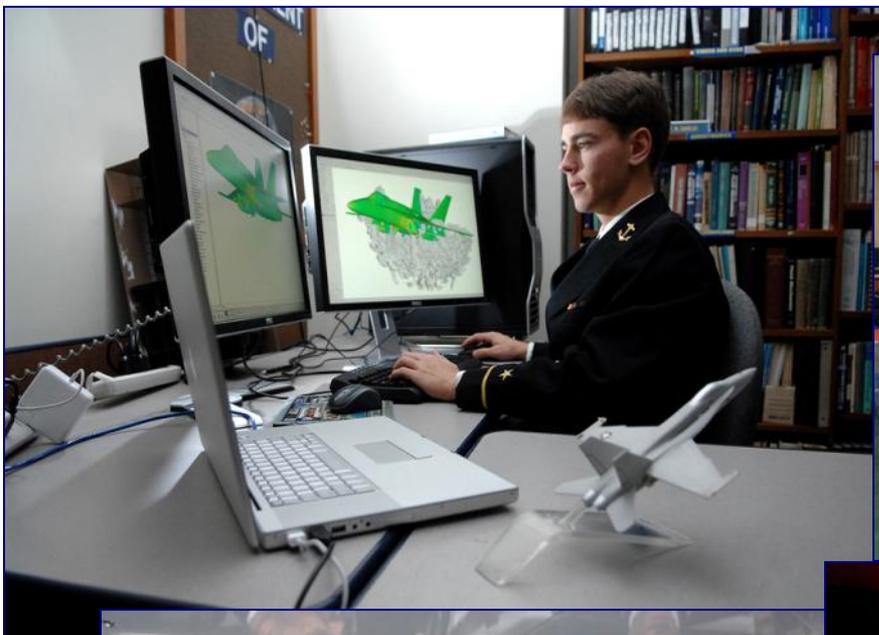
What's Special About USNA's Academic Program?

At USNA: The Learning Environment

- Small Class Sizes (≤ 18 students per class) ...
Dynamic, Interactive Classroom Environment
- Professors/Instructors
 - Teaching is #1!
 - Profs Teach Class (No Grad Students)
- World-Class Facilities – *for the undergraduate program (compare to other schools)*
- Lots of Additional Help Available –
Positive, Supportive Environment
 - All resources are available to all midshipmen

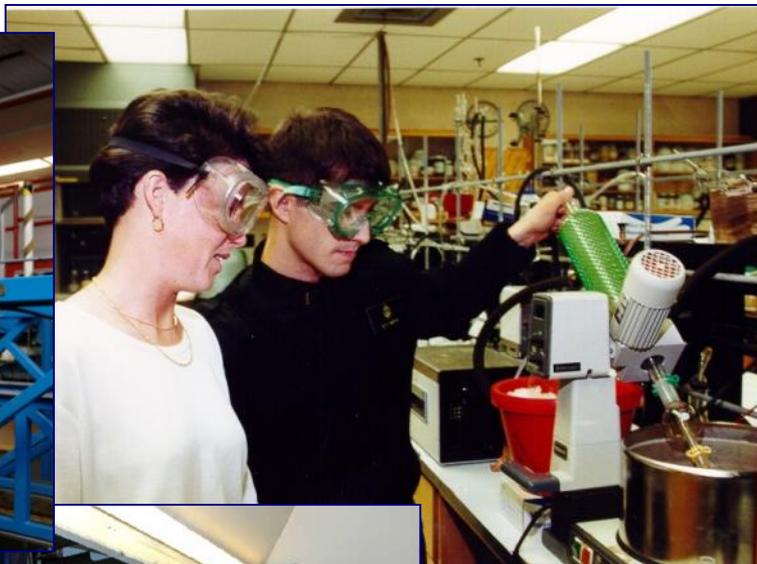


Challenge!





Frequent Interaction with Faculty



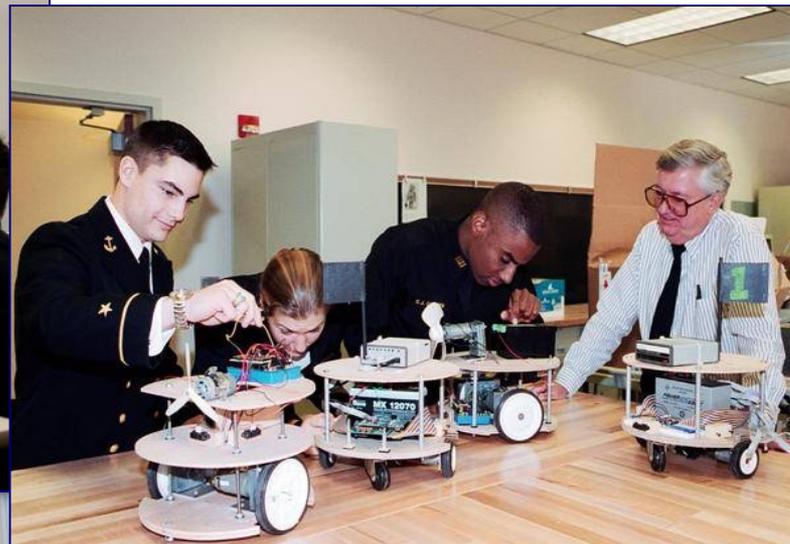


Active/Collaborative Learning



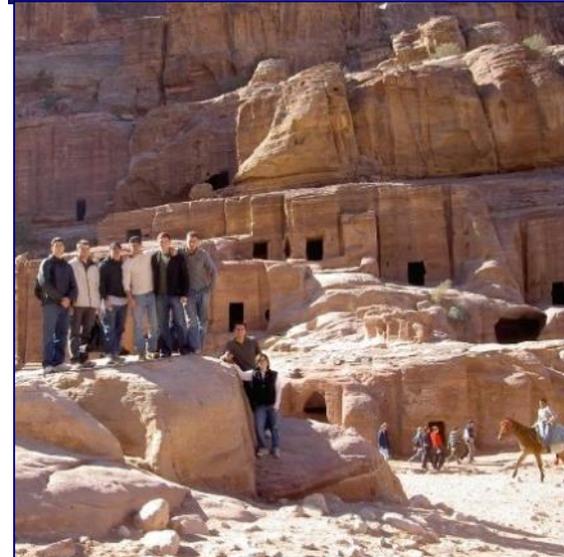
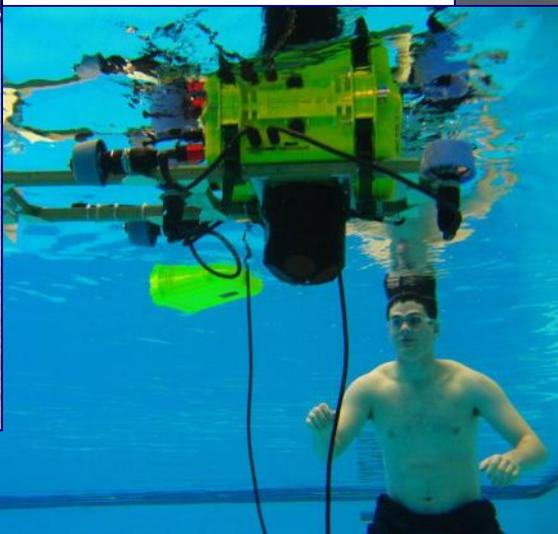


Learning Inside the Classroom





Learning Outside the Classroom





Academic Support





Academic Support

- **Extra Instruction (EI) / Extra Help**
 - Profs have open-door policy
 - Every student has a faculty academic adviser/mentor
- **Center for Academic Excellence (“AcCenter”)**
 - Supplemental Instruction
 - MGSP (peer tutoring)
 - Study Skills
 - Writing Center
- **Math Lab, Chem Lab, Engineering Lab**



Internships

- Summers – 3 Blocks
 - 2 blocks are training
 - 1 block is leave
- Internships opportunities
 - Navy and other DoD labs
 - Civilian organizations
 - Domestic, International
- Some internships count for training
Some are fully funded, some partially funded



Special Academic Opportunities

- **Research and Special Course Opportunities** in All Fields / All Majors
- **Competitions** between other schools
- **Academic Travel** (Local / Long Distance / International)
 - Conferences
 - Special Events
 - Volunteer
- **Study a Semester Elsewhere**
 - USAFA, USCGA, USMA
 - Study Abroad
- **Graduate School**
- **...and More!**

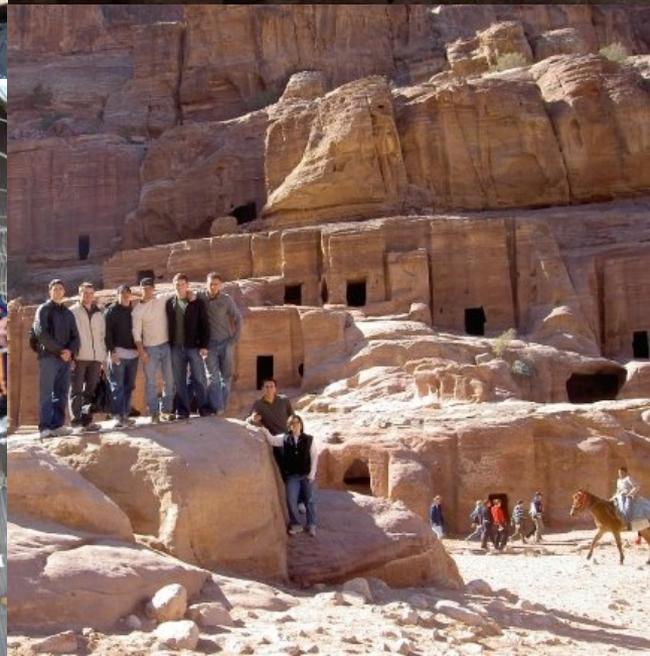


International Program Opportunities

- USNA Goal is for majority of midshipmen to have an **international experience ...**
- **Short-Term** (~1-2 weeks)
 - Faculty-led
 - Spring break, other times
- **Moderate Length** (~4+ weeks)
 - Summer Internship
 - Some have pre- (and possibly post-) coursework
- **Longer Term** (one semester)
 - Semester Study Abroad
 - No prior language study required if STEM major



International Program Opportunities





More Special Elements of USNA's Academic Program...

Beyond USNA: Graduate Education

- There are several graduate education opportunities available to USNA graduates
- USNA grads perform very well in graduate school
- *Grad Education does extend typical service obligations; note also that Navy and Marine Corps have different policies. See <http://intranet.usna.edu/GraduateEducation/additionalserviceobligation.php>*



Graduate Education Opportunities

- **VGEP** = Voluntary Grad Ed Program
(Master's Degree complete by December of Grad Year – aka Bachelor + Master Degrees in 4 ½ years!)
- **Immediate Grad Ed Programs**
 - **NPS, Civilian and/or International** Immediate Grad School
 - **Bowman Scholarship Program**
 - **PPAC** = Premedical/Predental Advisory Committee
(~10-15 midshipmen commission into MedCorps or DentalCorps)
- **“Delayed” Grad Ed Programs** (MC/Navy Burke)
- *More info:*
<http://intranet.usna.edu/GraduateEducation/index.php>



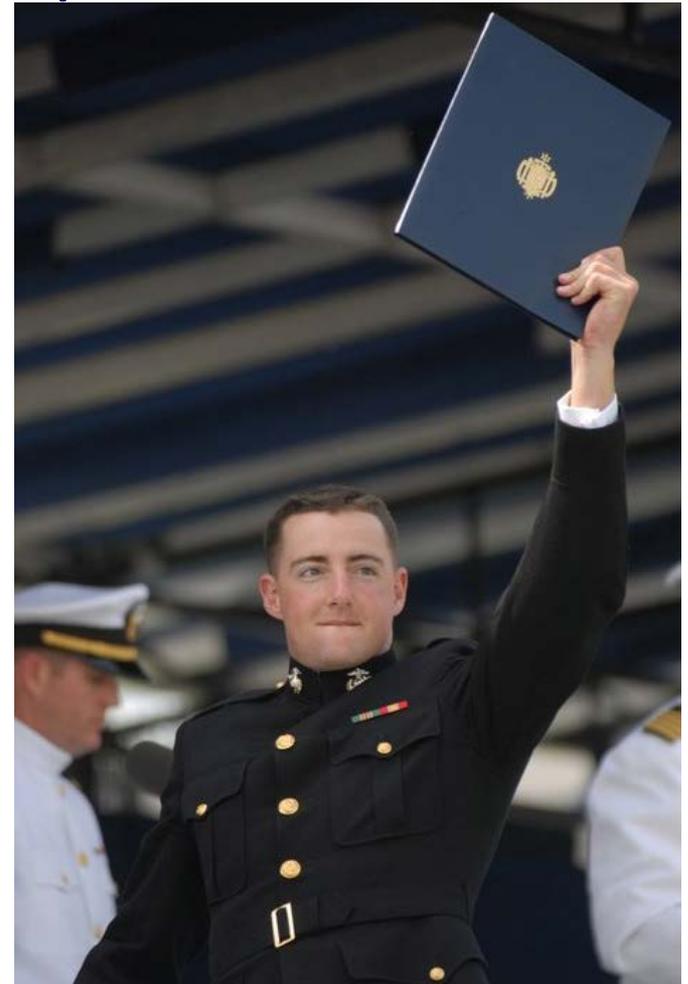
Graduates Earn A Diploma and a Commission

- **Requirements**

- Academic [GPA \geq 2.0 (“C”)] incl Completion of Core & Major courses
- Physical Education
- Summer Training
- Honor, Conduct, Aptitude for Commissioning

- **>87% Graduation Rate
in 4 years!**

- Compare Harvard (86%), MIT (84%), Penn State (65%), Princeton (88%), U of Md (67%)





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)





College Rankings



America's
BEST
Colleges



PayScale



Boy Scouts



America's 50 Best Colleges

TS the *best* schools



Dean Waters' Top 10 Reasons USNA's Academic Program is So Special!

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**



U.S. Naval Academy



Ex Scientia Tridens

From Knowledge, Sea Power





